

FEMALE CONTRIBUTION TO NATIONAL INCOME: EVOLVING A NEW METHODOLOGY

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By

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August 2023



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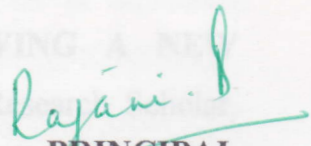
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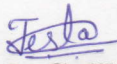


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DECLARATION¹

I hereby declare that the thesis entitled **FEMALE CONTRIBUTION TO NATIONAL INCOME: EVOLVING A NEW METHODOLOGY** is a bonafide record of research work carried out by me at P.G. & Research Department of Economics, The Zamorin's Guruvayurappan College, Kozhikode, under the guidance of Dr. M. G. Mallika, and no part of this thesis has been previously presented or submitted elsewhere for the award of any degree or diploma or similar title to this or any other University

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Ms. Jesla Galibdeen.P

Dedicated to my father

Galibdeen Sherifdeen

Dedicated to my father

Galibdeen Sherifdeen

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LIST OF ABBREVIATIONS

S N A	: System of National Accounts
T U S	: Time Use Survey
G H P	: Gross Household Product
G N P	: Gross National Product
U N S N A	: United Nations System of National Accounts
O E C D	: Organisation for Economic Co-operation and Development
M O S P I	: Ministry of Statistics and Programme Implementation
M P S	: Material Product System
N B E R	: National Bureau of Economic Research
N I U	: National Income Unit
C S O	: Central Statistical Organisation
N A D	: National Accounts Division
G D P	: Gross Domestic Product
N S S O	: National Sample Survey Organisation

CHAPTER I

INTRODUCTION

1.1 Introduction

Household is the basic unit of the market economy. As a production unit it produces unpaid goods and services to household members. It creates a wider impact on the growth performance of the economy. Majority of the household work is done by women which is not included in the calculation of national income (Kulshreshtha A. C. & Singh Gulab, 1999). The production of goods and services for the consumption of the household by using capital and unpaid labour is termed as household production. In this process, the intermediary products are converted into final commodities (Ironmonger Duncan, 2001). Housework includes cooking, cleaning, child care and care for elder people which are the basis for the prosperity of household and thereby economic growth. The household activities help to guarantee favourable health conditions for the family members and the care protects the supply of future labour force (Amporfu Eugenia et al., 2018).

Though household work improves the welfare of the household members and thereby the society as a whole, a lot of time is devoted by the women for this unpaid work and that is not included in the national account statistics. Women are the major contributors of human capital formation and it provides quality labours that are able to produce output to increase the national income of the economy (Hirway Indira, 2015). Though women engage in household production of output on the one side and human capital formation on the other, their contribution is unaccounted in the national income. Hence the present study tries to calculate the value of this unaccounted contribution of female in national income by collecting a sample of households from Chalakudy municipality. Moreover, the present study tries to unveil the fact that female contribution is under-valued due to the existing data collection methods. Hence the study collects time utilisation details of males and females and compares the gender difference in time utilisation for market work and domestic work. This study collects the gender difference in time utilisation pattern in SNA, Extended SNA, Non-SNA activities.

Households, just like firms produce goods and services and become production units (Bivens E. Gordon & Volker . B Carol, 1986). The production activity took place in household is mainly done by females and the outputs are composed of different types of food items and the services produced in households are washing services, cleaning services, caring services etc.

The household Economy and the market economy are different on the basis of its motives. The purpose of household production is the welfare of the family, whereas; the purpose of market production is profit. Though the motives are different, household economy and market economy are interrelated. Production of goods and services in the firms or meant for market are included in the calculation of national income, while that of household is not included. Because of the non-inclusion of household production, our national income is under evaluated. Hence the present study tries to calculate the amount of production which is happening in the household in terms of money by using two different methodologies. Due to the non-inclusion of household production in national income, the labour power utilised by the persons (majority females) involved in household production is also unaccounted. While identifying the real contribution of the females involved in household production, gender policies will be more meaningful.

1.2 Context of the Study

There is no such widely accepted method or guidelines to calculate household production (Pandey R.N,2000). Though there were many attempts (Statistics Canada, 1995; Povazanova Mariana et al., 2015; Suh Jooyeoun, 2019; Suh Jooyeoun et al., 2020; Yadav Sheela & Sharma Nidhi, 2021; Bivens E.Gordon & Volker. B Carol, 1986; Fitzgerald John & Wicks John, 1990; Fitzgerald. M John et al., 1996; Fender Valerie, 2012) to calculate household production by using input and output approach¹.

Within input approach there are a number of studies which uses replacement cost approach ² (Statistics Canada, 1995; Povazanova Mariana et al., 2015; Suh

¹ Details of input approach and output are given in chapter 3 page.35.

² Details of replacement cost approach, specialist wage approach and generalist wage approach and opportunity cost approach are given in chapter 3 page.36.

Jooyeoun, 2019; Suh Jooyeoun et al., 2020; Yadav Sheela & Sharma Nidhi,2021), specialist wage approach (Hunt .C Janet & Kiker .B.F, 1979; Choudary Natasha et al., 2009) and generalist wage approach (Hamdad Malika, 2003; Sharma K.C & Devi Lalita, 2014). There were studies based on opportunity cost approach (Statistics Canada, 1995; Miranda Veerle, 2011). There are studies that used output approach, (Bivens E.Gordon & Volker .B Carol, 1986; Fitzgerald John & Wicks John, 1990; Fitzgerald. M John et al., 1996; Fender Valerie, 2012) to calculate household production.

In India, Pandey R.N (2000) by using the TUS data tries to calculate the monetary value of Extended SNA activities of the state of Gujarat and Haryana. In this study they used input method by using wage rate. This study used a common methodology in calculating the value of non-marketed activities. Choudhary Neetu & Parthasarathy. D (2007) calculated the contribution of women to food security through unpaid work. This study collected data from two villages of Nanded district of Maharashtra. They calculated the value of food in per day basis by using the aggregates of average daily wage earnings. They adopted male wage rate to calculate women contribution to food security. Choudary Natasha et al., (2009) calculated the monetary value of the non-marketed production by using the wage of a single activity for calculating the value of the entire set of jobs. This study was conducted during the year 2009 in Nagpur city.

Sharma K.C & Devi Lalita (2014) conducted the time use survey in Shimla district of Himachal Pradesh. They calculated the value of unpaid work by using average time spent for the activity multiplied with wage rate of the domestic worker. Sengupta Anindita (2016) conducted a study in Hooghly district of West Bengal. They used the recalled method of time use survey to collect the data. For the evaluation of the unpaid work, they converted the daily wage rate into hourly wage rate after using this wage rate multiplied with the total time spent for activity. Yadav Sheela & Sharma Nidhi (2021) calculated the value of non-marketed production by using market replacement cost method in Ghazipur city in Uttar Pradesh. They used both generalist and specialist wage rate.

In Kerala two empirical studies had taken place. R.Ramya (2013) calculated the time allocation of working women and compare the time allocation pattern of different occupations. This study calculated the value of domestic work of working women by using the formula of average time spend for domestic work multiplied with the average salary per hour, these salary is equivalent to the position of each equivalent position. This study had taken place in Thrissur district of Kerala. Skariah Anila (2014) conducted a study in Kottayam district of Kerala. In this study she explains the time allocation pattern of primary caregivers. This study also analyses the implication and influence of unpaid care work and socio-economic conditions of unpaid caregivers.

Though there were a number of studies attempted outside Kerala, in calculating the unpaid work, there is no such comprehensive study exists in Kerala. Moreover, there is no such studies in India which uses both input and output methods simultaneously to calculate the contribution of female in national income. The gender difference in time utilisation pattern is discussed a lot, but there is no such studies which actually calculate the gender difference in household production in monetary terms. Present study trying to fill this research gap.

1.3 Statement of the Problem

Kerala, a state which is having high human development index, favourable sex ratio, high women literacy rate, the economic participation of women is very low. This is really a puzzle in front of the researchers. Though a lot of gender policies were introduced, the work participation of women is still very low. Studies shows that the unemployment rate of women is very high in Kerala. It is argued that the major reason behind the lower work participation of women is the household work burden of women (Mallika M .G, 2010). In this context, it is relevant to find out the actual amount of household production which is happening due to an involvement of women in Kerala. The understanding of the level of household production will help the policy makers to frame gender policies without reducing family welfare. Though studies argued that women are actively participating in household production, the actual contribution is not calculated. Without identifying the amount of participation of women in economic activities, whether accountable or non-accountable, gender policies may not create

expected results. Moreover, it is needed to develop a reasonable methodology to calculate the unaccounted work of female for a better understanding of the women issues of a state like Kerala. Though in India, there are some attempts made in calculating the time used in different activities by the households, the valuation of this time is not done by using input and output methods. Hence, it is a path breaking attempt to develop a methodology which can be best situated in understanding the actual economic contribution of women in India.

In almost all studies and from personal experiences it is seen that majority women are reported to be involved in household work, but are not considered as a part of labour force. The understanding of the unaccounted work time by women alone will not create any positive outcome in the economic participation of women without identifying the actual economic contribution of women to society. In Kerala and India, there are no such studies available in this context in identifying the gender difference in unaccounted work. Hence the present study is a path breaking one which will provide some concrete understanding of the female economic contribution in national income. Moreover, it is really a problem to identify the suitable method which can be used in Indian context.

The following are some of the research questions which the study is trying to answer.

1.4 Research Questions

- Is there any gender differences in time use pattern?
- What is the gender difference in time used for SNA, Extended SNA and Non-SNA activities?
- How much time is spent on different SNA activities by male and female?
- Is there any difference in time use pattern in holidays and normal days?
- Who is spending more time on personal care?
- Is marital status affect time use pattern?
- Whether the presence of children affect time use pattern?
- Whether the presence of a disabled persons affect time use pattern?
- Is type of employment affect time use pattern?

- How much production is happening in an average household which are not included in National Income?
- What is the gender difference in household production?
- Is there any difference in the amount of household production by using different methods?
- Which is the most suitable method for calculating different items in household production?

1.5 Objectives

- To analyse different methods in calculating household production and develop a suitable one for Indian context.
- To analyse the socio-economic status of the working age population in chalakudy municipality.
- To analyse the time utilisation pattern of working age population and the gender differences.
- To calculate the amount of unaccounted outputs produced by working age population in Chalakudy Municipality and analyse its gender difference.

1.6 Methodology

The study is basically a methodological and empirical one which uses data which is collected from 418 working age population from 149 households in Chalakudy municipality. The calculation of unaccounted production in the household necessitated a suitable methodology. Our first objective will be achieved by analysing different methods which are used in different parts of the world.

While analysing different methods used, it is seen that majority studies adopted input method for calculating the household production. In input method, specialist wage and generalist wage methods are used. In some other studies output method is used. In the input method the value of inputs used for household production is used for calculating the amount of output produced (Gee Fai-kar, 2015). Time used for household production is collected by using time use survey and it calculates the value of output by multiplying the amount of time with the specialist wage or housekeeper

wages (Ironmonger Duncan, 1996). Specialist wage is the wage of the labourer who is doing the specific type of job in the market. For example, the wage of sweeper is taken for calculating the output produced in the household for sweeping job. Just like in all types of jobs, job specific wages are used for calculating the output. In the case of generalist wage method, whatever be the work done in the household, same wage is used for the calculation of output. The used wage is equal to the market wage rate for housework (Gee Fai-kar, 2015). Present study used specialist wage method along with output method for calculating household production. Usually in the case of output approach, the cost of inputs, consumption of fixed capital and taxes are deducted from the value of homely produced output (Kulshreshtha A. C. & Singh Gulab, 1999). Present study calculated the value of household production by deducting the value of raw materials and fuel cost from the amount of output produced within the household. The amount of output is calculated by multiplying the local market price of the output and the units of outputs produced.

From different methods used for calculating the value of the household products, the study calculated the value of output by using two methods. One by using the specialist per minute wage approach and another by combining specialist per minute wage approach and output method. Third chapter provides a detailed analysis of different methods used by different studies and discuss the method which is used for empirical calculation of the value of household production of an average working age person in Chalakudy municipality.

This study compares the gender difference in time utilisation pattern in the activities like SNA, Extended SNA, and Non-SNA by using time use survey. The study collected data by using one day recall method from 218 females and 200 males from the selected 149 household in Chalakudy Municipality. As the purpose of the study is to find out a suitable methodology for calculating the unaccounted household production, the study collects data from the households who are cooperating with the study. It is because, the willingness of the sampling units are very relevant in such a type of study, hence, those who are not willing to note the works done per day in diaries are excluded from data collection. Moreover, in our study we are not assuming any kind of heterogeneity in between different groups, and it is assumed that all the

households in Chalakudy municipality are homogenous in its household production characteristics. All the persons in between 15-59 age category in Chalakudy Municipality is our population. And we collected data from all persons in between 15-59 age groups from the sample households selected. While comparing the total population in Chalakudy Municipality, with 95% confidence interval and 5% margin of error, it is needed to have a sample size of 382. We collected data from 418 members for correcting the sex ratio of Kerala as for 1000 males to 1084 females. Hence we collected data from 200 males and 218 females to keep this sex ratio. For analysing the data collected from the households, 116 activity codes which are used in July 1998-June 1999 pilot time use survey is used.

1.7 Conceptual Definitions

- SNA: “ The System of National Accounts (SNA) is the internationally agreed standard set of recommendations on how to compile measures of economic activity in accordance with strict accounting conventions based on economic principles (European Commission. et al., 2009). SNA Activities include Economic activities in the primary sector, Economic activities in the secondary sector ,Economic activities in the tertiary sector ” (MOSPI, 2012)
- Extended SNA: These activities “ include activities pertaining to household management, activities related to care, i.e. care of children, the elderly, the disabled etc and activities related to voluntary work – individual and organizational ” (MOSPI, 2012)
- Non-SNA : “ These are Personal activities and it could be broadly divided into these categories based on their characteristics: self development and human capital formation (education, training etc), personal health and hygiene, sports, games, exercise etc, socialization, recreation, celebration, participation in religious and spiritual activities, rest, sleep, relaxation and use of media” (MOSPI, 2012)

1.8 Chapter Schemes

The thesis is organized in such a way that in the first chapter gives an introduction which includes the context, statement of the problem, research questions, objectives and a brief methodology. In the second chapter a detailed literature review is given. The third chapter deals with the methodology of the study. This chapter is focused on the existing household production evaluation methods and also incorporates the new methodological framework for this study.

Fourth chapter analyses the socio-economic status of the sample respondents. The fifth chapter gives the time utilisation pattern of the sample respondents and analysed the gender difference. The sixth chapter analyses the gender differences in household production and calculate the amount of actual monetary contribution which are not included in national income by using specialist per minute wage approach and output method. Both these methods are chosen on the basis of the nature of the household activities. The Seventh chapter is the conclusion and findings of the study.

1.9 Limitations

The study uses one day recall method for collecting primary data. While recording the details, persons may forget some of the activities and their exact time. But this may not be a big problem because we have collected the details of the activities in five minutes slots. Hence, the error will be reduced. Moreover, we collected data from those who are willing to share their information. Those who are not ready to share are excluded from our sample. These are the limitations of the study. Moreover, due to the fear of population related survey, some households are reluctant to share their details. Hence, we have to depend upon those households who are cooperating with us in data collection. The purpose of the study is to develop a practical methodology to calculate the economic contribution of unpaid workers these limitations can be justifiable.

CHAPTER II

REVIEW OF LITERATURE

2.1 Introduction

The invisible or unpaid work of women has a major positive contributing element that creates welfare in the society and economy. But these contributing elements have not been recognized in national income. This chapter discusses the empirical and methodological studies related to unpaid work.

2.2 Studies Dealing with the Unpaid Work Position in Economic Theories

Becker S. Gary (1965) introduced new household economics and considered household as producer and consumer. His theory considered time as an important input and developed a theory which explains how production is happening in the household. Traditional theories considered households are doing only consumption activities. He considered household as a firm and analysed the importance of non-working time (household work time) and its contribution to economic prosperity. When compared to the working time (SNA), the non-working time (Extended SNA and Non-SNA) contribution is significantly large. The Becker theory deals with the correlation between non-working (Non-SNA) time and economic prosperity. Becker considered household on the one side as a production unit and on the other as a utility maximizer. His theory is purely based on the comparative advantage concept. Comparative advantage between the men and women decides the market work for men and non-market work for women.

Pollak. A Robert & Wachter. L Michael (1977) criticized the household production theory on the basis of the joint production nature of the activities in the household. They argued for an alternative method due to the existence of joint production and nonconstant return to scale exists in household production.

Gronau Reuben (1977) developed the household production theory by incorporating the macro variables like labour supply, business cycles and consumption behaviour. This paper pointed out that these macro variables are not separated from

time used for Non-SNA activities. These variables are determined by demand for household activities and technologies in household production.

Heitlinger Alena (1979) explained the theoretical consideration of household work of women while discussing the position of women in Soviet Union and Czechoslovakia. This study pointed out the Marxian theory of domestic labour. Marx considered productive labour is having an exchange value that creates surplus value. Moreover, it is argued that these household productions do not cover the social aspects due to lack of exchange value. The social system decides whether an activity is productive or not on the basis of its exchange value.

Brown Jo Lisa (1984) criticized the theory of Becker on its comparative advantage model. The gender related aspects are not considered in the argument of Becker that marginal productivity of female in household production is high when compared to male and the market productivity of male is high compared to female.

Waring Marilyn (1999) explained the reasons behind the exclusion of unpaid work in United Nations System of National Accounts. This study analysed the different opinions about the value concepts of Adam Smith, Joan Robinson, Alfred Marshall, J.M Keynes and Marx. This study analysed the home economics of Margaret Reid and theory of marriage of Gary Becker. In this study highlighted the empirical evaluation of household work in Canada (1961-71) and U.S in 1970. This study explained the Time Use Survey and its defects and pointed out the importance of unpaid work in national income accounting.

Desai Neera & Krishna Raj Maithreyi (1987) explained the three different schools of feministic thoughts about the women's work especially unpaid work. Though the 18th century's liberal feminism argued for the equality of women, they are against female economic participation. It is because they argued that it will reduce the wellbeing of children and the time for house management. The men's duty is to acquire income and they supervise or control the household expenditure. They agreed upon the sexual division of labour though they argued for civil and educational rights of women. The second movement of feminism 1969-70 arrived in the name of Radical Feminism. Radical feminist argued that sexual division of labour is coming from patriarchal nature

of the society and family. Biological difference creates a social difference in power and functions. In the area of unpaid work category, mutual child care work is one of the recommendations of radical feminist to maintain sexual equality. The third section of feminist approach is Socialist Feminism. They integrated the family with economy. Social Feminist considered child care as a productive work. According to them injustice towards women started with unpaid work of women.

Primeau.A Loree (1992) focused the factors that are responsible for the existence of the gender differences in the categorization of work. It is argued that gendered division is historically originated. The study highlighted the importance of household work in social wellbeing. This study recognized the opinions of occupation therapists related to the household work.

Dewan Ritu (1995) explained the role of gender in neoclassical economics. This study pointed out that neoclassical theories concentrate on the macro areas. They ignore the cumulative areas of economics. They denounce the two interconnected system of production or bearing of appreciable goods and the structure of recreation or reproducible workforce or manpower. In this manner, they avoid the household production or women's work. They incorporated the patriarchal or paternal affection in production. The activity or employment and the remuneration status in gender conjointly depend on the patriarchal system. In their perspective, on market activities are totally irrelevant in their area.

Fuller .G Christopher (1996) pointed out the important criticisms of Post Keynesians on household theory of Becker. Forget L.Evelyn (1997) explained the position of women's work in the writings of J B Say. In this study the negligence of women's unpaid work in the economy is highlighted. Moreover, the study analysed the natural sexual division of labour of J B Say. The study analysed the role of gender in economic theory of that time.

Wiro -Mattila Päivi (1999) criticized the existing theories and models related to the field of household. This study analysed the theory of Becker and the household models in a detailed manner. The study highlighted that Becker followed the unitary model to explain the household behaviour based on the traditional consumer theory.

The comparative advantage theory was criticized by this study. Dimand .W Robert et al. (2004) explained the role of gender in classical theories. They argued that classical economists gave importance to goods, they are productive and they considered services are unproductive, in this section they included the household. The proto feminist J.S Mill and Henry Fawcett ignored the economic role of women inside and outside the home. They concentrated only on the legal and economic rights of women. The classical argued that the presence of altruistic values need not be calculated.

Berg den van Bernard et al. (2004) explained the methods of informal care valuations and the related issues. The important methodology's analysed in the study are cost benefit analysis, cost utility analysis and cost effective analysis, revealed preference method, state preference method, proxy good method. This study deals fully with the methodological analysis of care work and also recommended that more research is needed in this area.

England Paula (2005) analysed five theoretical models to design the care work; Devaluation perspective, Public good framework, the prisoner of love frame work, Commoditization of emotion framework, the love and money framework. This study also discussed the evaluation of unpaid work and gender

Staveren van Irene (2010) discussed the Post Keynesian approach of gender and unpaid work in the feminist perspective. This work scrutinized the perspective of post Keynesians towards household work. The study criticized household production theory of Becker on the basis of feminist view point.

Mazurkiewicz-Zachorowska Anna (2016) focused on the importance of unpaid work in framing economic policies. The study analysed different types of labour; paid, unpaid and care. This paper deals with the conceptual, theoretical and empirical aspects of unpaid work and care.

2.3 Empirical Studies Related to Unpaid Work

Mitchell .C Wesley et al. (1921) calculated the amount of housewives contribution to national income in U.S during the time period 1909-1919. This study

used generalist cost approach for calculating the housewives contribution by multiplying the number of housewives with the average wage of the domestic servants.

Kuznets Simon et al. (1946) analysed the connection between expansion – contraction phase of business system and household works. This study calculated the contribution of housewives from farm and non-farm households by using the generalist wage method.

Hunt . C Janet & Kiker.B.F (1979) discussed about various methods of calculating unpaid work of household production. In this study they attempted to calculate household production by using replacement cost approach. This paper classified the household activities into six categories cooking, washing, house cleaning, shopping, child care and other activities. Data for the study is taken form 500 household in South Carolina in the year 1978. The study found that 27.1 percentage of the GNP is unaccounted and is produced within the household. The study used specialist wage approach. The study argued that a large amount of undervaluation exists in economic output due to the exclusion of household production in SNA.

Murphy Martin (1978) Calculated household production by using opportunity cost approach and market cost approach. This study collected data from persons above the age of 16 during two time periods 1960 and 1970 from USA. On the basis of the estimation the study proved that opportunity cost is not upward biased and market cost approach is suitable to value the household production.

Bivens E.Gordon & Volker. B Carol (1986) concentrated on the measurement of meal preparation of the USA households. This work analysed the methods prevalent in the measurement of the unpaid work of women. Value added approach is used in this study. In this study, fuel and household durables are considered inputs. The study also analysed the socio-demographic influences on value added. The study assessed the merits and demerits of the input and output method.

Fitzgerald John & Wicks John (1990) gave almost all methodologies related in the field of valuation of household output. This paper compared the direct and indirect approaches existing in the field. The authors strongly supported the direct output

approach. This study assumed homogeneity in the quality of the products from households and firms. The study collected 480 sample households in Missoula, Montana for the analysis. Six months recall method was adopted in this study. This article analysed the productivity of labour in the household on the basis of average productivity. The 't' test and Mann Whitney 'z' test are also used in this study. This study found that some of the activities, households are more productive than firms. This paper concluded the possibility of output approach in the field of productivity comparisons.

Statistics Canada (1995) gives a comprehensive package of unpaid work measurement. This study explains the opportunity cost and replacement cost approaches and empirically estimated the value of household unpaid work. In this study the value is calculated by using the replacement and opportunity cost approach. In the replacement cost approach, generalist and specialist cost approach were used. In the case of opportunity cost approach after tax and before tax was also considered.

Jain Devaki (1996) analysed the time allocation study conducted in Rajasthan and West Bengal. This time allocation study conducted in the period of 1982. This paper is empirical one and also gave important suggestions in coding the time use activities. This paper is a comprehensive one in the field of time use survey from India.

Fitzgerald. M John et al. (1996) empirically tested the household production by direct output method. This study gave importance to number of items produced rather than time. In this study household production inputs are time of husband, time of wife and the capital. They compare direct and indirect household production function. This study found that translog production function is very much suited to the data.

Ironmonger Duncan (1996) focused the creation of an account of outer boundary of SNA; Gross household product. The summation of both gross household product and gross domestic product is gross economic product. Moreover, the study gave importance to both household labour and capital. This empirical and methodological study analysed the household production data of 12 OECD countries shows that the GHP of Australia is 341 \$ million.

Landefeld Steven. J & Mcculla .H Stephanie (2000) calculated unpaid work in the GDP data in the name of entries and adjustment measures. They also analysed how to incorporate the household production activities into the different headings under the main GDP calculations and this paper also showed the input-output table of household production and the amount of GDP.

Central statistical organisation (2000) India conducted the first national time use survey on a pilot basis in July 1998- June1999. The survey covered six major states in India from six major regions: Haryana from north India, Madhya Pradesh from central India, Tamil Nadu from south India, Gujarat from west India, Orissa from east India, and Meghalaya from north-east India. Notable result in the survey is that in the case of Extended SNA activities Gujarat ranked the first position. There is no wide variation in the time spending between rural and urban female, the time difference is 4 hours.

Wrase . M Jeffrey (2001) assessed the impact of the incorporation of home production in the analysis of business cycle. This study is based on the economic data of USA. The study argued that Macro variables and household production are correlated. The market economic situation is dependent on the household situation and it creates a great impact on the consumption and production indirectly. This article just reminds various methods to evaluate the household production. This study points out the true measurement of variations in the market economic factors found from micro level household economy and also shows the research gap in this area.

Pandey R.N (2000) evaluated the unpaid activities of women in the states of Gujarat and Haryana. This study was based on the time use survey of India conducted in the period July 1998 to June 1999. One district was chosen from each of the states. The study classified the rural –urban wage rate into six categories and converted the weekly time use data into annual time use data and multiplied by this wag rate. This study calculated the percentage of unpaid work in GDP.

Hamdad Malika (2003) explained the calculation methods used in the valuation of household's unpaid work. The study found that non-market economic activity plays an important role in market economy. This paper used the data of time use survey of Canada in the period of 1986, 1989, and 1992 and also used the Canada general social

survey and annual household survey for the estimation of unpaid work. The study explained the existing methods in the unpaid work valuation. Moreover this study calculated the unpaid household work by using generalist replacement cost method. The important findings of the study are women's unpaid work is greater than men and unemployed women unpaid work is greater than men.

Vaus de David et al. (2003) focused both empirical and methodological discussion of unpaid work. It empirically analysed the unpaid contribution of older citizens of Australia in the age group 55 - 64. The Data source of the study was based on Australian time use survey 1997. This study also discussed the methodological part to evaluate the unpaid work. They gave comprehensive explanation of the wages in the category of Replacement cost approach and explained the Opportunity cost approach.

Choudary Natasha et al. (2009) discussed the important methods of the valuation of the unpaid work. Sample selected for the urban area was Nagpur City in the state of Maharashtra in Central India and in the case of rural India sample collected from the village of Jhalap, a village in the State of Chhattisgarh in South Eastern India. In this study each household activities are valued on the basis of the per month salary of servants who are doing this jobs.

Choudhary Neetu & Parthasarathy. D (2007) focused the measurement of women contribution in food security. Their study was conducted in two villages of Nanded, Maharashtra. Tool of the study was time use survey. The collection of the sample was used by the method of stratified random sampling. 15 percentage of the population of Umra and 10 percentage of the population of Ashta were selected. Recall method was used for the study. This study used male wage rate for calculating the value of unpaid food production by female.

Shrestha Rajbhandari Menaka (2008) explained the empirical Valuation and time analysis of unpaid work. Samples were selected from 150 respondents from three municipalities and three village development committees in Kathmandu Valley, Nepal. In this, 120 were females and 30 were males. Both respondents were married. Urban and rural time utilisation pattern were separately shown in this study. Compared to urban, the rural women spend lot of time for unpaid work. So this study suggested that

women in rural areas should get more remuneration than urban areas because they spend more time for unpaid work than their urban counterparts.

Budlender Debbie (2010) focused various time use studies of unpaid care work of seven countries. The study distinguished the methodological behaviour of each country in collecting time use surveys. The countries included in the analysis were Argentina, Nicaragua, India, Korea, Japan, South Africa and Tanzania. This study found that men spend more time on SNA activities than Extended SNA activities. The highest difference is seen in the case of Japan and Tanzania.

N.Neetha & Palriwala Rajni (2010) study concentrated on the explanation of unpaid care work and its role in the time use survey. Both men and women spend large time on unpaid care work than paid work. This paper analysed the socio-economic factors influence the time used for Extended SNA and SNA activities. It is found that women hailing from households with a few members spend more time in SNA activities. The unpaid work is positively related with the number of household family members

Miranda Veerle (2011) analysed time use survey statistics of 26 OECD member countries and 3 emerging economies. By using Opportunity cost approach and Replacement cost approach, this study compared the status of different countries value of unpaid work. The study found that in all countries the time used for unpaid work by women is greater than their male counterparts. The study highlighted the importance of conducting time use survey in future.

Fender Valerie (2012) evaluated the study of care work valuation conducted by office of National statistics UK. In this study both formal and informal care work calculated by using output approach. The paper analysed the passive and active care hours of the study and highlighted the advantage of the output method.

Sharma K.C & Devi Lalita (2014) evaluated the unpaid category of work by using the time use survey of the sample area of Shimla district of Himachal Pradesh. They used the replacement cost method for calculation. This paper analysed the relationship between level of income and unpaid work.

Ferrant Gaëlle et al. (2014) empirically analysed the time utilisation pattern of Ghanaian women in paid and unpaid work. This study mentioned the importance of time use survey and household satellite account for measuring the unpaid care work.

Vargha Lili et al. (2017) conducted Surveys in 14 European countries except Norway. This study discussed the important methods of valuation of unpaid work and found out a new methodology of the time transfer of members within the household by using age and gender. They developed national time transfer account with the incorporation of Harmonized European Time Use Study (HETUS), Multinational Time Use Study (MNTUS), and European Union Statistics on Income and Living Conditions (EUSIL). This work identified the importance of household consumption and production. This study examined the previous works related to this area and they made some modification of earlier studies especially in the case of children's age. The main conclusion of the study is that children received more care time from other household members.

Gee Fai-kar (2015) examined how to incorporate the household consumption to the index of economic wellbeing. This is an attempt to club the market and non-market indicators into the measurement of the index of economic wellbeing. This paper analysed the existing methods of the quantification of the household produced goods. This paper used the input approach to analyse the results of OECD countries household production and analysed the output method.

Povazanova Mariana et al. (2015) focused the empirical valuation on the basis of the 2012 nationwide survey in Slovakia. In this study two versions of the replacement cost approach, specialist and generalist wage are used to find the value of unpaid work in Slovakia.

Sengupta Anindita (2016) found that the unpaid work and women empowerment relation is opposite; as the family size increases the unpaid work burden also increases. But when it decreases because of the increase in the number of household members, the burden of household work is distributed and so its magnitude becomes less. The study found the relation of unpaid work with education and income level.

Amporfu Eugenia et al. (2018) focused on the unpaid work valuation of Ghana on the basis of the 2009 time use survey. In this study they analysed paid and unpaid work separately. Activity time classification is divided into five sections: care, household work, paid work, education, leisure and personal care. The methodology used to analyse the study is national transfer account and national time transfer account. The study found that women specialised in household work and men in market work.

Suh Jooyeoun (2019) evaluated the unpaid care work in South Korea. In this study the care into three sections. The source of information from the Korean time use survey. Median specialist wage and generalist wage case both higher and lower wage is used. This study is an empirical one at the national level.

Suh Jooyeoun et al. (2020) evaluated unpaid care work in Bhutan. The study was based on the time use survey data. Both generalist and specialist wage was used to evaluate the unpaid care work. In the case of generalist wage minimum wage and the case of specialist wage vector of wages was considered in the calculation. They also analysed both gender time spending patterns for care activities.

Yadav Sheela & Sharma Nidhi (2021) calculated the value of unpaid work based on the primary data of Ghazipur District of Uttar Pradesh. They use the market replacement cost method. In this study divide the days into normal, abnormal and variant days. In the case of the specialist wage approach, they used the wage rate per hour, per day and month. They used generalist approach for calculation.

Das Pranati & Nayak Purusottam (2022) collected time use survey from 400 workers from two districts of Assam and calculated the value of unpaid work by using 9 activity codes. They used minimum wage, average local wage and average all India wage rate for the calculation of unpaid work.

2.4 Studies Related to Methodological Discussion of Unpaid Work

Quah Euston (1989) deals with both empirical and methodological discussion. This study explained the origin of the household work and the evaluation methods to evaluate the unpaid work. The important empirical studies in North America, Europe, and Asia are explained in the study.

Nordhaus. D William & Tobin James (1972) introduced the concept of measures of economic welfare or MEW. This paper focused on the welfare and cost part of the GDP. Measures of economic welfare were explained by adding the leisure and unpaid work with GDP and subtracting the environmental damage from GDP. This work is an important methodological contribution to the GDP.

Hawrylyshyn Oli (1976) explained the history and important methodologies existing in the field of household work valuation. This study also examined the important works of Mitchell, Simon Kuznet, Sirageldin, Nordhaus-Tobin, Walker-Gauger, Weinrobe, Colin Clark, and Lindahl also included the Casual-Journalistic Estimates. This paper includes the comparison of the chosen calculations and detailed explanation of the methodologies.

Hill T.P (1979) explained the questions related to household production. This paper analysed the term 'Do-it-yourself '. It clearly distinguished the terms of goods and services. This study explained the activities included in the GDP and analysed the excluding activities in SNA. This paper analysed the reasons of why these activities are excluded in SNA. The conclusion marked the variability of GDP and welfare.

Bockstael. E Nancy & McConnell. E Kenneth (1983) focused on the measurement of welfare in household production framework. This study noted the opinion of Robert Pollack and Michael Wachter about the joint productions in household and commodity demand function problems. This study found that welfare measurement is not possible by using the commodity demand function. This paper pointed out the role of Marshallian and Hicksian demand curve in the discussion.

Paul Harvey (1991) explained the empirical studies related to the household production. This paper mainly concentrated on the male participation in household output and clearly depicted the role of father and husband. This study reviewed the different studies related to the household production. This paper gave the important market factors that influenced the men and women household work.

Chadeau Ann (1992) explained the various opinions of economist who favoured to the argument of the household production to the national account. This paper

analysed the empirical value of the unpaid household activities in OECD countries. This study explained the versions of SNA and also discussed the measurement of household production and its difficulties.

Clermont - Goldshmidt Luisella (1993) analysed the different methods in the field of non-market time valuation; market replacement cost, opportunity cost method and output method. This paper analysed the issues and problems in the calculation of household time. This study found that output based valuation method is comparatively better.

Kulshreshtha A. C.& Singh Gulab (1996) focused on the calculation of unpaid work, for this they converted the weekly hours into personnel years (N), these hours are calculated with annual rate of earning for calculations (E). This annual rate of earnings is selected to be opportunity cost of housewife or the cost of hiring a single household worker. This paper proposed another method that the above noted 'N' divided into different adequate parts, that means how much time devoted to cooking, cleaning etc is separately analysed (Ni). This each part is multiplied with the corresponding market alternatives (Ei). In this case the household production is measured by using the formula of $\sum Ni Ei$. This study explored the concept of SNA and its three revisions 1953, 1968, 1993. This article analysed the role of unpaid work in SNA particularly the 1993 SNA. Their study highlighted the Indian experience in the measurement of valuation of unpaid work and also forwarded an opinion of 1993 SNA is flexible one.

Wood .A Cynthia (1997) focused on the explanation about the third party criterion and discussed the importance of unpaid work. This study gave detailed discussion about the production boundary and the exclusion of the unpaid work in the definition of production boundary. This paper found that third party criterion not only depends on market work standard but also the non-market delegation. This article discussed the issues in the third party criterion.

Stinson .L Linda (1999) highlighted the importance of time use survey and also analysed the methodological considerations. The study highlights the time use diaries methods of American agricultural departments and Australian Bureau of statistics 1992. This study discussed the coding schemes and the Eurostat classification system,

Australian classification system and U.N classification system. This paper opined that for International Comparability U.N classification is helpful because of its economics conceptualisation.

Kulshreshtha A. C. & Singh Gulab (1999) explained the non-market household production and its different methods of measurement. This paper explained the difference of 1968 SNA and 1993 SNA. This study analysed the importance and issues of unpaid household work measurement. The important value measurement in the field of household production which is not counted in the national income and not included in the production boundary was discussed. The various methods are Input approach, Output approach, Opportunity cost method, and Replacement cost method. According to this study, every approach has its own limitations; however output approach is superior to other approaches. But the time use survey only collected the information about labour inputs not output sense. This paper concluded that a powerful output methodology is needed for the measurement of value of household production.

Ironmonger Duncan (2001) analysed the household production and economy in a detailed manner. This paper explained the clear cut history of household production and also included the opinions of different writers. He also argued that the household is a separate economy. This article also contained the essence of household and market production and this paper included the results of empirical studies conducted by different authors or organizations . This paper pointed out the experience of Australian household production by using input-output table. This study recommended that the statistical authorities should establish a method to find out Gross Household Product (GHP).

Bhatia Rajesh (2002) explained the policy formulation taken by the government for the upliftment of women in all areas only based on a good and accurate statistical system. So the enumeration and incorporation of the unpaid category work of women in the national statistical system is very important. This article gave a clear cut summary of the time use survey conducted by CSO in July 1998- June1999. This article discussed the gender disparity index created by human development report 1995.

On the basis of the result obtained by time use survey of July 1998- June1999 this study concluded that equal opportunity is the basic stone of gender equality.

Budlender Debbie (2007) critically analysed the reviews of selected time use surveys. Some countries of Latin America, Africa and Asia were covered. The paper also gave some recommendations and clarified the activity status codes of the countries time use survey. From Asian countries India was also selected. This paper opined that India should design its own classification codes for its needs. In the conclusion , this study advocated the needs of the comprehensive time use survey and mentioned the importance of trainings in the collection of time use survey.

Antonopoulos Rania (2008) explained the importance of unpaid work and the methodologies and also explained the data of selected OECD countries including India. The study also mentioned the 1993 SNA version. The relation of unpaid work with macro economy, poverty, state policies and checked the interlinkage between paid and unpaid work. Time use survey was considered as tool for the collection of unpaid work. Informal sector paid workers' needs were also mentioned in the study. This study empirically showed the OECD countries position in time utilisation and at the same time they focused on the methodological part too.

Hirway Indira (2009) analysed the importance of Gary Becker theory of allocation of time. This study analysed the time use surveys in different period and its aim. This article gave a detailed explanation to the uses of time use survey. This paper showed the importance of time use survey, objectives, and methodological issues. This study revealed the fact that only the time use survey can capture the unpaid work clearly and accurately. This article concluded that it is very essential to include Non - SNA work and services related to personal in the present statistical system.

Swaminathan Padmini (2009) explained the importance of policy formulation in the case of unpaid labours. This study summarized the analysis of government of India report 1974 about the status of women. This paper recommended new policies for unpaid labour.

N. Neetha (2010) critically explained the importance of care work in the time use survey of India 1998-1999. The survey gave attention only to the unpaid domestic work and not care work. This study also pinpointed the important reasons that are responsible for the exclusion of care work in time use survey. These reasons came from the survey pattern, investigator, and also respondents. This paper argued that the proper inclusion of unpaid care work is also essential in time use survey. It leads to good macro policy decisions. This study totally analysed the care economy and its importance.

Hirway Indira & Jose Sunny (2011) explained the drawbacks of labour force survey overcome by the time use survey. Time use survey shows the time women spend on SNA and Non-SNA work. Work by women appears to be more scattered and to involve in multiple jobs, and women's burden of unpaid work is a constraint on their access to opportunities in the labour market. This study opined that time use survey has provided useful supplementary information on labour force in India.

Hirway Indira (2012) explained the drawbacks of NSSO survey. This study pointed out that missing labour force does not mean the lack of participation in employment. The real meaning is that the NSSO failed to capture the real workforce of the economy. This situation was overcome by the use of time use survey. This study analysed the views of different economists in this field like Hanushman, C.Rangarajan, Kannan and Raveendran. According to this study, the incorporation of the unpaid workers in the labour force is really needed. It is only possible through the data collected in the time use survey methods. It is the only way to incorporate them in the policy makings.

Diez Garcia Susana (2013) analysed the importance of the incorporation of the social capital in the field of Gross Domestic Product. This article introduced a new term 'social capital' for invisible contribution within the household. This study took the word social capital in the sense of home production and care. This paper observed the relation in the field of political economy and the necessity of the incorporation of social capital. According to this study, the term GDP considered the portion of production that deals with monetary transaction. This article dealt with the historical importance of the

incorporation of social capital in the official statistical system. This paper analysed the importance of time use survey and household budget survey. This study suggested five improvement measures of national account based on time use survey. This article concluded with the importance of measuring social indicator in SNA.

Esquivel Valeria (2013) discussed about the different care agendas. This study pointed out the care economy, care policies and also dealt with the concept of triple 'R' approach in detail and care diamond analysis. This study analysed the time use survey in south and its monitoring procedures.

Lequiller Francois & Blades Derek (2014) analysed the national accounts in detailed manner. The version of system of national accounts till 2008 and what is different or newly introduced in this account is clearly depicted in their work. This study explained the production and detailed analysis of GDP and its measurement .

Hirway Indira (2015) concentrated on unpaid work and its relation with the economy. This paper explained the connection of unpaid work and poverty and also related the economic theories with unpaid work. This study analysed the triple 'R' approach of Diane Elson. The GDP's of different countries can be made comparable only by blending the conventional GDP and the value of unpaid work at least at later stage. This article concluded that without incorporating the unpaid work in the policy making of the economy is partial.

Uppal Anupama (2016) analysed the importance of unpaid or non-market services. This study strongly recommended the calculation of these types of work in the statistical system through social accounting matrix. The information about the non-market services of the household is very relevant because for the purpose of analysing the wellbeing of the people. According to this study, social account matrix already contains 5 elements. In this account a new element was added i.e. gender. It is a method to find out the contribution of non-market services. This paper argued that the national statistical system considered the household enterprises in the accounting of national income. But not included in the real sense. That means in the household enterprises majority of them were unpaid women helpers, their contribution was not counted. This paper recommended that large statistical package was needed to overcome this

problem. This study opined that macro economic variables also affect the household work. In the period of boom household work decreases and in the case of contraction household work increases. This article concluded that one of the main constraints faced when the incorporation of the household work in the statistical system is that it is not possible to compare our national income with the rest of the world.

Bauman Adrian et al. (2019) explained the relation with the time use and the public health. This study gave the detailed meaning and history of time use survey. This paper suggested that the use of time use survey in social inequality, public policy and health related research and also population measurement.

2.5 Research Gap

None of the above studies concentrate the unpaid work valuation on the basis of the nature of the household activity, combination of specialist per minute wage rate and output method. So this study tries to fill this gap. The classification of household activities and identification of unpaid work valuation method of each activity is the important task in the monetary valuation of unpaid work. The next chapter discusses the existing unpaid work valuation methodologies and introduction of new definitions suited for the monetary valuation of household work and care work.

CHAPTER III

METHODOLOGICAL DISCUSSIONS

3.1 Introduction

This chapter discusses the methodological framework of the study. The first part of this chapter explained the history of national income calculation and criticisms. The second part discusses the important unpaid work valuation methods and different attempts for monetary calculation of unpaid work. Third part analysed the methodology used for the present study.

3.2 History of National Income

The history of national income estimation starts with the great economist William Petty. He was the first economist to introduce the national income estimation. He estimated the national income of England in 1665. It is in the double-entry account format. In 1698 Gregory King also adopted the framework of William Petty. He calculated the year-wise value of labour and their wealth in terms of their factors of payment mainly rent, interest, and profit. Petty defined the yearly expenditure of individuals; he included consumption and surplus thereafter. In 1698 Gregory King accepted Petty's method used to assess the welfare of the nation. The king examined this method by using different socio-economic groups.

Waring Marilyn (1999) found that, Adam Smith's 'An Inquiry into the Nature and Causes of the Wealth of Nations' (1776) grouped the labours into two sections, one section is productive and another one is unproductive. This type of labour division was on the basis of labour skill, additional profit, and additional value creation. Productive labourers have skills and they add some additional profit value. But in the case of non-productive labour, the above two things are absent. Low skilled or unskilled labour category and their work cannot be considered as a work. But the work with better skills is productive. All the services are excluded from the production boundary. His arguments are also accepted by Ricardo and J.S Mill.

Marx contributed to the national accounting system in the form of Material products. He considered only material products or material goods and did not consider

services. This system later formed the base of Material Product System (MPS) that is a national accounting system generally used in Eastern Europe and Russia.

The above economists do not support the incorporation of women's invisible work into national income accounting. But the National Bureau of Economic Research (NBER) published a report entitled "Income in the United States: Its Amount and Distribution 1909 - 1919". This report included the income reported as market economic view and also gave the additional position to home produced food and their calculation are considered as big problem.

At the great depression, U.S decided to calculate the national income during the period of 1929, 1930, 1931. For this they decided to expand NBER. This is the prime reason for setting up of a National Income measurement. The real development of United Nations System of National Accounts (UNSNA) started with the contribution of Sir Richard Stone from Britain. He was the representative of the United Nations committee in 1953. Statistical Office of the United Nations published a system of national accounts and supporting tables. It was prepared by a body of specialists appointed by the secretary-general. This committee also has a participant from India. He is Moni Mohan Mukherjee (Waring Marilyn, 1999). India is also a participant in the initial version of the development of United Nations System of National Accounts (UNSNA).

The System of National Accounts (SNA) concepts and rules are internationally agreed measurements like GDP. It is an important yardstick for economic performance. The position of unpaid services is from the outside boundary of SNA. In the production boundary of SNA, the production and services inside the household are excluded. SNA excluded the labour service provided by the individual without cost to non-profit institution. It included the imputed rental of owner-occupied dwellings and the payments made to domestic staff. The exclusion of these services is not a refusal to the welfare aspects but the additions of these things undervalue the primary purpose of SNA. It is created for the economic analysis, policy and decision making (European Commission. et al., 2009). The Subcommittee on Time Use Activity Classification under the Ministry of Statistics and Programme Implementation (MOSPI), Central

Statistical Office, Government of India 2012 classifies the activities into three divisions; they are SNA, Extended SNA, Non- SNA or Personal activities.

- **SNA Activities:**

This section is considered as the economic sectors of the economy generally Primary, Secondary, and Tertiary.

- **Extended SNA**

This section deals with the household maintenance and management, childcare and care of disabled persons, voluntary works related to individual and organizational.

- **Non- SNA or Personal activities**

In this section considered the self development and human capital formation in the sense of education and training, personal health and hygiene, sports, games, exercise etc, socialization, recreation, celebration, participation in religious and spiritual activities, rest, sleep, relaxation and use of media (MOSPI, 2012).

Personal activities are generally considered as Non-SNA only. The SNA Portion is accountable. The Extended SNA and Non-SNA are not accounted in national income accounting.

The following are the different versions of SNA.

3.2.1 1953 SNA

It is the first version of SNA. In this version women work is invisible or unaccounted (Waring Marilyn, 1999). It has no role in the overall world development of national income accounting system. This SNA system concentrates on primary producers. This system shows clear cut division of primary and other production system. Housewives contribution is not considered as primary producers. Even if she is engaged in productive activities like agriculture, she is not classified under productive producers because housewives basic or primary role is doing housework. In the 1953 SNA the definition of primary producers and production boundary is limited (Kulshreshtha A. C.& Singh Gulab, 1996). In the sense of production it includes

subsistence farm production and housing services produced by owner-occupiers. Other services and production in the household like cooking, cleaning, and child care is excluded from the boundary of production (Lequiller Francois & Blades Derek, 2014).

3.2.2 1960 and 1964 SNA

The first revision of 1960 shows the impact of 1953 SNA. The 1964 revision shows the improvement in the International Monetary Fund's Balance of Payments handbook¹.

3.2.3 1968 SNA

It purely deals with the input- output transactions tables. The main limitation of the 1968 SNA is that it only calculates the production of goods made from primary products other categories are excluded. More clearly the processing stage of primary products and household production are excluded. The main reason to exclude the household production is that it doesn't involve any market transaction. Statistical Commission appointed a United Nations Expert Committee chaired by Richard Stone. This committee recommended amending 1968 UNSNA. As per the recommendation of the committee, some activities like carriage of water, weeding, collection of firewood and housework are completely excluded. The housewives contribution is not counted in this version. The main reason to exclude the women's work in national accounting system is due to conceptual problems and practical difficulties to collect the data (Kulshreshtha A. C.& Singh Gulab, 1996). The important contribution of this version was it identified the limitation of constant price calculation (Lequiller Francois & Blades Derek, 2014). At the same time it adds input-output accounts tables and balance sheets and also more care given in the calculation at constant price. 1968 SNA take great effort to combine the SNA and MPS².

¹ <https://unstats.un.org/unsd/nationalaccount/sna.asp> accessed on 19/06/2021

² <https://unstats.un.org/unsd/nationalaccount/sna.asp> accessed on 19/06/2021

3.2.4 1993 SNA

It is the broader national income accounting method of UNSNA. This system is most suitable system to join with other numerical systems. Notable feature of this system is that all nations that followed MPS system till then adopted SNA as per the recommendations of the United Nations Economic and Social Council 27th session. This happened in the 1993 SNA version. Compared to other versions of UNSNA this version is more adjustable to include the household productions which are done by housewives as Extended GDP. For this a satellite account will be constructed and there are three possible methods to set up the satellite account they are the net approach, input approach and output approach (Kulshreshtha A. C.& Singh Gulab, 1996). This recommendation really had not done anything in practical to add household production in SNA (Lequiller Francois & Blades Derek, 2014).

3.2.5 2008 SNA

It is a modified version of 1993 SNA. It explains the development in methodological research, economic environment changes and requirement of the users³. The 1993 SNA was replaced by the 2008 SNA in 2009 (Lequiller Francois & Blades Derek, 2014).

3.3 National Income Measurements in India

The National income of the country is calculated in three different methods: they are Income method, Expenditure method, and Production method. It is from the context of Production, Income generation and Final utilisation. After Independence of the country more concentration was given to the evolution of the official calculation of national income and related components to meet the demands for planning and policy purpose. Understanding the need for providing measures of national income on a yearly basis, the government of India set up an expert committee in 1947 known as 'National income committee' under the chairmanship of Prof. P.C Mahalanobis, with Prof D.R Gadgil and Prof. V.K.R.V. Rao as members. This committee proposed

³ <https://unstats.un.org/unsd/nationalaccount/sna.asp> accessed on 19/06/2021

recommendation regarding the consolidation of estimate of national income. To aid the committee the National Income Unit (NIU) was formed. The estimates and information about the methodology embraced were disclosed in the first and the last reports of the national income committee circulated by the Ministry of Finance in 1951&1954 subsequently. The committee suggested the building up of national income estimates on a yearly basis. By welcoming the suggestions the Government of India shifted the entire Institution of NIU then running for the national income committee to the Ministry of Finance to take the responsibility of the work on a yearly basis. The work of calculation was later moved to Central Statistical Organisation (CSO) and fulltime National Income Division was set up which is now termed as National Accounts Division (NAD). Gross Domestic Product (GDP) is alike whether it is calculated at the point of production, income generation and final utilisation (Central Statistical Office, 2012).

3.4 Major Criticism to National Income Accounting Methods

National income calculation methods especially production and expenditure methods not identifies the clear gender share in national income. Also these approaches not identify the invisible contributions of gender to the GDP (Kulshreshtha A. C.& Singh Gulab, 1996). National income calculation avoids the non-market production of goods and services. Household labour, Environmental degradation are not considered as the part of national income accounting (Korzeniewicz Patricio Roberto et al., 2004).

The little availability of data is one of the important reason to exclude the unpaid work in national income calculation (Gee Fai-kar, 2015). But the detailed usage of time use survey will resolve the issue.

3.5 Time Use Survey

Time spent by different activities is measured using time use survey. In this survey paid and unpaid activities are covered. The survey is an important source of the data of unpaid care activities. The original developers of the time use survey were Russian Zemstvo Researchers before 1900. In 1920 USA conducted a large time use survey as a part of the Domestic Science movement (Bauman Adrian et al., 2019).

India conducted its first time use survey in July 1998-June 1999. One day recall method was used to collect the data for this survey. It covers six states. The population included in this survey was 6 years and above. Sample size was 18591. Three types of days time use data collected and the time intervals allotted was 10 minute (Central Statistical Organisation ,2000). The latest full version of time use survey was conducted in 2019. The survey has been conducted in the period January 2019 to December 2019. It was conducted by National Statistical Office. The survey covered 1, 38, 799 households. Out of this 82897 are from rural and 55902 from urban. The survey collected from 4, 47, 250 persons in the age 6 years and above (rural: 2, 73, 195 and urban: 1, 74, 055) were surveyed of the selected households. Information on time use was collected from each member of age 6 years and above of the selected households. Except the villages in Andaman and Nicobar Islands the time use survey covered the whole of the Indian Union because which are difficult to access (National Statistical Office, 2020). The important report as follows:

Table 3.1

Percentage of persons participating in a day in unpaid domestic service activities

Rural +Urban

Description of unpaid domestic service activities	Male	Female	Person
Food and meals management and preparation	5.6	75.2	39.8
Cleaning and maintaining of own dwelling and Surroundings	7.4	64.8	35.6
Do-it-yourself decoration, maintenance and repair	1.0	0.9	0.9
Care and maintenance of textiles and footwear	2.7	44.0	23.0
Household management for own final use	1.3	2.1	1.7
Pet care	4.5	4.2	4.3
Shopping for own household members	9.5	5.1	7.4
Travelling, moving, transporting or accompanying goods or persons related to unpaid domestic services for household members	3.5	1.7	2.6
Other unpaid domestic services for household members	1.8	4.7	3.2
All unpaid domestic services for household members	26.1	81.2	53.2

Note: The estimates have been calculated considering all the activities in a time slot

Source: Time use in India -2019, National Statistical Office 2020

Table 3.1 shows that in the activities of Do-it-yourself decoration, maintenance and repair, Pet care, Shopping for own household members and Travelling, moving, transporting or accompanying goods or persons related to unpaid domestic services for household members, compared to females, males participation is high. Rest of the unpaid domestic service activities females' participation is higher than males. It shows that in all India level for unpaid domestic activities females' participation is higher than males.

3.6 The Valuation of Household Production

The important valuation methods generally existing in the field of household production is the input and output method. Under the input method, Replacement cost and opportunity cost methods are included. Different economists approached these methods in different manners. The following sections analyse the important valuation methods of household production.

3.6.1 Input method

This method calculates the value of household products based on the inputs like Labour, capital, and intermediate consumption. For simplicity, many studies assumed Labour is the only input and ignored the other inputs. The important studies are Statistics Canada (1995) and Statistics New Zealand (2001) (Gee Fai-kar, 2015).

The value of Labour is calculated based on wages. For the calculation, the time use survey is the first step to find out the hours how much they spend for unpaid work and the wage is accepted as housekeeper wage or specialist wage or an opportunity cost approach (Ironmonger Duncan, 1996). The housekeeper wage and specialist wage are part of the Replacement cost approach.

3.6.2 Replacement Cost Approach

In the replacement cost approach, calculating the value of unpaid work time based on the hourly wages of paid workers (Kulshreshtha A. C.& Singh Gulab, 1999). There are three types of approaches; specialist wages, generalist wages, and replacement cost hybrid approach.

In the case of specialist wage, the wage is based on people with the same occupation (Gee Fai-kar, 2015). In this case, an individual's every unpaid work is considered separately. This method assigns market substitution for different activities of housework separately. The wage for each separate work is taken for calculating the value of household activities (Hawrylyshyn Oli, 1976). This method is used by Hunt . C Janet & Kiker .B.F (1979), Choudary Natasha et al.(2009), Das Pranati & Nayak Purusottam(2022) etc. The drawback of this approach is that it is not taken into the managerial part of the activity and at the same time the household or unpaid worker does heterogeneous work in the same schedule (Bivens E.Gordon & Volker.B Carol, 1986). The calculation of equivalent wages different activities was found to be a difficult task.

The second category of wage is generalist wage, in this case, the wage is equal to the person doing the work in their home is equal to the same services wage in the market (Gee Fai-kar, 2015). This approach is based on the assumption that an alternative worker is a perfect alternative. This method also assumes that a single individual performs the household tasks with a sense of duty and their wage rate is equal to that of the housekeeper doing the same job in the market (Hawrylyshyn Oli, 1976). The important studies used this method are Mitchell .C Wesley et al. (1921), Kuznets Simon et al. (1946), Hamdad Malika (2003), Sharma K.C & Devi Lalita (2014). The important problem of this approach is hard to compute the market value of this work and also attitude or duty of the different households is different (Bivens E.Gordon & Volker. B Carol, 1986). Studies of Statistics Canada (1995) , Povazanova Mariana et al. (2015) , Suh Jooyeoun (2019) , Suh Jooyeoun et al.(2020) , Yadav Sheela & Sharma Nidhi (2021) used both specialist and generalist wage method separately.

The third category is the Replacement cost hybrid approach which treats unpaid work and unpaid care separately. In this wage method, unpaid work and services are separated. In the case of unpaid work, the housekeeper wage is equated. In the case of the value of unpaid care, the value of commercial wage is used (Vaus de David et al., 2003). This wage is the combination of both the specialist and generalist methods.

Statistics Canada supported the generalist approach than the specialist wage method because in the generalist wage method the background of the working condition of the domestic employees and the unpaid workers is the same. In the case of data availability, the input approach is superior to the output approach. The wage rate determination is different; the result is also different (Gee Fai-kar, 2015).

3.6.3 Opportunity cost approach

Opportunity cost approach or Wage Equals Opportunity Cost of Time (WOCT). Becker assumed that in this method a balanced individual allocated their time to do household work, their additional value equals to opportunity cost of market wage (Hawrylyshyn Oli, 1976). The opportunity cost approach is also known as Opportunity cost of time or Potential earnings (Chadeau Ann, 1992). In this approach assessment of wage for unpaid work is based on the opportunity cost. The important assumption of this approach is unpaid work is an obstacle to paid work. In this situation, the cost is equal to the person when he or she worked in the market (Gee Fai-kar, 2015). This approach calculated the amount of money women could earn if they are in labour market instead of doing unpaid work (Kulshreshtha A. C. & Singh Gulab, 1999).

Opportunity cost approach ignores role of the contribution of capital and entrepreneurship in unpaid work (Fitzgerald John & Wicks John, 1990). While calculating unpaid work using opportunity cost; different persons doing same unpaid work will have different values. This means that the value of unpaid work of people varies with their profession (Kulshreshtha A. C. & Singh Gulab, 1999). The important studies used this method are Murphy Martin (1978), Statistics Canada (1995), Miranda Veerle (2011).

3.6.4 Output Approach

The output approach, the value of unpaid work is calculated by deducting the value of commodity inputs used from the value of the output produced in the household. The imputing definition of output approach in household production is equated with the market price of goods and services. By subtracting the value of fixed capital and other taxes from this value the estimate of mixed-income is calculated (Kulshreshtha A. C. & Singh Gulab, 1999).

The value added is a form of output approach to measuring household production. For the calculation, take one of the stages from the production. In this approach, the difference is that it takes the value of intermediaries like fuel and household durables. This study was conducted in the USA by Bivens E.Gordon & Volker. B Carol in 1986. In the case of output; it concentrates both input cost and output price. Input approach majority take the values of Labour cost no values are assigned to the values of other intermediaries (Bivens E.Gordon & Volker. B Carol, 1986)

In the case of the output method, the quantities of output such as food, washing of clothes etc are equated to the market price. The advantage of this method is only a few resources are needed for this approach (Ironmonger Duncan, 1996). This method is in line with the standard national accounting procedure to measure the household output. In this method, the Gross value of output gets the quantity of output multiplied with its equivalent market price then deducted the intermediary consumption. It is difficult to measure the services in the household economy because of the failure to find out the correct match with the services in the market (Gee Fai-kar, 2015).

In the case of output method, it properly assesses the value of the homely produced commodities. It needed detailed data about the nature of the commodity; the expenditure incurred by the unpaid worker for the purchasing of inputs used for the household products and also assesses the number of items produced in the household, etc. The output method is also relevant without the presence of a time use survey (Fender Valerie, 2012). In the case of the output approach operating surplus is not missed, but in the case of the input approach, it is not possible. So the output approach is superior to input. In the case of French economies, the output method of production is calculated with the reference of household output with hotel or Restaurant services (Kulshreshtha A. C. & Singh Gulab, 1999).

Time use surveys are useful for the measurement of Labour services in the household. But in the case of meal preparation or household production, the output approach is more suitable. Another reason is that time is an elastic one and it depends on the attitude of a person, in this case output approach is better. In the case of

household production, certain activities lead to quantification of the commodity. In this case output approach is more suitable. The measurement related to weighable of household production, output approach is better than the input approach. The input approach gives priority to Labour and its evaluation is fully based on wages. The critics of the studies pointed out that these wages are different in different markets. The information is available through the time use survey. The time of the individual is flexible. The flexibility is not a problem in the case of the output approach (Kulshreshtha A. C. & Singh Gulab, 1999). The main difficulty is to calculate the household work time is its multi-tasking aspect. To separate the time for each activity is very difficult; in this case, the output method is superior. This method is also stable with the national account and in the absence of time use diary, output method is the only way (Fender Valerie, 2012). The important studies are calculated by using the output method are Fitzgerald. M John et al.(1996), Fitzgerald John & Wicks John (1990), Fender Valerie (2012).

The limited data availability and the differential quality of the good produced by different households is the limitation of the output method (Gee Fai-kar, 2015). However, the output method has its advantage in solving the problem of joined activities at one time (Ironmonger Duncan, 1996). The issue of the data availability opts for the indirect approach. If the problem of data availability overcomes, the best method to find the value of household production is output method. In the case of household production the household is considered as a firm, playing the role of producer, investor as well as a consumer (Landefeld Steven. J & Mcculla H. Stephanie, 2000).

In the common economic scenario, goods are material object and services are not. In the case of goods in exchange, they are ready to exchange between the economic units. In the case of services, it is a material or immaterial object. Its exchange is realized or understood by the consumer or economic unit then it becomes a service (Hill T.P, 1979). The identification of goods and services is also needed in the case of household production. In the household production unit household produced goods and services, goods are termed as in the form of foods and services are mainly termed in the form of washing, clothing, caring, etc. The output method is very suitable

for the first category of household products. In this research, the output approach is used only for the cooking part.

3.6.5 Care Work Valuation

Informal care is also a part of unpaid work. The informal care also includes the parts of housework like cooking, washing, cleaning, and administrative tasks of the household etc. The important methods to count the informal care are the Revealed preference method and the Stated preference method. The Revealed preference method is broadly divided into the Opportunity cost method and Proxy good method. In the case of the Opportunity cost method, the informal care is measured by the persons devoted to the hours of informal care multiplied by market wage to do the same task. The wage is preferably in the form of wages of a person who spends one hour in the Labour market. This wage is also called Reservation Wage. In this method, the cost side is calculated by using cost-benefit analysis, cost-utility analysis, and cost effective analysis. One of the main drawbacks of the opportunity cost method is that the same task done by the different professionals or workers has different values.

Proxy good is another method to evaluate informal care. This method assumed that the household tasks have a close substitute in the market. The valuation is based on the wage of the close substitute. In this method also the cost side is calculated by using cost-benefit analysis, cost-utility analysis, and cost effective analysis.

The second category is the stated preference method. Under this category there are two existing methods. There are contingent valuation methods (CVM) and conjoint analysis (CA). In the case of contingent valuation method (CVM) valuation of informal care is based on how much money is essential for the attainment of the care from the informal care provider. The second method of conjoint analysis (CA) valuation is based on the ranking or ordering of the respondent's preference. Double counting is the main drawback of the two methods.

Other than the above Revealed preference and Stated preference methods, additional methods are subjective and objective methods. In the case of objective method, the information is collected by using a survey like time use survey. In the case

of the subjective method, it analyses the negative result of doing informal care like stress and pain. Caregiver Strain Index (CSI) is an example of this category. The subjective approach has no theoretical background so it faces the problem of conceptual clarity. However subjective measurement faces fewer problems than objective measurement (Berg den van Bernard et al., 2004) .

In this research , care work is calculated by using the specialist per minute wage approach.

3.7 Introduction of New Methodology for Incorporating Female Unaccounted Economic Contribution to National Income

This section describes the integration of unpaid work into national income in two methods. One method is used as the part of the input approach, that is the specialist per minute wage approach and the other one is the output approach. The two methods and their survey methods are as follows:

3.7.1 Method I: Specialist Per Minute Wage Approach

This method is the part of input approach. In this study, Specialist wage approach is adopted and the wage rate is taken from the domestic labour sector determined by Kerala government in 2016. And this wage rate is in turn converted into minutes for the calculation of unpaid work in this study. So in this study this approach is termed as ‘specialist per minute wage approach’. The reason behind the per-minute wage rate is to avoid overestimation. The difference in the commonly used specialist wage method and this method is that in this study uses specialist per minute wage rate, instead of specialist one hour wage approach. By using specialist per minute wage approach the household work and care work is calculated. This study selected six activities for calculation from the field of household maintenance and management and two activities were selected from the field of care works category. Monetary value of these activities are calculated in this study. The activity classification is shown in the following tables 3.2 & 3.3.

Table 3.2

The activities under household maintenance, management and shopping for own household

Sl. No.	Type of Works
1	Cooking
2	Washing
3	Cleaning utensils
4	Cleaning inside and surroundings of home
5	Shopping for food and household item
6	Cutting vegetables, meat, fish

Source: Report of the Time Use Survey, Central Statistical Organisation 2000

Table 3.3

The activities under Care for children, the sick, elderly and disabled for own household

Sl.No.	Care Work
1	Physical care of children and accompanying them to school and other places
2	Physical care of sick, disabled persons

Source: Report of the Time Use Survey, Central Statistical Organisation 2000

This study used the following methods to calculate unaccounted economic contribution;

- Per day unaccounted economic contribution by household work = Average amount of time for household work × Specialist Per minute Wage rate.
- Per day unaccounted economic contribution by Care work = Average amount of time for care work × Specialist Per minute Wage rate.
- Monthly unaccounted economic contribution by Household work = (Normal day unaccounted economic contribution by household work × Number of normal days in that month + Holiday unaccounted economic contribution by Household work × Number of holidays in that month)
- Monthly unaccounted economic contribution by care work = (Normal day unaccounted economic contribution by care work × Number of normal days in that month + Holiday unaccounted economic contribution by care work × Number of holidays in that month)

- Total household and care work contribution of females on Normal days = (Per day unaccounted economic contribution of an average female for household work on normal days × Number of female respondents who do household work + Per day unaccounted economic contribution of an average female for physical care of children on normal days × Number of female respondents who do physical care of children + Per day unaccounted economic contribution of an average female for Physical care of sick, disabled persons on normal days × Number of female respondents who do physical care of sick, disabled persons) × Number of Normal Days + (Per day unaccounted economic contribution of an average female for cooking on normal days × Number of female respondents who do cooking × Number of Normal Days).
- Total household and care work contribution of males on Normal days = (Per day unaccounted economic contribution of an average male for household work on normal days × Number of male respondents who do household work + Per day unaccounted economic contribution of an average male for physical care of children on normal days × Number of male respondents who do physical care of children + Per day unaccounted economic contribution of an average male for physical care of sick, disabled persons on normal days × Number of male respondents who do physical care of sick, disabled persons) × Number of Normal Days + (Per day unaccounted economic contribution of an average male for cooking on normal days × Number of male respondents who do cooking × Number of Normal Days).
- Total household and care work contribution of females on holidays = (Per day unaccounted economic contribution of an average female for household work on holidays × Number of female respondents who do household work + Per day unaccounted economic contribution of an average female for physical care of children on holidays × Number of female respondents who do physical care of children + Per day unaccounted economic contribution of an average female for physical care of sick, disabled persons on holidays × Number of female respondents who do physical care of sick, disabled persons) × Number of Holidays + (Per day unaccounted economic contribution of an average female for cooking

on holidays \times Number of female respondents who do cooking \times Number of holidays).

- Total household and care work contribution of males on holidays = (Per day unaccounted economic contribution of an average male for household work on holidays \times Number of male respondents who do household work + Per day unaccounted economic contribution of an average male for physical care of children on holidays \times Number of male respondents who do physical care of children + Per day unaccounted economic contribution of an average male for physical care of sick, disabled persons on holidays \times Number of male respondents who do physical care of sick, disabled persons) \times Number of Holidays + (Per day unaccounted economic contribution of an average male for cooking on holidays \times Number of male respondents who do cooking \times Number of holidays).
- Total Unpaid work contribution to National income = (Total household and care work contribution of females on Normal days + Total household and care work contribution of males on Normal days + Total household and care work contribution of females on holidays + Total household and care work contribution of males on holidays)

3.7.2 Data for Method I

Time use survey is used to collect the required information for this method. The 116 activity codes are selected from the pilot time use survey of India conducted from July 1998 to June 1999. For the collection of time use survey, the 24 hours is converted into 1440 minutes. These 1440 minutes were converted into 288 columns, each of 5 minute slots. The 116 activity codes and the time use survey data sheets with questionnaire were also given to the respondents. The respondents were also trained to fill the time use survey data sheet without any confusion. To avoid errors in time use survey data sheet, time use diaries were collected from the respondents . On this basis, their average time devoted for each activity is calculated and it is multiplied with the specialist per-minute wage rate. This specialist per minute wage rate is calculated from the domestic labour sector determined by Kerala government in 2016.

3.7.3 Method II: Combination of Specialist Per Minute Wage Approach and Output Approach

In this method, the cooking part is calculated by using the output method, other household and care activities are calculated by Method I (specialist per minute wage approach). The definition of output method was developed in this study. The cost of the ingredients, fuel (gas and wood) expenditure is taken. If the wood or ingredients are freely available from their own land and other free sources, this value is not taken. If it is involved in the consumption expenditure of the household, the value is taken, and natural resource like water value is not taken because it is a free good. The cost of capital is not considered, because it creates depreciation cost and its validity time is not predicted by the respondents, which creates lots of errors. Capital payment is already made in the market. So it is avoided in this calculation (The example in the case of capital in the sense that Utensils, Machines).

The following are the steps to find out the value of household production in the form of cooking by using output method.

Step 1: In the first step assess the cost part, for this per day cost of each ingredients and fuel (gas +wood) used for food production is calculated separately and will get total cost after adding each other. The following are the definition used in the study to find out the value of ingredient and fuel cost

- Cost of ingredient used in the household food production on a normal day =
Quantity of ingredient used for the preparation of food item on a normal day ÷
Total quantity of ingredient consumed in a month for the preparation of food item × Monthly price of the ingredient.
- Cost of ingredient used in the household food production on a holiday =
Quantity of ingredient used for the preparation of food item on a holiday ÷ Total
quantity of ingredient consumed in a month for the preparation of food item ×
Monthly price of the ingredient.

An example to find an ingredient cost of dhal on a normal day is, an average family consumes 1000 gram dhal in a month purchased at the market price of 60 rupees, on a normal day they consume 100-gram dhal so the cost of dhal on a normal day is =

$$\frac{100}{1000} \times 60 = 6 \text{ Rupees.}$$

- Cost of Fuel = Per day Gas cost + Per day Wood cost
 Per day Gas cost = Gas price ÷ Number of Days
 Per day wood cost = Wood price ÷ Number of Days

Step 2: Equate the Household Food Items with Market Food Price

Step 3: Apply the values in the following equation, and then the household production using output method is calculated.

The study developed definitions for the Output method are follows:

- Average value of output from cooking per household on a normal day = Market price of food items cooked in the household on a normal day × Number of household cooked food items consumed by the household on a normal day – Ingredients cost on a normal day – Per day fuel cost
- Average value of output from cooking per household on a holiday = Market Price of food items cooked in the household on a holiday × Number of household cooked food items consumed by the household on a holiday – Ingredients cost on a holiday – Per day fuel cost

The general formula developed by this study for this to consolidate the unpaid work part to National income (Female unaccounted economic contribution to national income) is following:

- Unpaid work and Care work value on normal days = Unaccounted economic contribution calculated on the basis of specialist per minute wage approach on normal days – the unaccounted economic contribution of cooking on normal days + Average value of output from cooking per household on a normal day × number of households × number of normal days.
- Unpaid work and Care work value on holidays = Unaccounted Economic contribution calculated on the basis of specialist per minute wage approach on holidays – the unaccounted economic contribution of cooking on holidays +

Average value of output from cooking per household on a holiday × number of households × number of holidays

3.7.4 Data for Method II

For this method, the consumption expenditure for food items is collected from the 149 families in January 2019. Monthly expenditure of households for each food ingredients, quantity of ingredients they used for the preparation of food on a normal day and holiday were also given by the respondents. For equating the household food items with market food price, the price of food items of different qualities was also collected from the market.

3.8 Conclusion

This chapter tries to analyse the existing methods of monetary valuation of unpaid work and analyse the new methodology for unpaid work valuation. The best methods to integrate the female contribution in the form of unpaid work into national income accounting are specialist per minute wage approach and the combination of specialist per minute wage approach and output approach. These two methods avoid the problems of double counting and over estimation. For any study understanding of the sample population is a must. Hence the next chapter discusses the profile of the sample area and the socio-economic status of the sample respondents.

CHAPTER: IV
ANALYSIS OF THE SOCIO-ECONOMIC CONDITION OF HOUSEHOLDS IN
CHALAKUDY MUNICIPALITY

4.1 The Historical Background of Chalakudy

Chalakudy claims to possess its ancient period just like any other village. The ancient cultures are often connected with the rivers. The cultural growth of Chalakudy is connected with the Chalakudy River. Chalakudy has played a significant role in the transformation and rapid growth in Kerala history.

There are different opinions on how Chalakudy got its present name. In the book, 'Jyothisha Samhitha', which is believed to be around 500 years old, Chalakudy means "Shala Dwajam" 'Dwajam' is the pillar on to which the cows in the immolation centre are tied. Eventually 'Shala' become 'Chala' 'Kodi' changed into 'kudi'. The river that flowed through the immolation centre was referred to as 'Shaliyar' and it later become 'Chaliyar' followed by the name chalakudy.

It is said in the commencement of Kerala that chalakudy was considered as a sacred among the 64 villages created by Parasurama, place for conducting the immolations. During the Sangha period (A.D 500) till AD 16th, 17th century, chalakudy was known by the name 'Kodassery Nadu' as a part of the Adavur village (Chalakudy Municipality, 2015)

Chalakudy municipality came into existence in April 1st 1970. The total population of Chalakudy is 49525 (2011 census)¹. Male population is 23744 and female is 25781.

4.2 Introduction to Socio- Economic Status

Socio-economic status is an assessment of the comprehensive prosperity of human beings in the society. It is an important component that analyses the overall position of men and women in a particular society. It reflects the overall improvement

¹ https://censusindia.gov.in/nada/index.php/catalog/666/download/2312/DH_2011_3207_PART_A_DCHB_THRI
accessed on 23/06/2021

of a nation. Patriarchal nature of the society especially in the case of India has a different socio-economic structure. Among the south Asian nation, Kerala is acclaimed to gain high level of social development. Though the economic progress is not experienced, it adorns lofty levels in social welfare (Panda Kumar Pradeep, 1999) . Bifurcation of the work between men and women in this society is one of the main reasons to give a distinguished socio-economic character between genders. In the case of male, he has only one choice about employment that is market work. In the case of female, she has two choices one is market work and the other is household work. In the case of women, if she chooses market work, it doesn't exempt her from doing household work and this is not same in the case of males. Probably household work is an influencing factor in the females to choose the market work. Magnitude of the unpaid work of household work is determined by related factors or the socio-economic status of other members in the family, educational and occupational earning of their male counterparts and number of children and physically and mentally disabled members of their family. The unpaid work is a factor which influences a woman's life. It affects her life from the childhood to the old age. This chapter deals with the socio - economic conditions of the sample respondents.

4.3 Age-Sex Distribution of the Sample Respondents

This section discusses about the age wise sex distribution of the sample respondents. This study mainly collected data from working age population; 15 to 59 age category. It is seen that 37.83 percentage of our sample population belongs to the age group of 15 to 30 and the rest 62.17 percentage is in the age category of 30-59. This age structure is somewhat similar to the Kerala population census 2011(15-30 age category 36.91 percentage and 30-59 age category, 63.08 percentages.)

Table 4.1

Age-Sex Distribution of the Sample Respondents in Percentage

Age	Sex		Total
	Male	Female	
30 years below	43	33.04	37.83
30 years & above	57	66.96	62.17
Total	100	100	100

Source: Primary Data

Among male, 43 percentages of sample respondents came from 15-30 age category whereas in the case of female it is 33.04 percentages. It is seen that 57 percentage of male and 66.96 percentage of female belongs to the age category of 30-59.

4.4 Religion-Sex Distribution of the Sample Respondents

Religion is another important variable in the socio-economic analysis. The present study collected data from all the three religious groups in somewhat same number of cases. It is seen from Table 4.2 that 35.41 percentages of sample respondents belongs to Muslim community, Hindu and Christian constitute 33.73 and 30.38 respectively.

Table 4.2

Religion-Sex Distribution of the Sample Respondents in Percentage

Religion	Sex		Total
	Male	Female	
Christian	30	30.75	30.38
Hindu	34	33.48	33.73
Muslim	35.5	35.32	35.41
No	0.5	0.45	0.48
Total	100	100	100

Source: Primary Data

4.5 Marital Status-Sex Distribution of the Sample Respondents

Marriage is an important demographic factor that determines the socio-economic status of population especially in the case of women. Division of labour in the case of women is determined by after childhood and after marriage (Mallika M.G, 2010). It is argued that marital status is one of the important determining factors which decide the labour force participation rate and work participation rate of female.

Table 4.3 depicts the marital status of men and women. It is given that 66.75 percentages of our sample respondents belongs to married category. Among male this is 59.5 percentages and among female this is 73.41 percentages respectively. It is seen that out of total sample respondents only 30.14 percentages belongs to unmarried

category. In which 40.5 percentages of male members and 20.64 per cent of female members are unmarried. Among female 5.95 per cent of persons reported that they are either widowed or separated. But among male this is zero percentage. In all Kerala level widow female population is 11.56 percentages and in the case of male it is 3.5 of their respective total population (State Planning Board, 2022). There are no male person in widows and divorced category. It may be due to the fact that remarriage may be easier for male than female due to some cultural factors or due to some domestic responsibilities related to the nurturing of the children.

Table 4.3

Marital Status-Sex Distribution of the Sample Respondents in Percentage

Marital Status	Sex		Total
	Male	Female	
Unmarried	40.5	20.64	30.14
Currently Married	59.5	73.41	66.75
Widowed	0	4.12	2.15
Divorce/Separated	0	1.83	0.96
Total	100	100	100

Source: Primary Data

4.6 Activity Status of the Sample Respondents

An economic activity is any activity that adds the value to the national product through production of goods and services (NSSO, 2001). The activity status is the crucial component in explaining the economic status of sample respondents. A person's financial stability is based on his or her economic activity or occupation. It is an important indicator to determine the standard of living of an individual.

Table no: 4.4 shows the activity status of the sample respondents. This activity status classification is done on the basis of National Sample Survey 61st Round (July 2004-June 2005) Report No. 515(61/10/1): Employment and Unemployment Situation in India, 2004-05. On the basis of this report the activities are classified into five sections. It is seen from table 4.4 that among 83.48 per cent of female are out of labour force. That means only 16.52 per cent of females are in labour force whereas in the case of male this is 69.5.

In the traditional methods of data collection it is evident that majority of females are out of labour force. As it is already mentioned that participation in labour market is one of the important element in empowering women, the reasons of non-participation should be known. Our study tries to trace out the reasons behind the lower participation of women in labour force. The exact role of female in household production will provide some insights in this regard.

While analysing the type of works, it is seen that 44.07 per cent of the working female are either in regular salaried job or in self-employed. In the case of casual labour their participation is negligible (11.85%). But in the case of male, regular salaried percentage is only 19.54.

Table 4.4

Activity Status of the Sample Respondents in Percentage

Activity Status	Sex		Total
	Male	Female	
Self- employed	40	6.88	22.72
Regular wage /salaried employee	13	6.88	9.81
Casual labour	13.5	1.85	7.41
Not working but seeking or available for work (or unemployed)	3	0.91	1.91
Neither working nor available for work (or not in labour force)	30.5	83.48	58.15
Total	100	100	100

Source: Primary Data

Table: 4.5

Share of each activity Status of the sample respondents in the total work participation rate (in percentage)

Type of Employment	Sex	
	Male	Female
Self -employed	60.15	44.07
Regular wage /salaried employee	19.54	44.07
Casual labour	20.30	11.85
Total	100	100

Source: Primary Data

Major portion of the male population are self- employed workers. In all India and all Kerala level the self -employed workers are the major workforce (State Planning Board, 2022). Like in this data, self- employed workers are the highest share in the employment status. The important reason is that, in this study highest sample is coming from Muslim community. In Muslim community in Kerala, self-employed workers are highest. In the case of regular salaried workers, females are higher than males. The education status may provide some explanation to the employment structure. In the next session it is needed to analyse the relationship between education status and activity status.

4.7 Education and Economic Activity

To reduce socio-economic disparity and to meet the goal of inclusive growth, high education is important (Sangar Sunita, 2014). In Kerala, literacy is 92 percentages but the labour force and work participation rate is lesser than all India level (State Planning Board, 2022). In the case of females, other than education, many factors determine the labour force participation rate. In brief, the living condition and surrounding situation of women also play a relevant role in determining work participation rate of female than male. This section analyse the relationship of education and activity status of the sample respondents.

Table 4.6

Gender difference in Education (in percentage)

Education category	Male	Female
Illiterate	0.0	0.5
Less educated	4.5	5.5
Middle educated	72.4	54.8
Higher educated	23.1	39.2

Source: Primary Data

It is seen from table 4.6 that 39.2 per cent of females are highly educated (graduation and above) whereas male that per cent is only 23.1. Moreover, 94 percent of female and 95 percentage of male are having an education qualification above secondary level. As it is seen from table number 4.4 that only 15.61 per cent of female are working whereas male that percent is 66.5. Most interestingly, roughly 40 percentage of female are

graduation and above qualification, but their participation in labour market is negligible. This is a serious issue as far as Kerala is concerned.

Table 4.7

Educational status and Activity status of Females (per cent)

Activity status	LP&UP	Secondary & higher secondary	Graduation above
Self- employed	0.0	73.3	26.7
Regular salaried	0.0	20.0	80.0
Casual labour	25	50.0	25.0
Student	0.0	36.1	63.9
Housewife	8.3	62.1	29.7
Others	0.0	0.0	100.0

Source: Primary Data

From table 4.7 it is seen that 80 per cent of regular salaried females are highly educated whereas it was only 29.7 per cent in the case of housewife category. In the case of self-employed females, 73.3 per cent is having an education qualification of higher secondary and secondary level. In casual labour category 50 percentage is having middle level of educational qualification. This shows that those who are doing regular salaried work is from highly educated persons. The housewife category, majority are having a qualification of secondary and higher secondary. This may be due to the fact that those highly educated may have higher salary to compensate the domestic work they are performing and those women who are doing household work may not be able to find a job which will be sufficient enough to compensate the household responsibilities which are assigned to the women. This argument can be proved only with time utilisation data. In the next chapter we are collecting the time utilisation data from both genders. Before discussing about time use data it is interesting to find the activity status and education status of male members from our sample.

Table.4.8*Relationship between activity status and education (Male) in percentage*

Activity status	LP&UP	Secondary & higher secondary	Graduation above
Self-employed	8.8	85.0	6.3
Regular salaried	0.0	50.0	50.0
Casual labour	3.7	81.5	14.8
Student	0.0	64.4	35.6
Others	14.3	42.9	42.9

Source: Primary Data

As it is already seen that 66.5 percentage of male members are working, table (4.4) shows that no one is reported that they are doing only household work. It is evident that among male also, 50 percentages of regular salaried persons are having higher education qualification while that of self-employed and casual labour category higher educated category is very low (table 4.8).

Government adopted lots of initiatives to improve the work participation rate of women. The success of these initiatives is fulfilled only if they are able to participate more time. For this, a detailed study of the time utilisation pattern of the sample respondents is very relevant.

4.8 Means of Annual income, their own income, Expenditure and Savings.

The economic independency of an individual, particularly in the case of women depends on their nature of asset ownership, Annual income of their family, especially their own income and their savings and expenditure. The table 4.9 explains the economic life of the sample respondents. Four variables are used to explain the income aspect. They are annual income, expenditure and saving, their own income.

Table 4.9 shows the gender difference in average annual income, expenditure, savings and their own income. In the case of annual income there is a wide gender disparity. Mean annual income of an average male is rupees 247155 whereas a females it is rupees 111970. This annual income is the contribution of the entire family members. Women from Low income family are forced to participate in the labour market especially in the manual jobs. Women from high income family participate in

the professional or white collar jobs. There is a “U” shaped relationship between low household income and women employment status (Panda Kumar Pradeep, 1999). In the case of own income, a wide disparity is seen in between male and female. Average own income of the male is given as rupees 242150.46 whereas it is only rupees 25081.65 for women. This may be the result of lower work participation of female, which is already discussed in the above analysis. Mean expenditure of male is rupees 90904.56 in the case of females it is rupees 30386.24. Average saving of a male is rupees 29239.97 whereas it is only rupees 14403.58 for female. The income status of male is far ahead while comparing female and this is mainly due to the lower economic participation of women, though they are highly educated. Economic empowerment of women can be achieved only through increasing the work participation rate, but that is possible only when the household work burden of women is calculated and incorporated in SNA. The following chapters will deal with this issue.

Table 4.9

Gender difference in average annual income, their own income, expenditure and savings (in rupees)

Sex	Annual income	Their own income	Expenditure	Savings
Male	247155	242150.46	90904.56	29239.97
Female	111970	25081.65	30386.24	14403.58

Source: Primary Data

4.9 Conclusion

This chapter analyse the socio-economic condition of the samples collected from Chalakudy municipality. It is seen that work participation rate of female is only 15.61 per cent while that of male is 66.5. While analysing education, it is evident that the percentage of highly educated persons is higher among female. Those who are working, the type of education revealed that majority of regular salaried females are highly educated. It is a fact that more than 94 percent of female and 95 percentage of male members are having an education qualification of secondary and above. When analysing the income status, it is seen that average level of income earned and spend by female is very low compared to male. This is due to the fact that majority female are not economically employed or their work may not be counted as income generating or

economic work. Hence if it is needed to increase the standard of living of female it is must to find out the time utilisation pattern and evaluate the actual value of production which is happening in household. It is argued that due to the domestic work burden, female are not able to enter in market work and male are not engaged with household work. This argument can be proved only with the analysis of time use data. Next chapter analyses the gender difference in time utilisation of the sample respondents.

CHAPTER V

ANALYSIS OF GENDER DIFFERENCE IN TIME UTILISATION PATTERN

5.1 Introduction

The intensity of work not only depends upon the type of work but it also depends on how much time they utilise for each work. General belief is that the SNA or Economic activities are more strenuous than housework. These Economic activities only counted in national income by using traditional methods. Household work totally ignored in the traditional account. Therefore, the analysis of time utilisation pattern of the sample respondents is very essential. This will help to understand how much time they spend on each activity under the category of SNA, Extended SNA and Non-SNA. Time use survey will provide the gender difference in time use pattern. The time use survey collects the composite nature of unpaid work through the various activities like SNA, Extended SNA, Non-SNA and personal negligible services. This survey gives the synopsis of the individual report in 24 hours (Hirway Indira & Jose Sunny, 2011). Time use survey serves as an appropriate method to solve the issues related to unpaid work and its demographic obscurity (N. Neetha, 2010). To remove the economic invisibility of unpaid work this chapter mainly concentrates on the time divisions in the life of both genders. For this, detailed time use survey collected from 418 respondents in the age group of 15-59. The detailed procedure of time use survey is in the third chapter. This chapter concentrates on the time utilisation pattern of the sample respondents and clarifies the gender difference in time utilisation and it introduces the concept of 'total working time'. The concept of total working time means the summation of SNA and Extended SNA (SNA+ Extended SNA). This will determine the magnitude of who spent more time or utilised more time to work. The real work is not only confined to SNA activities but also it connected to Extended SNA activities. This chapter is also a pre-step of integration of the Extended SNA into the national income portion or an analysis of the time utilisation of the sample respondents into SNA, Extended SNA and Non-SNA category.

5.2 Analysis of the Time Utilisation Pattern and its Gender Difference

A normal day is a day when the persons who are working will go for market work and students who are studying will go to education institutions. In addition, a holiday is a day when normally all will be at home. That means the absence of market work. This kind of classification will help us to get a proper calculation of time used by male and female in a week. Second Saturday and Sunday and other holidays usually received are included in the calculation of holidays and all the other days are normal days. This classification is important because of the whole purpose of this research is to calculate the value of household products which are not included in the System of National Accounts. This is because the study based on the assumption that household production will vary according to the number of persons present at home.

Generally, a person's time falls into three categories: SNA, Extended SNA and Non -SNA. SNA and Extended SNA, Non- SNA time of a person depends on his or her personal, surrounding situations and choice. A person is having 24 hours (1440 minutes) for SNA, Extended SNA and Non-SNA activities. It also checks out the normal day and holiday time spending pattern of sample respondents to these three categories and analyses their gender difference. The time utilisation for the categories like SNA, Extended SNA and Non -SNA of the sample respondents are shown in the following tables below.

Table 5.1

Gender difference in time utilisation pattern on normal days (in minutes)

Activities	Male	Female
SNA	345	100
Extended SNA	40	390
Non- SNA	1055	950
Total	1440	1440

Source: Primary Data

Table 5.1 shows the gender difference in time utilisation on SNA, Extended SNA and Non- SNA by an average person. On an average, a male spend 5 hours and 45 minutes for SNA activities in a normal day while that of a female is only 1 hour and 40 minutes. This shows that male spend 3.45 times more time for market work than

female. This is natural that 66.5 per cent of male reported to be in market work, while that of female is only 15.61. But when comparing the gender difference in work participation rate, male percentage is 4.26 times that of female, the time spend on market work by male is only 3.45 times than that of female. This may be because those female members who are working may spend more time than male members. That is not the intention of this study. The most important thing is that when it comes to the case of Extended SNA males spend only 40 minutes while that of females it is 6 hours and 30 minutes. When males spend 4 hours and 5 minutes more than females in SNA activities, females utilise 5 hours and 50 minutes more than males in Extended SNA. While integrating the SNA and Extended SNA together, it seen that an average work time of a male is only 6 hours and 25 minutes. Whereas in the case of female is 8 hours and 10 minutes. However, market work of female is very low, the total work time of female exceeds that of an average male. The only difference is that SNA takes place in the market whereas Extended SNA happens in the household. This analysis clearly indicates the domestic work burden of women when compared to male. This is having greater policy level implications.

When it comes to the case of Non-SNA the time spent by males exceeds females. Females spend 15 hours and 50 minutes and males spend 17 hours and 35 minutes. Time used by females for Non- SNA or Personal activities is 1 hour and 45 minutes less when compared to males. If it is given value to leisure, an average male enjoys more leisure time than female, while that of income earning work, male earns more than women do. However, when compared to the actual work of women for the increase in family welfare, it is far above the contribution of an average male member. All these factors clearly shows the importance of the calculation of the value of household production that will show the actual economic contribution of women. It is evident from the analysis that females spend more time than male for work than an average male member does. This may be the main reason behind the low participation of females in SNA and Non- SNA activities when compared to men. This negatively affects the income earning capacity and the leisure time of women.

Table 5.2*Gender difference in time utilisation pattern on holidays (in minutes)*

Activities	Male	Female
SNA	50	30
Extended SNA	60	400
Non -SNA	1330	1010
Total	1440	1440

Source: Primary Data

Table 5.2 shows that SNA, Extended SNA and Non- SNA Time utilisation pattern of sample respondents on holidays. Apart from normal days, on holidays, the participation of male and female is lesser when it comes to SNA. That is during normal days, males spend 5 hours and 45 minutes and when it comes to holidays, it is only 50 minutes. The SNA participation during normal days by an average female is 1 hour and 40 minutes while that is only 30 minutes on holidays. This may be because a holiday is a day when market work is absent. In the case of Extended SNA, males give 1 hour whereas in the case of females they devote 6 hours and 40 minutes. On holidays, males spend 20 minutes and female allocates 10 minutes more than on normal days for Extended SNA. In the case of Non-SNA, average males spend 22 hours and 10 minutes while that of a female is 16 hours and 50 minutes. From this analysis, it is evident that holidays are holidays only for male, not for female. They are working on normal days and holidays than their male counterparts. This fact should be taken into consideration while taking gender policies.

5.2.1 Gender Difference in Time Utilisation in the Structure of SNA Activities on Normal Days and Holidays

SNA activities or economic activities are the determinant of the labour force participation. In economic sense, Labour force participation is the percentage of population active in economic sense (Naidu.C Sirisha, 2016). In general it is the legally accepted market economic activities that passed the four stages of economic procedures; production, consumption, distribution and exchange. This section discusses the mean time duration of each general type of SNA activities like Primary, Secondary, Trade and business and service sector. The following two tables shows the time

difference in the SNA activities of the sample respondents on normal days and holidays. This data is taken from those persons whose activity status is given as employed.

Table 5.3

Gender difference in time utilised for different SNA activities among working age population on normal days (in minutes)

Activities	Male	Female
Primary	25	25
Secondary	75	15
Trade and Business	55	10
Services	190	50
SNA(Total)	345	100

Source: Primary Data

SNA activities are divided into four divisions; primary, secondary, trade and business and service sector. Table 5.3 depicts the gender difference in the four divisions of SNA on normal days. For primary activity, males and females spend 25 minutes. Here the equality arises because both male and female are involved in agricultural activities, kitchen gardening etc. In secondary sector when males spend 1 hour and 15 minutes the females spend 15 minutes. In trade and business, males take up 55 minutes whereas females take up 10 minutes. In the case of service sector males utilise 3 hours 10 minutes whereas females spend 50 minutes. This shows the dominance of service sector in SNA activities by both genders. From this, it is evident that 25 percent of work time an average female is used for agricultural activity, while that of a male is only 7.24 per cent. An average working male spend 21.73 per cent of the time in secondary activities, while that of a female is only 15 per cent. In trade and business an average working male spend 15.94 percentage of time while that of female spend 10 percentage of time. Both male and female spend majority of their working time in service sector. An average male spend 55 percentage of their working time in service sector while that of a female it is 50 percent. This clearly indicates the structure of SNA activities and its gender difference.

Table 5.4

Gender difference in time utilised for different SNA activities among working age population on holidays (in minutes)

Activities	Male	Female
Primary	25	15
Secondary	5	5
Trade and Business	0	0
Services	20	10
SNA(Total)	50	30

Source: Primary Data

It is evident that the time spends on market work reduced to 14.49 percent on holidays for men when compared to normal days, that percentage is 30 in the case of women. This is because agriculture and service sector, holidays also having works. This is prominent in the case of women than men. Table 5.4 shows that the time utilised by males and females for SNA activities on holidays is 50 minutes and 30 minutes respectively. For primary activities males spend 25 minutes whereas females take 15 minutes. The people in the primary activity utilise time for the activities like kitchen gardening, Banana cultivation and other agricultural related works. In the secondary activities, males and females spend 5 minutes each. Male and female participation does not come in trade and business. When it comes to the service sector, males takes 20 minutes whereas an average women utilise 10 minutes.

5.2.2 Gender Difference in Time Utilisation for Extended SNA Activities

Extended SNA activity is another type of activity like SNA but difference is that it happens in household and it is unpaid in nature and not counted and calculated in national income accounting. Women mainly do this type of work. This section analyses the gender difference in utilisation of time on Extended SNA activities under three categories: Household maintenance, management shopping for own household, Care for children, the sick, elderly and disabled for own household, Community services and help to other households.

Table 5.5*Gender difference in time used for Extended SNA activities in minutes on normal days*

Activities	Male	Female
Household maintenance, management and shopping for own household	30	315
Care for children, the sick, elderly and disabled for own household	10	75
Community services and help to other household	0	0
Extended SNA (Total)	40	390

Source: Primary Data

Table 5.5 shows that, for household maintenance and management, shopping for own household, males spend 30 minutes whereas females spend 5 hours 15 minutes. Here the time taken by females exceeds by 4 hours 45 minutes than the time taken by males in the household maintenance, management and shopping for own household. In the case of care for children, the sick, elderly and disabled for own household males utilise 10 minutes whereas females spend 1 hour 15 minutes. When it comes to community services and help to other household, the participation of males and females are absent.

Table 5.6*Gender difference in time used for Extended SNA activities in minutes on holidays*

Activities	Male	Female
Household maintenance, management and shopping for own household	45	305
Care for children, the sick, elderly and disabled for own household	15	70
Community services and help to other household	0	25
Extended SNA (Total)	60	400

Source: Primary Data

Table 5.6 shows that during holidays, on an average a male spend 45 minutes in household maintenance, management and shopping for own household activities whereas female spend 5 hours and 5 minutes. Here the time utilised by average females is 6.6 times higher than an average male. When it comes to the care for children, the

sick, elderly and disabled for own household, an average male utilises only 15 minutes, whereas females spend 1 hour 10 minutes. In community services and help to other household, the participation of males is nil whereas an average female spends 25 minutes. This may be due to the participation of female in Kudumbasree /Ayalkoottam etc.

When there is a small increase in participation of males in Extended SNA, then there is a small dip in the participation of females. This indicates that the lesser participation of men in Extended SNA becomes the reason for the higher participation of women in the Extended SNA. The participation of women in community services and help to other household during holidays is a positive sign, which paves the way for women empowerment.

5.2.3 Gender Difference in Time Used in Non-SNA Activities on Normal Days and Holidays

Non -SNA activities or Personal activities is an essential part of personal life. Total Non- SNA time is a combination of three categories: they are 1) learning, 2) Social, political and cultural activities, mass media, etc.3) Personal care and self – maintenance. The following tables discuss the time difference of males and females on normal days and holidays in Non- SNA categories.

Table 5.7

Gender difference in time used for Non-SNA activities in minutes on normal days

Activities	Male	Female
Learning	190	115
Social, Political and Cultural Activities, Mass media, etc.	115	90
Personal Care and Self–Maintenance	750	745
Non -SNA (Total)	1055	950

Source: Primary Data

Non- SNA activities shows the time a person spends for their personal well-being. Table 5.7 shows the time spent by both male and female on normal days in Non-SNA activities which is also referred to as personal activities.

On an average, male spend 17 hours 35 minutes for the total activities in Non-SNA whereas this is only 15 hours 50 minutes for an average female. This shows that though female spend less time in SNA activities, due to the works in the household, they could spend lesser time for their personal care and leisure.

This reduction in personal time actually reduces the time for learning for a female. In normal days on an average a male spend 3 hours 10 minutes for learning purposes, while that of female is only 1 hour 55 minutes. This is having many policy implications because while considering the high profile jobs, it needs a lot of time for learning. For an average female due to household work related strain, the reduction in time available for learning and personal improvements, reduces their scope for high profile jobs and create gender difference in earnings though they are highly educated.

A plus one student (Female), who is 16 years old, says that she cleans the surrounding of her house and washes her clothes herself. But when her mother falls ill, she does all the household work and it's because the male members in the house do not know to perform household activities. As a result, she spends lesser time for learning during these days.

A plus one student (male), who is 16 years old says that even if his mother fall sick, his studies do not get affected because his sister does all the household work.

The learning process of females is sensitive when comparing to males. Learning time of women depends on their mother's health, the presence of another female in the family and their health, the ability of male members to perform household works and their attitude. However, when it comes to a male, the above process is unlikely to happen because unless and until there is the presence of females in the family, their learning process will never affect. Therefore the average male get more time in Non-SNA activities. In the case of social, political and cultural activities, mass media, etc. the time difference between an average male and female is 25 minutes. In the case of personal care and self-maintenance, not much gender difference is visible.

Table 5.8*Gender difference in time used for Non-SNA activities in minutes on holidays*

Activities	Male	Female
Learning	65	45
Social, Political and Cultural Activities, Mass media, etc.	290	145
Personal Care and Self –Maintenance	975	820
Non -SNA (Total)	1330	1010

Source: Primary Data

The table 5.8 shows the gender difference in time used for Non-SNA activities on holidays. On an average a male could spend 22 hours 10 minutes for Non-SNA activities on holidays whereas females spend only 16 hours 50 minutes. Here, the time difference between them is 5 hours 20 minutes. The time difference is more during holidays when compared to that on normal days. On an average males spend 5 hours 20 minutes more than females in Non-SNA activities in holidays gives the extend of work burden on female due to the presence of children and male member at home. In the category of Non-SNA activities the maximum gender time difference comes in the case of personal care and self-maintenance. Males spend 2 hours 35 minutes higher to females for this purpose. For personal care and self-maintenance, males spend 16 hours 15 minutes whereas females spend 13 hours 40 minutes. While compared to males, females spend less time for Non-SNA. This is because during holidays females spend extra time on Extended SNA.

In the case of social, political and cultural activities, mass media, etc males spend 4 hours 50 minutes whereas female could spend only 2 hours 25 minutes. Males spend 2 hours 25 minutes more for this activity than females. Apart from the normal days, the time difference here is 2 hours more. The time spent by males and females during holidays for learning is less when compared to normal days. For learning, males spend 1 hour 5 minutes, whereas females spend 45 minutes. The time difference here is 20 minutes. During holidays, household work affects the learning process of females than males.

A 32-year middle class homemaker says that she has to spend extra time for the family members. Apart from that attending family functions, receiving guests at home

etc are mostly done during holidays. Therefore, the time spent for learning process during holidays is less compared to normal days.

A 26 year old housewife who is preparing for the PSC exam, says that during normal days she does everything in a planned manner and sets aside some time for study but this cannot happen during holidays because she has to do more work for her husband and kids. On normal days, she gives more attention to the studies of her children on holidays and hardly find time for her own work. Sometimes, she does not even know when the day gets over.

The time utilisation pattern of Non-SNA activities during holidays is different from that of normal days. When the participation of women becomes high in household works, care works during holidays, for the learning process they get less time. But when it comes to the case of males during holidays they spend more time for social, political and cultural activities, mass media etc, and for personal care and self-maintenance. So on holidays while compared to normal days, they spend less time for learning activities.

5.3 Detailed Analysis of the Structure of Extended SNA

This section disaggregate the household maintenance, management and shopping for own household, Care for children, the sick, elderly and differently abled for own household activities. These two activities are part of the Extended SNA. For the valuation of household work and care work the separate evaluation is needed. For this, the household maintenance, management and shopping for own household are divided into eleven activities. In the case of Care for children, the sick, elderly and differently abled for own household classified into three categories. The following section discusses the gender difference in time utilisation pattern on normal days and holidays.

An important category in Extended SNA is household maintenance and management, shopping for own household. The contribution of males and females in household works is determined by the time they spend in the activities included in the household maintenance, management and shopping for own household. The household

maintenance, management and shopping for own household activities classified into 11 activities. In this section, the time spent for household maintenance, management and shopping for own household activities on normal days and on holidays is given below in the tables.

Table 5.9

Gender difference in time spent in Household maintenance, management and shopping for own household activities in minutes on normal days

Activities	Male	Female
Cooking food items, and serving	1	115
Cutting vegetables, meats and fish for cooking.	0	27
cleaning inside home	0	25
Cleaning dwelling and surroundings	0	20
cleaning of utensils	0	55
Care of textiles: sorting, mending, washing, ironing, and ordering clothes and linen.	0	55
Shopping for goods and non-personal services: capital goods, household appliances, equipment, food and various household supplies.	14	10
Household management : Planning, supervising, paying bills etc.	5	2
Do-it-yourself home improvements and maintenance, installation, servicing and repair of personal and household goods.	0	0
Travel related to household maintenance, management and shopping.	10	6
Other activities related to household maintenance, management and shopping.	0	0
Total	30	315

Source: Primary Data

The table 5.9 shows the time spent by both gender in household maintenance, management and shopping for own household during normal days. Females spend 1 hour 55 minutes for cooking activities whereas men spend only 1 minute. Here females spend 1 hour 54 minutes more than males in cooking activities. For cutting vegetables, meat/fish, females spend 27 minutes; in the case of males, it is zero. This indicates the sole responsibility of female in cooking for household members.

There is no male participation in the activities like cleaning of the house, cleaning dwellings and surroundings, cleaning of utensils. In the case of females, it is 25 minutes, 20 minutes, 55 minutes respectively.

In the case of care of textiles, the time spent by males is nil whereas females spend 55 minutes. The only one activity where the presence of male is in household maintenance, management and shopping for own household. For shopping, males spend 14 minutes whereas females spend 10 minutes.

For payment of bills, male spend 5 minutes whereas in the case of females it is 2 minutes. Majority of the people opt for online payment. For travel related to household maintenance, management and shopping for own household, males spend 10 minutes whereas females spend 6 minutes. In do-it-yourself home improvements and maintenance, installation, servicing and repair of personal and household goods activities, male and female participation is absent.

In household maintenance, management and shopping for own household category, males spend time for shopping, paying bills, travels. It is the reason behind showing males participation in Extended SNA. In all the household work activities males participation is nil, except in cooking in which male spend 1 minute as household work. Actually, this indicates the structure of gender division of labour in household work.

Table 5.10

Gender difference in time spent in Household maintenance, management and shopping for own household activities in minutes on holidays

Activities	Male	Female
Cooking food items and serving	1	115
Cutting vegetables, meat and fish for cooking.	2	30
cleaning inside home	0	25
cleaning dwelling and surroundings	2	25
cleaning of utensils	0	55
Care of textiles: sorting, mending, washing, ironing, and ordering clothes and linen.	0	51
Shopping for goods and non-personal services: capital goods, household appliances, equipment, food and various household supplies.	15	2
Household management : Planning, supervising, paying bills etc.	0	0
Do-it-yourself home improvements and maintenance, installation, servicing and repair of personal and household goods.	4	2
Travel related to household maintenance, management and shopping.	20	0
Other activities related to household maintenance, management and shopping.	1	0
Total	45	305

Source: Primary Data

The table 5.10 shows the time spent by males and females in household work during holidays. For cooking, males spend 1 minute whereas females spend 1 hour 55 minutes. While comparing this to normal days it is as same to holidays. In holidays also cooking pattern is same like normal days. Instead, other special food items are prepared which require the time that is used for cooking on normal days.

During holidays, for cutting vegetables, fish etc males spend 2 minutes whereas in the case of females during normal days it is 27 minutes and on holidays it is 30 minutes. The reason behind this is during holidays the household usually prefers non-vegetarian items and for preparing this it takes more time than normal days. The female participation for cleaning the house is 25 minutes, the males participation here is absent, and it like as on the normal days.

In the case of cleaning dwelling and its surroundings, during holidays females spend 5 minutes more than normal days. The male participation is absent during normal days while on holidays it is 2 minutes. The male participation is absent in the activities like cleaning of utensils, care of textiles etc. When it comes to the case of females, for cleaning of utensils, they spend 55 minutes. During normal days the same time is spend for cleaning utensils, which is a household duty. For females, it takes the same time during normal days and holidays for cleaning utensils, as it is a routine work for them.

In the case of care of textiles, during holidays, females spend 51 minutes and while comparing this to normal case it is 4 minutes less. This is because during normal days as husbands go to work and children go to school there will be plenty of clothes for washing. This will not be there on holidays. That is the reason behind the dip of 4 minutes.

In the case of shopping, Males spend 15 minutes whereas in case of females it is 2 minutes. Most of them prefer online shopping. In case of males, it is the time (morning) that they spend to purchase non-veg items (fish/meat).

For bill payment, the time spent by both males and females is absent. For home care (Do-it-yourself home improvements and maintenance, installation, servicing and

repair of personal and household goods.), males spend 4 minutes and during normal days these people spend no time. In case of females ,it is 2 minutes.

For travel related household maintenance, management and shopping, males spend 20 minutes during holidays which is 10 minutes more than normal days. In the case of females, they do not spend time for this purpose.

The summation of the time utilisation of the above activities of males and females, females spend 5 hours 5 minutes, males spend 45 minutes for the household activities in Extended SNA. When males spend time for shopping activities, females spend time for household activities like cooking, washing, cleaning. From this analysis, it is evident that irrespective of the type of days, there is a clear gender division of job is prevalent. Though female does majority of Extended SNA activities, still there is gender division of jobs.

Table 5.11

Gender difference in time spent in Care activities in minutes on normal days

Activities	Male	Female
Physical care of children: washing, dressing, feeding	2	50
Teaching, training, and instruction of own children.	0	20
Other care activities	8	5
Total	10	75

Source: Primary Data

Care activities are included in the category of Extended SNA, which is an important part of unpaid work. It is divided into three, physical care of children: washing, dressing, feeding, teaching ,training and instruction of own children, other care activities. In the section of other care activities, it is the time summation of all other care activities.

Table 5.11 shows that the time utilisation pattern of male and female for care work activities on normal days. For care activities males spend 10 minutes whereas for

physical care of children: washing, dressing, feeding, male spend 2 minutes and for other care activities he spends 8 minutes. Male do not spend time for training, teaching and instruction of own children.

In the case of female, total time spent for care is 1 hour 15 minutes and from this 50 minutes is spent for physical care of children: washing, dressing, feeding, 20 minutes for teaching, training, and instruction of own children. 5 minutes for other care activities. When compared to males, female spend 1 hour 5 minutes more for care work.

A 36 year old housewife says that the same responsibility in housework needs to be given for care work and she says that she is the one who takes care of her children, helps them in studies, washing their clothes. Her husband takes the kids to the school and in the evening she picks them up from the school. For household work and care work, she says that she follows the time management.

Table 5.12

Gender difference in time spent in Care activities in minutes on holidays

Activities	Male	Female
Physical care of children: washing, dressing, feeding	9	41
Teaching, training, and instruction of own children.	1	20
Other care activities	5	9
Total	15	70

Source: Primary Data

The time utilisation pattern in care activities on holidays is different from that on normal days. The table 5.12 shows the time spent by male and female in care activities during holidays.

During holidays, male spend 9 minutes whereas females spend 41 minutes for physical care of children: washing, dressing, feeding. In the case of teaching and training, and instruction of own children, males participation is absent during normal days but during holidays it is 1 minute and in the case of females they spend the same time on normal days and holidays. In the other care activities, male contribution is 5 minutes whereas of females, it is 9 minutes.

Time utilisation of the males in the care works on normal days is 10 minutes, which saw an increase of 15 minutes on holidays. On normal days, female spend 1 hour 15 minutes and during holidays, it is 1 hour 10 minutes. From the analysis, that there is not much difference is seen in the case of time utilisation of female in the caring work when compared to normal days and holidays.

5.4 Marital Status and Time Utilisation Pattern

Marital status of an individual is also a deciding factor to prioritize the time in SNA, Extended SNA, Non- SNA activities. Probability to increase the unpaid work time after marriage in the case of females is a common phenomenon. Compared to other category's housework, it shows an increasing trend in the life of women especially married women (South.J Scott & Spitze Glenna, 1994). The household chores are done more by married women than the unmarried women. Married men spend more time on non-routine household work than bachelors (Borra Cristina et al., 2017). Marital status plays an important role in the life of a person, especially women. So a thorough analysis about the time utilisation pattern of the sample respondents is needed. For this, the marital status is divided into married, unmarried, divorced, widow category. The following six tables explain the marital status and the gender difference in time spending pattern of these four sections in SNA, Extended SNA and Non- SNA on normal days and holidays.

5.4.1 Marital status and time spent in SNA activities

Table 5.13

Marital status and Gender difference in time spent in SNA activities in minutes on normal days

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Primary	35	30	5	5	35	45
Secondary	110	20	25	0	20	10
Trade and Business	90	10	15	0	0	0
Services	275	50	65	45	55	210
SNA(Total)	510	110	110	50	110	265

Source: Primary Data

The table 5.13 shows the relationship between marital status and SNA work time. It is evident that a married male spend more time on SNA than an unmarried male. For total SNA activities, they spend 8 hours 30 minutes whereas an unmarried male spend only 1 hour 50 minutes. It is interesting to note that a divorced female spend comparatively higher time on SNA activities than any other women do. On an average a divorced female spend 4 hour 25 minutes for SNA activities, while that of a married female it is only 1 hour 50 minutes. As it is already seen that in all categories, the time spend on service sector is high when compared to all the other sectors.

The Unmarried category females spend less time for SNA. They spend a total time of 50 minutes for SNA activities and from these 45 minutes spent for service sector and 5 minutes spent for primary activities. It is evident that married male spends more time for SNA activities. In the case of female, the divorced category spends more time for SNA. The reason for the large participation of divorced females in SNA activities are due to the fact is that they have no other person to depend for an income. This may be due to poverty driven labour market participation.

A 45 years female who is divorced has two children. To earn a living, she works in a private company and after the work in the company, she does all the household works in the family.

Table 5.14

Marital status and Gender difference in time spent in SNA activities in minutes on holidays

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Primary	40	20	5	5	20	40
Secondary	5	5	0	0	5	5
Trade and Business	5	0	0	0	0	0
Services	30	5	5	25	0	60
SNA(Total)	80	30	10	30	25	105

Source: Primary Data

Table 5.14 shows the relationship between marital status and SNA participation of sample respondents during holidays. The time spent for SNA in holidays is lesser when compared to normal days. In holidays divorced female spend more time for SNA activities. Married males spend 1 hour 20 minutes for SNA activities whereas a divorced female spend 1 hour 45 minutes for SNA activities.

5.4.2 Marital status and time spent in Extended SNA activities

Table 5.15

Marital status and gender difference in time spent in Extended SNA activities in minutes on normal days

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Household maintenance, management and shopping for own household.	50	385	5	50	320	295
Care for children, the sick, elderly and disabled for own household	10	95	0	5	50	105
Community services and help to other household	5	5	0	0	5	0
Extended SNA (Total)	65	485	5	55	375	400

Source: Primary Data

This section discusses about the time difference between males and females in Extended SNA activities on normal days. Table 5.15 shows the time utilisation pattern of males and females on Extended SNA activities on normal days. Married women who spend more time for Extended SNA and they spend 8 hours 5 minutes for this. It is the married females who spend more time for household maintenance, management and shopping for own household category and they spend 6 hours and 25 minutes. Divorced females who spend second most time in Extended SNA activities and they spend 6 hours and 40 minutes.

While comparing females, males spend less time for household maintenance, management and shopping for own household category. Married males spend 50 minutes whereas unmarried males spend 5 minutes. Divorced females spend more time

for the Care of children, the sick, elderly and disabled for own household. Married females spend 1 hour 35 minutes for care work. The reason for an extra 10 minutes spent in the case of divorced females may be that they have no other assistance or help from others or any family member. They take care of their children, drop them to school, take them to hospitals, etc and this is the reason for the time difference.

In the case of community services and help to other household married males, married females, widows spend a time of 5 minutes each. In the remaining categories, the participation to community services and help to other household is absent.

When considering work as SNA and Extended SNA together, divorced female spend 11 hours 5 minutes whereas a married male spend 9 hours 35 minutes. Married female on an average spend 9 hours and 55 minutes for work in a normal day.

It is a fact that though there is no payment for Extended SNA, it produces output and definitely, that increases the welfare of the society. Hence, it needs to count the labour involved in household production. The valuation of household production will give an exact picture of the actual economic contribution of female. That part will discuss in the next chapter. Without understanding the actual economic contribution of women, it is not possible for the government to take proper gender policies. While trying to calculate the exact contribution of women, it needs to analyse the work done during holidays also.

Table 5.16

Marital status and gender difference in time spent in Extended SNA activities in minutes on holidays

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Household maintenance, management and shopping for own household	70	360	10	110	265	300
Care for children, the sick, elderly and disabled for own household	25	90	0	10	45	60
Community services and help to other household	0	30	5	5	25	50
Extended SNA (Total)	95	480	15	125	335	410

Source: Primary Data

Table 5.16 shows the relationship between the marital status and the time utilisation Pattern of male and female to Extended SNA activities during holidays. For household maintenance, management and shopping for own household as in the case of holidays, married females who spend more time and they spend 6 hours for this. The divorced females spend 5 hours; widows spend 4 hours 25 minutes. In the case of males, married males spend 1 hour 10 minutes, unmarried males spend 10 minutes for household maintenance, management and shopping for own household category. Married males spend 20 minutes and unmarried males spend 5 minutes more on holidays than on normal days.

In the case of care of children, the sick, elderly and disabled for own household, married females spend more time and it is 1 hour 30 minutes. Divorced females spend 1 hour, widows spend 45 minutes, and unmarried females spend 10 minutes. For care, married males spend 25 minutes.

In the case of community services and help to other household females show better participation than males. In the case of females, the divorced females spend 50 minutes for community services and help to other household. Married females spend 30 minutes and widows spend 25 minutes. For organizations like Kudumbasree /Ayalkoottam they spend time.

Unmarried males and females spend 5 minutes each for community services and help to other household. In the case of married males, their participation is nil.

The participation of women in community services and help to other household is a positive sign towards women empowerment. It is on the holidays that the participation of women in community services and help to other household is more than on normal days.

Like on normal days, while adding the SNA and Extended SNA it is 8 hours 35 minutes spent by divorced females. Married females spend 8 hours 30 minutes. Widows spend 6 hours. For SNA+ Extended SNA, females spend more time than males. When SNA and Extended SNA together calculated, a married male and an unmarried female spend only 2 hours 55 minutes and 2 hours 35 minutes respectively.

Unmarried males spend 25 minutes. When SNA and Extended SNA added together an average divorced female spend more time when compared to widows and married females. A married male on an average spend only 2 hours 55 minutes for SNA + Extended SNA in holidays. In short, like on normal days, on holidays too the females carry the real burden of work.

5.4.3 Marital status and time spent in Non-SNA activities

Table 5.17

Marital status and gender difference in time spent in Non-SNA activities in minutes on normal days

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Learning	2	5	465	530	0	0
Social, Political and Cultural Activities, Mass media, etc.	110	90	140	90	110	65
Personal Care and Self – Maintenance	753	750	720	715	845	710
Non- SNA (Total)	865	845	1325	1335	955	775

Source: Primary Data

The table 5.17 shows the time spend for Non-SNA after the time utilised for SNA and Extended SNA on normal days. In Non-SNA activities, the sample respondents spend more time on personal care and self-maintenance. In the whole category, the widows spend more time on personal care and self-maintenance. They spend more time on the personal activities like individual religious practice, meditation, doing nothing, rest and relaxation.

In the case of Personal care and self-maintenance, married male spend 12 hours 33 minutes; unmarried male spend 12 hours. Married females spend 12 hours 30 minutes, unmarried female spend 11 hours 55 minutes and divorced female spend only 11 hours 50 minutes. The time spend by divorced females on personal care and self-maintenance, is comparatively less when compared to other females or males category.

Unmarried male spend more time in social, political and cultural activities, mass media, etc., which is of 2 hours 20 minutes. Married males spend 1 hour 50 minutes for social, political and cultural activities, mass media, etc.

For social, political and cultural activities, mass media, etc., in the case of females, widows spend 1 hour 50 minutes, married and unmarried females spend 1 hour 30 minutes. Divorced females spend 1 hour 5 minutes.

In the case of learning, the participation of widows and divorced females is nil. In the married category, males spend 2 minutes females spend 5 minutes. The unmarried category spend more time for learning, the males spend 7 hours 45 minutes whereas the females spend 8 hours 50 minutes. Their learning activities include the learning time in school /college and the travelling time to the institution (Doing homeworks / going to tuition class etc).

The reason for less participation of female category in learning is their present living condition. This can be understood by analysing the below mentioned case studies.

A 45 years old widow lost her husband 12 years ago. From the age of 33 she didn't go for the learning or other activities. Her family is now bearing all the expenses, she is working on her own land, and with the yield, she makes a living.

A 50-year-old divorced female, is a graduate who tried to find an income by herself first. While she was in her degree second year, she got married, and the only thing that she did after marriage, in terms of education is the completion of degree course with a lot of struggle. As the role of mother, she is the only one to take care of her children. Therefore, she did not get time for learning. When she finally got divorced, she have to take care of her children by herself alone so she did not get time to study.

A 30 years old female, who got married in her 22, could not learn after marriage. She could not get time to learn because she had to take care of her aged in laws, husband and her children.

These three cases shows that the situation decides the learning process of a woman. Women get more chances for learning before their marriage and after marriage majority will not get time for learning.

In the case of male, the unmarried category spends more time for Non-SNA which is of 22 hours 5 minutes. In the case of learning, the unmarried males and unmarried female spend enough time for learning purpose. After the marriage, they do not have to go for the learning process. However, when it comes to the female community, when they get married amidst the education process, they do not get time for their learning process after marriage. Married females on an average spend only 5 minutes and a married male spend only 2 minutes for learning on normal days.

Table 5.18

Marital status and gender difference in time spent in Non- SNA activities in minutes on holidays

Activities	Married category		Unmarried category		Widow	Divorced
	Male	Female	Male	Female	Female	Female
Learning	5	5	145	190	0	0
Social, Political and Cultural Activities, Mass media, etc.	265	130	325	200	130	130
Personal Care and Self – Maintenance	995	795	945	895	950	795
Non- SNA (Total)	1265	930	1415	1285	1080	925

Source: Primary Data

Table 5.18 describes about the marital status and the time utilisation pattern of sample respondents in Non- SNA activities during holidays. While assessing the total Non- SNA in the case of males, unmarried males spend 23 hours 35 minutes and it is the highest in total male-female category. From this, 15 hours 45 minutes is spend for personal care and self-maintenance, 5 hours 25 minutes for social, political and cultural activities, mass media, etc and these are the ones who spend more time on social , political and cultural activities, mass media, etc in the total category and they spend 2 hours 25 minutes for learning. Married male on an average spend 21 hours 5 minutes for total Non-SNA activities on holidays and from this 16 hours 35 minutes is for personal care and self-maintenance.

In the case of females, the unmarried category on an average spend 21 hours 25 minutes and from this 14 hours 55 minutes is spent for personal care and self-maintenance. An unmarried male spend on an average 15 hours and 45 minutes for personal care activities. In the case of unmarried females, they spend 3 hours 20 minutes for social political and cultural activities, mass media, etc. In the case of learning, unmarried females spend 3 hours 10 minutes and this category spends more time for learning.

Widows on an average spend 18 hours for Non-SNA activities. In which 15 hours 50 minutes is spending for personal care and self-maintenance. For social, political and cultural activities, mass media, etc they spend 2 hours 10 minutes. The participation of this category is nil in learning process.

5.5 Presence of Children and Gender Difference in Time Utilisation Pattern

Child care is an important part of unpaid care work. Mothers spend a lot of time in the caring of their children. The recognition of unpaid work will be necessary in the macro economy for many reasons. This increases the total wellbeing in the economy by offering free services to the people. It adds to the total human capital formation too by 1) by taking care of the human capital which is a source of the labour in the economy 2) by fostering human being as labour (Hirway Indira, 2012). The analysis help us to understand the influence of childcare in SNA, Extended SNA, Non-SNA activities. For this, the sample respondents classified into two categories; Family having children and family not having children.

5.5.1 Presence of Children and time spent in SNA activities

Table 5.19

The presence of children and Gender difference in time spent in SNA activities in minutes on normal days

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Primary	30	25	25	25
Secondary	95	15	55	15
Trade and Business	55	5	60	10
Services	235	50	150	50
SNA(Total)	415	95	290	100

Source: Primary Data

Table 5.19 shows the gender difference in time spent for SNA activities in relation with the presence of children in the family. Men will be spending more time for SNA in the houses where children are present; they spend 6 hours 55 minutes whereas in the case of females in family having no children, SNA participation is comparatively high and they spend 1 hour 40 minutes. This shows that when the presence of child will compel men to do more market work and female to do work that is more domestic.

In the family having no children category, in the case of males, spend 4 hours 50 minutes and from this 2 hours 30 minutes is spent for service sector, 1 hour for trade and business, 55 minutes for secondary sector, 25 minutes for primary sector. The female included in the same category spends 1 hour 40 minutes for total SNA activities and from this 50 minutes is spent for service sector, 10 minutes for trade and business, 15 minutes for secondary, 25 minutes for primary sector. In the case of trade and business, females in family having no children category spend 5 minutes more than family having children category.

When the family having children, women have to take care of them and their entry to labour market is difficult. When casual discussion with some of the homemakers during the interview they said, “When the children are there in the house, there is no compromise on the time spent for the children”. Females give more importance to the needs of all members in the family. Here it shows the patriarchal belief of the society that compels men to do financial needs and women take care of her family and children.

Table 5.20

The presence of children and Gender difference in time spent in SNA activities in minutes on holidays

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Primary	35	20	20	20
Secondary	5	5	5	10
Trade and Business	0	0	0	0
Services	25	0	15	10
SNA(Total)	65	25	40	40

Source: Primary Data

Table 5.20 shows that the presence of children increases the SNA participation of male, while that of female is lesser on holidays. The pattern is same for holidays and normal days. Children's presence reduces the market time of a female, while that compel the male to work more time. It is evident that on holiday's major working time is spend on primary activities by all categories.

5.5.2 Presence of Children and time spent in Extended SNA activities

Table 5.21

The presence of children and Gender difference in time spent in Extended SNA activities in minutes on normal days

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Household maintenance, management and shopping for own household	35	325	25	310
Care for children, the sick, elderly and disabled for own household	20	165	5	10
Community services and help to other household	0	0	0	0
Extended SNA (Total)	55	490	30	320

Source: Primary Data

Table 5.21 shows the time spent for Extended SNA by male and female during normal days. It is evident that female from a household where children are present spend huge amount of time for Extended SNA when compared to female from households without children. It is evident that female spend on average 2 hours and 45 minutes only for care work and this is only 10 minutes in the case of a female not having children at home. On an average a female from a household having children spend 8 hours 10 minutes and this is the category that spends more time in Extended SNA when compared to the other categories. Females in the family without children category spends 5 hours 20 minutes.

Table 5.22

The presence of children and Gender difference in time spent in Extended SNA activities in minutes on holidays

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Household maintenance, management and shopping for own household	60	305	35	300
Care for children, the sick, elderly and disabled for own household	25	145	10	15
Community services and help to other household	0	30	0	25
Extended SNA (Total)	85	480	45	340

Source: Primary Data

As like normal day, holidays also females with family having children spend large amount of time on household activities. But it is evident that when the male member spend some more time for care work the work burden of female is little reduced. However, Kerala is having high literacy and education, the gendered division of labour is still an important factor, which is evident from the analysis that reduces female work participation, has not received much attention by the policy makers.

5.5.3 Presence of Children and time spent in Non- SNA activities

Table 5.23

The presence of children and Gender difference in time spent in Non-SNA activities in minutes on normal days

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Learning	120	45	245	165
Social, Political and Cultural Activities, Mass media, etc.	110	75	125	100
Personal Care and Self –Maintenance	740	735	750	755
Non- SNA (Total)	970	855	1120	1020

Source: Primary Data

From table 5.23, it is evident that the presence of children reduces the personal time of both male and female. However, the highest reduction is in the case of females.

On an average a female from a household without a child get 17 hours for Non-SNA activities, while that of a female with a family having children spend only 14 hours and 15 minutes. The presence of children reduces Non-SNA time for men also. However, when compared to female their position is little better. On an average a male member from a family having children spend 16 hours and 10 minutes for Non-SNA activities while that of a male from a family not having a child spend 18 hours 40 minutes. From the analysis, it is evident that the presence of a child increases the work burden of a female and that reduces their quality time for leisure.

A 30-year-old homemaker says that she wants to try for a job but cannot do preparation for it, as there are children at home; at times, she had to spend more time for them than usual hours. During night hours, when their kids do not sleep, she sits with them and get tired when she get up in the morning. She has to do the household chores and she gets hardly any time to read the daily newspaper. She does not get time even for sleeping or studying

The presence of children on normal days influences the learning time of female.

Table 5. 24

The presence of children and Gender difference in time spent in Non -SNA activities in minutes on holidays

Activities	Family having children		Family having not children	
	Male	Female	Male	Female
Learning	45	20	75	60
Social, Political and Cultural Activities, Mass media, etc.	270	125	305	160
Personal Care and Self –Maintenance	975	790	975	840
NON -SNA (Total)	1290	935	1355	1060

Source: Primary Data

As like normal days, holidays also females in the family having children spend the least time to Non- SNA and they spend only 15 hours 35 minutes whereas their male counterparts spend 21 hours 30 minutes. Males in the family having no children category spend 22 hours 35 minutes whereas their female counterparts spend only 17 hours 40 minutes. While comparing the males and females in this category, it shows a

wide difference in the personal care and self-maintenance. Females in the family having children category spend 13 hours 10 minutes. Females in the family having no children category spends 14 hours. Males in the two categories spend 16 hours 15 minutes for personal care and self-maintenance.

In the case of social, political and cultural activities, mass media, etc., males in the family having children category spend 4 hours 30 minutes and females spend 2 hours 5 minutes. Males in the family having no children category spends 5 hours 5 minutes and they are the ones who spend more time than the others in social, political and cultural activities, mass media, etc. The females in the same category spend 2 hours 40 minutes. Males in the family having no children category spend 1 hour 15 minutes for learning, females in the same category spend 1 hour. Males in the family having children category spend 45 minutes and females spend only 20 minutes for learning in holidays. While compared to normal days, there is an increase in the time spent in activity status and the time utilisation pattern of personal care and self-maintenance and social, political and cultural activities, mass media, etc on holidays. However, in case of learning, the time spent for it is less on holidays.

In the total Non-SNA time, females in the family having children category spend less time compared to the other category and here it shows a big difference compared to the difference between the two categories in Non-SNA time during normal days. Males in the family having children category spend more time than females on holidays for Non-SNA. As like normal days, females in the family having children category also spend less time to Non- SNA activities. From this analysis it can be concluded that there is a clear-cut evidence of gendered division of labour is existing in Kerala based on the data.

5.6 Presence of Disabled Persons and the Time Utilisation Pattern

Presence of disabled persons is an important factor determining the intensity of unpaid care work. Female will do that major portion of unpaid care work. It is evident that there is an inverse relationship exist in between SNA and Extended SNA activities of women. The difference in unpaid care work influences the gender gap in labour force participation (Ferrant Gaëlle et al., 2014). The presence of disabled persons may

also influences the structure of SNA, Extended SNA and Non -SNA time. This section categorizes the respondents into family having disabled person and family not having disabled person and compare their time utilisation pattern of both categories.

5.6.1 Presence of Disabled Persons and time spent in SNA, Extended SNA and Non-SNA activities

Table 5.25

The presence of disabled persons and time utilisation pattern in SNA , Extended SNA and Non- SNA Activities in minutes

Activities	Family having Disabled person		Family having not Disabled person	
	Male	Female	Male	Female
SNA(Normal days)	225	125	350	95
SNA(Holidays)	70	70	40	35
Extended SNA (Normal days)	55	540	40	390
Extended SNA (Holidays)	65	515	60	395
Non -SNA (Normal days)	1160	775	1050	955
Non -SNA (Holidays)	1305	855	1340	1010

Source: Primary Data

It is evident from table 5.25 that the presence of a disabled person reduces SNA time of a male and it increases the SNA time of a female. This may be due to the presence of male-disabled persons; the female members are compelled to work due to lack of source of income. When considering the Extended SNA female spend more when a disabled person is present at home. That means, female have to shoulder majority of SNA and Extended SNA work when a family member is disabled. While considering the Non-SNA, female spend lesser time when compared to male and female from other category. This clearly indicate the over work burden of women when a person is disabled. Female along with market work, which reduces their leisure time, will do majority of the care work.

A 48 years old homemaker has a disabled person in her home and she has three children depending on her. She finds daily income through tailoring and she herself takes care of all the matters of the disabled person. She says that even 24 hours is not enough to complete the whole work.

5.7 Activity Status and the Time Utilisation Pattern

The relationship between activity status and the time utilisation will help us to understand the actual time spend on different activities by male and female.

5.7.1 Activity status and time spent in SNA activities

Table 5.26

Activity status and gender difference in time utilisation pattern in SNA activities in minutes on normal days

Activity status	Activities	Male	Female
Self- employed	Primary	55	35
	Secondary	100	125
	Trade and Business	135	115
	Services	230	55
	SNA (Total)	520	330
Regular Wage /Salaried Employee	Primary	10	5
	Secondary	15	0
	Trade and Business	20	0
	Services	495	490
	SNA (Total)	540	495
Casual Labour	Primary	20	0
	Secondary	250	120
	Trade and Business	20	0
	Services	205	380
	SNA (Total)	495	500
Not Working but Seeking/ Available for Work (or Unemployed)	Primary	5	90
	Secondary	0	0
	Trade and Business	0	0
	Services	0	0
	SNA (Total)	5	90
Neither Working nor Available for Work (or not in Labour Force)	Primary	0	25
	Secondary	0	5
	Trade and Business	0	10
	Services	20	0
	SNA (Total)	20	40

Source: Primary Data

From table 5.26 it is evident that though male members are participating more in SNA activities, they are spending more time on it. Those women who are doing self-employment spend on an average 5 hours and 30 minutes, whereas a male spends 8 hours 40 minutes in self-employment activity. In the case of regular salaried female who spend 8 hours and 15 minutes in SNA activities, while that of male spends 9 hours. In the case of casual labour category alone, female spend 5 minutes more when compared to their male counterparts.

Those who are reported to be not working in the principal status, they are involved with some SNA activities. An unemployed female spend on an average 1 hour 30 minutes in SNA activities while that of a person who are not in labour force spend 40 minutes for SNA activities. It is not only the invisibility of females in SNA activities, the time they spend in market work is also very low when compared to their male counterparts can be explained by the time they spend on Extended SNA activities. Female produces goods and services for the entire household by reducing their leisure time and market work time. This reduces their economic status and increases the dependency level. The understanding of the amount of output, which produced by female will create drastic changes in the attitudes of the policy makers and the common people.

Table 5.27

Activity status and Gender difference in time utilisation pattern in SNA activities in minutes on holidays

Activity status	Activities	Male	Female
Self-employed	Primary	50	40
	Secondary	5	65
	Trade and Business	5	0
	Services	30	30
	SNA (Total)	90	135
Regular Wage/ Salaried Employee	Primary	40	15
	Secondary	0	0
	Trade and Business	0	0
	Services	35	40
	SNA (Total)	75	55
Casual Labour	Primary	10	0
	Secondary	0	0
	Trade and Business	0	0
	Services	0	0
	SNA (Total)	10	0
Not Working but Seeking /Available for Work (or Unemployed)	Primary	5	0
	Secondary	0	0
	Trade and Business	0	0
	Services	0	0
	SNA (Total)	5	0
Neither Working nor Available for Work (or not in Labour Force)	Primary	0	15
	Secondary	0	5
	Trade and Business	0	0
	Services	10	5
	SNA (Total)	10	25

Source: Primary Data

Table 5.27 describes time utilisation of males and females in SNA activities during holidays. Among self-employed, female spend 2 hours 15 minutes, whereas their male counterparts spend only 1 hour 30 minutes. It is interesting to note that majority of the time spend by female is in secondary sector. In the case of regular salaried category, a female spend 55 minutes while that of male spend 1 hour 15 minutes. In the case of casual work , male spend 10 minutes in primary sector, while their female counterparts are not spending time in holidays. Along with this some amount of works are done by majority female who are reported to be out of labour force. This kind of data collection will provide a clear understanding of the existing labour market involvement and the gender division of labour briefly.

5.7.2 Activity status and time spent in Extended SNA activities

Table 5.28

Activity status and gender difference in time utilisation pattern in Extended SNA activities in minutes on normal days

Activity status	Activities	Male	Female
Self- employed	Household maintenance, management and shopping for own household	40	380
	Care for children, the sick, elderly and disabled for own household	5	40
	Community services and help to other households	5	5
	Extended SNA (Total)	50	425
Regular Wage / Salaried Employee	Household maintenance, management and shopping for own household	55	235
	Care for children, the sick, elderly and disabled for own household	15	65
	Community services and help to other households	0	5
	Extended SNA (Total)	70	305
Casual Labour	Household maintenance, management and shopping for own household	55	205
	Care for children, the sick, elderly and disabled for own household	15	60
	Community services and help to other households	0	0
	Extended SNA (Total)	70	265
Not Working but Seeking /Available for Work (or Unemployed)	Household maintenance, management and shopping for own household	15	240
	Care for children, the sick, elderly and disabled for own household	20	0
	Community services and help to other household	0	0
	Extended SNA (Total)	35	240
Neither Working nor Available for Work (or Not in Labour Force)	Household maintenance, management and shopping for own household	0	320
	Care for children, the sick, elderly and disabled for own household	0	80
	Community services and help to other household	0	0
	Extended SNA (Total)	0	400

Source: Primary Data

Table 5.28 shows the time utilisation of Extended SNA activities by male and female who are involved in different activity status. It is interesting to note that a self-employed female is spending 7 hours and 5 minutes for Extended SNA activities whereas their male counterparts are spending only 50 minutes for household work. Likewise, a regular salaried female is spending 5 hours and 5 minutes for Extended SNA work while that of a male is spending only 1 hour 10 minutes. A female casual labour spends 4 hours 25 minutes for household work while their male counterpart spend only 1 hour 10 minutes. An unemployed female spend 4 hours while that of a male spend only 35 minutes for household work. A non-working female spend 6 hours 40 minutes at household work while that of a male is zero. This is in a normal day. The explanation of gender difference in wage and earning is evident from this data. All women, irrespective of their economic status, have to spend huge amount of their time in household is a fact. Without identifying this fact all gender policies will end up with drawing line in water. The analysis of the time use pattern of holidays will gave more clarity in this regard.

Table 5.29

Activity status and gender difference in time use pattern in Extended SNA activities in minutes on holidays

Activity status	Activities	Male	Female
Self- employed	Household maintenance, management and shopping for own household	65	400
	Care for children, the sick, elderly and disabled for own household	20	50
	Community services and help to other households	0	40
	Extended SNA (Total)	85	490
Regular Wage/ Salaried Employee	Household maintenance, management and shopping for own household	65	305
	Care for children, the sick, elderly and disabled for own household	30	95
	Community services and help to other households	0	25
	Extended SNA (Total)	95	425
Casual Labour	Household maintenance, management and shopping for own household	55	355
	Care for children, the sick, elderly and disabled for own household	30	90
	Community services and help to other households	0	20
	Extended SNA (Total)	85	465
Not Working but Seeking / Available for Work (or Unemployed)	Household maintenance, management and shopping for own household	40	125
	Care for children, the sick, elderly and disabled for own household	25	0
	Community services and help to other household	0	0
	Extended SNA (Total)	65	125
Neither Working nor Available For Work (or not in Labour Force)	Household maintenance, management and shopping for own household	10	295
	Care for children, the sick, elderly and disabled for own household	0	70
	Community services and help to other household	10	25
	Extended SNA (Total)	20	390

Source: Primary data

Table 5.29 shows that on holiday's household work burden increases for all men and women. However, female work burden is at the peak. As it is already seen that a self- employed female spend more time on SNA during holidays, their Extended SNA time is also at the peak. They spend on an average 8 hours and 10 minutes for Extended SNA whereas their male counterparts spend only 1 hour 25 minutes. In the case of an average regular salaried female, they spend 7 hours and 5 minutes whereas their male counterparts spend only 1 hour 35 minutes. A female casual labour spends 7 hours 45 minutes for Extended SNA during holidays whereas their male counterparts spend only 1 hour 25 minutes. In the case of unemployed female, they spend 2 hours 5 minutes for Extended SNA, their male counterparts are spending only 1 hour 5 minutes for this. Those women who are not in labour force spend 6 hours and 30 minutes for household work while that of their male counterparts it is only 20 minutes. From this analysis, it can be concluded that those women who are working outside have to do all their domestic work on holidays and those who are not working will get some relaxation on holidays. As it is a fact that though they are getting payment or not, all productive activities need to spend time and effort, the total time of work will be very useful in understanding the real problem of invisibility of women in socio-economic sphere.

5.7.3 Activity status and time spent in Non- SNA activities

Table 5.30

Activity status and gender difference in time utilisation pattern in Non-SNA activities in minutes on Normal days

Activity status	Activities	Male	Female
Self-employed	Learning	0	0
	Social, political and cultural activities, mass media, etc.	105	55
	Personal care and self – maintenance	765	630
	Non -SNA (Total)	870	685
Regular Wage/ Salaried Employee	Learning	0	10
	Social, political and cultural activities, mass media, etc.	125	65
	Personal care and self – maintenance	705	565
	Non -SNA (Total)	830	640
Casual Labour	Learning	0	0
	Social, political and cultural activities, mass media, etc.	130	55
	Personal care and self – maintenance	745	620
	Non -SNA (Total)	875	675
Not Working but Seeking /Available for Work (or Unemployed)	Learning	70	120
	Social, political and cultural activities, mass media, etc.	350	240
	Personal care and self – maintenance	980	750
	Non- SNA (Total)	1400	1110
Neither Working nor Available for Work (or not in Labour Force)	Learning	600	130
	Social, political and cultural activities, mass media, etc.	105	95
	Personal care and self – maintenance	715	775
	Non- SNA (Total)	1420	1000

Source: Primary Data

The Non-SNA time allocation among persons doing different activity status will clearly depict lack of leisure time and time for learning among women. It is seen that

all categories of male are getting more time for socialization and personal care when compared to their female counterparts. A self-employed male enjoys 14 hours and 30 minutes Non- SNA time while that of their female counterpart it is only 11 hours and 25 minutes. In the case of regular salaried persons, this is 13 hours and 50 minutes and 10 hours and 40 minutes respectively. As a casual labour is concerned an average male get 14 hours and 35 minutes whereas their female counterpart is getting only 11 hours 15 minutes. When considering the unemployed persons, male enjoys full day (23 hours 20 minutes) leisure and in which they are spending 1 hour 10 minutes for learning whereas a female get 18 hours and 30 minutes Non-SNA time where they spend 2 hours for learning purpose. Those who are not in labour force male get an entire day of leisure, whereas a female is getting 16 hours 40 minutes for leisure. In which she spend 2 hours 10 minutes of learning and male spend 10 hours for study purpose. This is due to the fact that majority male who are not in labour force may be students, whereas females are homemakers. From all these analysis it is evident that though female work participation in labour market is lesser, they are producing huge amount of output at home while spending their majority time and without identifying the contribution of women in actual production, all policies will fail.

Table 5.31

Activity status and gender difference in time utilisation pattern in Non-SNA activities in minutes on holidays

Activity Status	Activities	Male	Female
Self-employed	Learning	5	0
	Social, political and cultural activities, mass media, etc.	255	100
	Personal care and self – maintenance	1005	715
	Non- SNA (Total)	1265	815
Regular wage /salaried employee	Learning	0	15
	Social, political and cultural activities, mass media, etc.	285	190
	Personal care and self – maintenance	985	755
	Non- SNA (Total)	1270	960
Casual labour	Learning	0	0
	Social, political and cultural activities, mass media, etc.	315	95
	Personal care and self – maintenance	1030	880
	Non -SNA (Total)	1345	975
Not working but seeking / Available for work (or unemployed)	Learning	40	150
	Social, political and cultural activities, mass media, etc.	380	325
	Personal care and self – maintenance	950	840
	Non -SNA (Total)	1370	1315
Neither working nor available for work (or not in labour force)	Learning	185	45
	Social, political and cultural activities, mass media, etc.	315	145
	Personal care and self – maintenance	910	835
	Non -SNA (Total)	1410	1025

Source: Primary Data

The time spend on Non-SNA on holidays will give a more clear picture of the gender issues. From table 5.31, it is clear that on holidays male utilises their entire day on personal care, and leisure whereas a female is getting very less time on personal care

and rest. It is because they have to do all the household duties irrespective of the type of days. On holidays, they have more household work. On an average a self-employed male spend 21 hours and 5 minutes for Non-SNA whereas a female counterpart is spending only 13 hours and 35 minutes. In the case of regular salaried and casual labour category, also the same pattern is visible. Regular salaried male spend 21 hours and 10 minutes and male casual labour spend 22 hours and 25 minutes. Whereas, for a female this is only 16 hours and 16 hours 15 minutes respectively. These analysis clearly depict the time pressure of women, which are not discussed anywhere.

5.8 Conclusion

This chapter analyses the time utilisation pattern of male and female on SNA, Extended SNA and Non-SNA. The time spend on SNA activities by male exceeds that of their female counterparts whereas in the case of time spend of Extended SNA, female time is far ahead of male time. When combing the SNA work time and Extended SNA work time together, an average female is spending more time when compared to an average male member. As far as leisure time is concerned, female is spending less time when compared to male. The data clearly shows that there is no such difference in working and non-workers in Extended SNA involvement of female. Though we had a lot of women empowerment measure, the economic contribution of women in Extended SNA had not taken into consideration. Working people are sacrifices their leisure time for Extended SNA activities and it seems that Extended SNA work is mandatory for a female is concerned. There is no such policies we formulated which increases the Extended SNA time of men, rather all are trying to increase the SNA time of women without considering the “actual” work time of women. The study pointed out the fact that the females who are not having an incoming earning male member at home have to do all the economic activities and household activities together and that may adversely affect their quality of life due to the reduction in time for personal care and leisure. While analysing the marital status and market work, it is seen that divorced females are spending more time for SNA activities and they are doing all the Extended SNA activities at home also and getting lowest time for Non-SNA activities. These results will have many policy level implications. The next chapter is going to calculate the monetary value of the Extended

SNA work of the sample respondents and that will be a revelation for the policy makers who are trying to increase the work participation rate of female without considering the actual economic contribution of women.

CHAPTER: VI

ANALYSIS OF THE VALUE OF UNACCOUNTED WORK

6.1 Introduction

Household work and care works not only contributes to the family, human and social wellbeing but also enriches the entire national wellbeing. Women play an important role as a homemaker and caretaker without any payment and profit. Their only intention is to do maximum welfare to their family members. They do all the work for the family like cooking, washing, cleaning, and also they do care work of child and disabled persons. The time contributed by women to these activities is greater than men (it is discussed in the fifth chapter). In each activity, females provide better services to the family members. In the case of cooking, they give maximum quality and quantity to the family members. To be more precise, when it comes to household food security, a woman is the kingpin (Choudhary Neetu & Parthasarathy. D, 2007). Women take care of children; they give moral lessons and ethical values to them. In the case of disabled persons, they provide care works at the same time they also give mental strength and support. So, these services are not in the invisible category. Because, what happens when there is no female member in the family to do care work and take care of disabled, there comes a need for the family members to depend on Kindergarten and home nurses. On the basis of places of production, the invisibility is determined in an economic sense. When a food item is purchased from the market, a monetary transaction takes place and it becomes a part of the National Income calculation. But at the same time, when we produce food items by females for the family members, it doesn't become a part of national income. It is the same in the case of care works. Household works and care works deserve to be a part of national income calculation. This chapter gives the visible value to the household works and care works.

This chapter calculates the value of unpaid work of the sample respondents of study. The data was collected during 2019. In this year, there are 279 normal days and 86 holidays. Generally two methods are used for the calculation of economic contribution of unpaid work. The first method is Specialist per minute wage approach; the second approach is the mixed method (deduct the value of cooking in the

calculated value by using Specialist per minute wage approach and adding the value of cooking part by using output approach). This study calculates the per day economic contribution by male and female separately. The methodology used for the study is explained in detail in the third chapter. The selected activities for calculation are selected from the category of household maintenance ,management and shopping for own household and care for children, the sick, elderly and disabled for own household for calculation shown in the following tables:6.1and 6.2.

Table 6.1

The activities under household maintenance, management and shopping for own household

Sl. No.	Type of Works
1	Cooking
2	Washing
3	Cleaning utensils
4	Cleaning inside and surroundings of home
5	Shopping for food and household item
6	Cutting vegetables, meat, fish

Source: Report of the Time Use Survey, Central Statistical Organisation 2000

Table 6.2

The activities under Care for children, the sick, elderly and disabled for own household

Sl.No.	Care Work
1	Physical care of children and accompanying them to school and other places
2	Physical care of sick, disabled persons

Source: Report of the Time Use Survey, Central Statistical Organisation 2000

6.2 Determine the value of household work and care work by using specialist per minute wage approach

Specialist per minute wage approach is discussed in detail in the third chapter. Here, specialist wage adopted the wage rate of 1 hour; additional 1 hour from the domestic labour sector decided by Kerala government in 2016. By using this wage rate of 1 hour & additional 1 hour, converted to per minute wage rate. On the basis of this

per minute wage rate the daily and monthly wage rate for persons who do household work and care work is calculated and also calculated the final unaccounted economic contribution of male and female towards national income. The 1 hour and additional 1 hour wage rates of domestic servants are mentioned in the following table 6.3.

Table 6.3

The Domestic labour sector wage rate determined by Kerala Government 2016 (in rupees)

Sl. No.	Work	For 1 hour	Additional 1 hour
1	Cooking	39.75	24.75
2	Washing	37.50	22.50
3	Cleaning utensils	37.50	22.50
4	Cleaning inside and surroundings of home	37.50	22.50
5	Shopping for food and household item	37.50	22.50
6	Cutting vegetables, meat, fish	37.50	22.50
7	Physical care of children and accompanying them to school and other places	38.25	23.25
8	Physical care of sick, disabled persons	38.25	23.25

Source: Thozhilum Naipunyavum , Government of Kerala 2016

The above table 6.3 shows the legally accepted wage rate of 1 hour and additional 1 hour of domestic labour sector determined by Kerala government in 2016. Out of the 8 activities, six are related to the category of Household maintenance and management and shopping for own household and rest of the activities are related to the category of Care for children, the sick, elderly and disabled in the household. Based on the data, these wage rates converted into minutes. So these per minute wage rate termed in the study as ‘Specialist Per minute wage rate’. The following table 6.4 shows the 1 hour and additional 1 hour wage rate of domestic labour sector determined by Kerala government in 2016 converted to minutes.

Table 6.4

Conversion of the 1 hour and additional 1-hour domestic labour sector wage rate into minutes

Sl. No.	Work	Per-minute Wage rate for 1 hour (in rupees)	Per-minute Wage rate for Additional 1 hour (in rupees)
1	Cooking	1.50	2.42
2	Washing	1.6	2.66
3	Cleaning utensils	1.6	2.66
4	Cleaning inside and surroundings of home	1.6	2.66
5	Shopping for food and household item	1.6	2.66
6	Cutting vegetables, meat, fish	1.6	2.66
7	Physical care of children and accompanying them to school and other places	1.56	2.58
8	Physical care of sick, disabled persons	1.56	2.58

Source: Thozhilum Naipunyavum, Government of Kerala 2016 (Converted to per minute)

6.3 Per Day Unaccounted Economic contribution of Male and Female on Household work

The following sections calculate the daily unaccounted economic contribution of male and female who do household and care work. By using the specialist per minute wage rate this study develops a formula to find out the daily wage rate for those who do household and care work. The following definitions developed by the study to calculate daily unaccounted economic contribution of male and female who does household work and care work. The following are the definitions:

- Per day unaccounted economic contribution by household work = Average amount of time for household work × Specialist Per minute Wage rate.
- Per day unaccounted economic contribution by Care work = Average amount of time for care work × Specialist Per minute Wage rate

By using these definitions the following four sections calculate the economic value of household work and care work per day for normal days and holidays.

6.3.1 Per Day Unaccounted Economic Contribution of Females Who Do Household and Care Work on Normal Days

This section analyses the daily unaccounted economic contribution of females who do household works and care works on normal days

Table 6.5

Household work and Mean time duration of females and its equivalent wage rate on a normal day

Sl. No.	Work	Mean time	Day wage (in rupees)
1	Cooking	1 hour and 55minutes	172.85
2	Washing	55 minutes	88
3	Cleaning utensils	55 minutes	88
4	Cleaning inside and surroundings of home	45 minutes	72
5	Shopping for food and household item	10 minutes	16
6	Cutting vegetables, meat, fish	27 minutes	43.2
Per day unaccounted economic contribution of women who do household work			480.05

Source: Primary Data

The above table 6.5 shows the types of household work and average time they spend for it and their unaccounted economic contribution for household work. Females spend 1 hour and 55 minutes for cooking, for this a female should get 172 rupees and 85 paise per normal day. For washing and cleaning utensils, females spend 55 minutes each, so they deserve 176 rupees. On a normal day, for Cleaning the house and surroundings, females spend 45 minutes so they should get 72 rupees. Shopping for food and household items, they spend 10 minutes and they are eligible to earn 16 rupees per normal day. For cutting vegetables, meat, fish etc. females spend 27 minutes, they should get 43.2 rupees. Adding all services or activities or household

works a female should get 480.05 rupees on a normal day. That means their unaccounted economic contribution is 480.05 rupees on a normal day

Table 6.6

Care work and Mean time duration of females and its equivalent wage rate on a normal day

Sl.No.	Care Work	Mean time	Day Wage (in rupees)
1.	Physical care of children and accompanying them to school and other places	50 minutes	78
2.	Physical care of sick, disabled persons	2 hours	187.2
Per day unaccounted economic contribution of women who do care works			265.2

Source: Primary Data

The above table 6.6 shows the women's mean time duration of care work activities and their unaccounted economic contribution on a normal day. In the case of Physical care of children and accompanying them to school and other places, females spend 50 minutes. For this they deserve 78 rupees per day. For Physical care of sick, disabled persons, females spend 2 hours; they should get 187 rupees and 2 paise per normal day. Totally on a normal day, a female unaccounted economic contribution is 265 rupees and 2 paise for care work.

6.3.2 Per Day Unaccounted Economic Contribution of Males Who Do Household and Care Work on Normal Days

This section analyses the daily unaccounted economic contribution of males who do household works and care works on normal days.

Table 6.7

Household work and Mean time duration of males and its equivalent wage rate on a normal day

Sl. No.	Work	Mean time	Day wage (in rupees)
1	Cooking	1 minute	1.50
2	Washing	0	0
3	Cleaning utensils	0	0
4	Cleaning inside and surroundings of home	0	0
5	Shopping for food and household item	14 minutes	22.4
6	Cutting vegetables, meat, fish	0	0
Per day unaccounted economic contribution of men who do household work			23.9

Source: Primary Data

The above table 6.7 shows the time duration of male participation in household work activities and their unaccounted economic contribution. Males spend 1 minute for cooking, so they deserve 1 rupee and 50 paise per normal day. For Washing, cleaning utensils, cleaning inside and surroundings of home, Cutting vegetables, meat, fish, etc the male participation is absent. For Shopping food and household item males spend 14 minutes and they have the right to get 22 rupees and 4 paise. On a normal day, unaccounted economic contribution of males who do household work is 23 rupees and 9 paise.

Table 6.8

Care work and Mean time duration of males and its equivalent wage rate on a normal day

Sl. No.	Care Work	Mean time	Day Wage (in rupees)
1	Physical care of children and accompanying them to school and other places	2 minutes	3.12
2	Physical care of sick, disabled persons	0	0
Per day unaccounted economic contribution of men who do care works			3.12

Source: Primary Data

Table 6.8 shows that in the case of physical care of children and accompanying them to school and other places, males spend 2 minutes. The unaccounted economic contribution of males who do care work is 3 rupees and 12 paise. In the case of Physical care of sick, disabled persons male participation is nil.

6.3.3 Per Day Unaccounted Economic Contribution of Females Who Do Household Work and Care Work on Holidays

This section discusses the valuation of unaccounted economic contribution for household work and care work activities done by females on holidays. The below tables 6.9 and 6.10 shows the unaccounted economic contribution of females who do household works and care works.

Table 6.9

Household work and Mean time duration of females and its equivalent wage rate on a holiday

Sl. No.	Work	Mean time	Day wage (in rupees)
1	Cooking	1 hour 55minutes	172.85
2	Washing	51 minutes	81.6
3	Cleaning utensils	55 minutes	88
4	Cleaning inside and surroundings of home	50 minutes	80
5	Shopping for food and household item	2 minutes	3.2
6	Cutting vegetables, meat, fish	30 minutes	48
Per day unaccounted economic contribution of women who do household work			473.65

Source: Primary Data

The above table 6.9 shows time duration of each household activity and unaccounted economic contribution of females on holidays. Females spend 1 hour and 55 minutes for cooking, so they should get 172 rupees and 85 paise per holiday. In the case of washing, they spend 51 minutes and they should get 81 rupees and 6 paise. For cleaning utensils they spend 55 minutes, so they should get 88 rupees. In the case of

cleaning inside and surroundings of home they spend 50 minutes. They should get 80 rupees for this. For shopping food and household items, they spend 2 minutes, so they should get 3 rupees and 2 paise. For Cutting vegetables, meat, fish etc. females spend 30 minutes and they should get 48 rupees. Totally their unaccounted economic contribution is 473 rupees and 65 paise on a holiday.

Compared to normal days, on holidays females economic contribution is less because the activities like washing, shopping etc are reduced by 12 minutes compared to normal days. In the case of holidays there will be no offices and schools so the time spent for washing is comparatively less when compared to normal days. While comparing to normal days on holidays, females spend 3 minutes more for cutting vegetables , meat / fish etc. But as there is no increase in the total time, the resulting unaccounted economic contribution is lesser. Still the unaccounted economic contribution of females is better when compared to the males.

Table 6.10

Care work and Mean time duration of Females and its equivalent wage rate on a holiday

Sl.No	Work	Mean time	Day Wage (in rupees)
1	Physical care of children and accompanying them to school and other places	41 minutes	63.96
2	Physical care of sick, disabled persons	2 hours	187.2
Per day unaccounted economic contribution of women who do care works			251.16

Source: Primary Data

Table 6.10 shows that the per day unaccounted economic contribution of female for care work is rupees 251.16. In the case of physical care of children and accompanying them to school and other places, female spend 41 minutes, they should get 63 rupees and 96 paise per holiday. In the case of physical care of sick, disabled persons, females spend 2 hours; it is same as on normal days they should get rupees 187.2. In total, they should get 125 rupees and 46 paise on a holiday. Compared to normal days their unaccounted economic contribution in care is low on holidays

because during holidays as there is no school the time spent in accompanying children to school and other places, washing their school uniforms is nil and there is a reduction of 9 minutes compared to normal days and this is reflected in their unaccounted economic contribution .

6.3.4 Per Day Unaccounted Economic Contribution of Males Who Do Household Work and Care Work on Holidays

This section evaluates the household work and care work done by males on holidays. It is presented in the following two tables.

Table 6.11

Household work and Mean time duration of males and its equivalent wage rate on a holiday

Sl. No.	Work	Mean time	Day wage (in rupees)
1	Cooking	1 minute	1.50
2	Washing	0	0
3	Cleaning utensils	0	0
4	Cleaning inside and surroundings of home	2 minutes	3.2
5	Shopping for food and household item	15 minutes	24
6	Cutting vegetables, meat, fish	2 minutes	3.2
Per day unaccounted economic contribution for men who do household work			31.9

Source: Primary Data

Table 6.11 shows the male mean time duration in each household activity and its corresponding wage rate. In the case of cooking, males spend the same amount of time on holidays when compared to normal days. It is of 1 minute and they should get 1 rupee and 50 paise. In the case of washing, cleaning utensils, male participation is nil. In the case of cleaning the house (inside) and surroundings, males spend 2 minutes; they should get 3 rupees and 2 paise. For the shopping for food and household items, males spend 15 minutes so they should get 24 rupees and in the case of cutting vegetables, meat, fish, etc. they spend 2 minutes, they deserve to get 3 rupees and 2

paise. The total unaccounted economic contribution of men per day for the household work on holidays is 31 rupees and 9 paise. Compared to normal days, on holidays male participation increases by 5 minutes and their contribution increases too.

Table 6.12

Care work and Mean time duration of males and its equivalent wage rate on a holiday

Sl.No.	Work	Mean time	Day Wage (in rupees)
1	Physical care of children and accompanying them to school and other places	9 minutes	14
2	Physical care of sick, disabled persons	0	0
Per day unaccounted economic contribution of men who do care works			14

Source: Primary Data

Table 6.12 shows that in the case of physical care of children and accompanying them to school and other places, males spend 9 minutes so they should get 14 rupees on a holiday. The Physical care of sick, disabled persons is absent on holidays just like on normal days. In the case of child care, the 2 minutes spent on normal days increases to 9 minutes on holidays. There is an increase of 7 minutes here. As a result, there is an increase of rupees 10.88 paise in their unaccounted economic contribution.

6.4 Calculation of Monthly Unaccounted Economic Contribution by Household Work and Care Work

This section determines the monthly unaccounted economic contribution of those persons who do household work and care work. The first section of this study developed an unaccounted economic contribution of male and female who do household and care work on normal and holidays. On the basis of this study, a definition can be formulated for the calculation of the monthly salary for household work and care work. With this definition as a foundation, this study calculates the monthly unaccounted economic contribution of household work and care work from

the month of January 2019 to December 2019. The definition of monthly unaccounted economic contribution of household work and care work are as follows:

- Monthly unaccounted economic contribution by Household work = (Normal day unaccounted economic contribution by household work × Number of normal days in that month + Holiday unaccounted economic contribution by Household work × Number of holidays in that month)
- Monthly unaccounted economic contribution by care work = (Normal day unaccounted economic contribution by care work × Number of normal days in that month + Holiday unaccounted economic contribution by care work × Number of holidays in that month)

To explain the section in detail, January 2019 is taken as the model, in this month there are totally 31 days out of these 24 are normal days and 7 are holidays. The following table shows how to calculate the monthly unaccounted economic contribution of household works and care works in the month of January 2019.

Table 6.13

Unaccounted Economic contribution by household work in the month of January 2019 (in rupees)

HOUSEHOLD WORK (In January 2019)	
Male	Female
(23.9×24+31.9×7)	(480.05×24+473.65×7)
573.6+223.3	11521.2+3315.55
= Rupees 796.9paise	= Rupees 14836.75 paise

Source: Primary Data

This table 6.13 shows that a male respondent unaccounted economic contribution is rupees 796.9 paise per month for household work. In the case of females, it is rupees 14836.75 paise per month. The difference between male and female unaccounted economic contribution in unpaid work is rupees 14039.85 paise by using specialist per minute wage method for household work in the month of January 2019. This shows an average female unaccounted economic contribution is 14836.75

rupees in the month of January 2019, which are not included in the national income due to the problems related to our definition of economic work.

Table 6.14

Unaccounted economic contribution of a person by care work in the month of January 2019 (in rupees)

CARE WORK (In January 2019)		
Category	Male	Female
Child care	$(3.12 \times 24 + 14 \times 7)$ $74.88 + 98$ = Rupees 172.88 Paise	$(78 \times 24 + 63.96 \times 7)$ $= 1872 + 447.72$ = Rupees 2319.72 Paise
Disabled care	0	$(187.2 \times 24 + 187.2 \times 7)$ $= 4492.8 + 1310.4$ = Rupees 5803.2 Paise

Source: Primary Data

Table 6.14 shows the monthly unaccounted economic contribution of male and female who do care work in the month of January 2019. There are two categories of care, one is child care and another one is care for disabled persons. For child care, male should get rupees 172.88 paise and in the case of females, they should get rupees 2319.72 paise per month. In the disabled care, male participation is nil, so their production is zero. In the case of females, they should get rupees 5803.2 paise per month for the care of the disabled.

This is the monthly salary a male and female deserve to get in household work, child care, care of the disabled etc in the month of January 2019. This is their monthly actual economic contribution which is not included in our SNA. The following table shows the rest of the months from February 2019 to December 2019.

Table 6.15

Per month unaccounted economic contribution for household work in the year of 2019(in rupees)

Month	Male	Female
February	709.2	13409.4
March	796.9	14836.75
April	781	14350.3
May	788.9	14843.15
June	773	14356.7
July	788.9	14843.15
August	804.9	14830.35
September	813	14324.7
October	804.9	14830.35
November	757	14369.5
December	796.9	14836.75

Source: Primary Data

Table 6.16

Per month unaccounted economic contribution of child care work in the year of 2019 (in rupees)

Month	Male	Female
February	141.76	2113.8
March	172.88	2319.72
April	180.64	2227.68
May	162	2333.76
June	169.76	2241.72
July	162	2333.76
August	183.76	2305.68
September	224.16	2171.52
October	183.76	2305.68
November	148	2269.8
December	172.88	2319.72

Source: Primary Data

Table 6.17

Per month unaccounted economic contribution of Disabled care work in the year of 2019 (in rupees)

Month	Male	Female
February	0	5241.6
March	0	5803.2
April	0	5616
May	0	5803.2
June	0	5616
July	0	5803.2
August	0	5803.2
September	0	5616
October	0	5803.2
November	0	5616
December	0	5803.2

Source: Primary Data

Table 6.17 shows the unaccounted economic contribution of disabled care work. The contribution of male is '0' because they don't contribute any time to the disabled care.

The three tables 6.15, 6.16, 6.17 give the monthly production of male and female for household work, child care and disabled care work. If they do this work in market they will be remunerated but as they are doing this in the home, they are not being remunerated. The salary that these people should get on monthly basis for unpaid work they render is given above. Here female's unaccounted economic contribution is higher than that of males because the lion's share of time of females is dedicated to do unpaid work.

6.5 Aggregate Female and Male Unaccounted Economic Contribution in National Income through their Household Works and Care Works on Normal days and Holidays in a Year

This section discusses the unaccounted economic contribution of males and females towards national income. For this, first calculate the contribution on normal days and holidays separately by using two methods, one is specialist per minute wage

the other one is excluding the cooking part from the method specialist per minute wage and add to the cooking part by using output method. This study develops a method and definition to calculate the contribution of females and males in household work and care work also. The following section analyses the total unaccounted economic contribution of male and female in the year of 2019 by using two methods.

6.5.1 Method I: Calculating the Unaccounted Economic Contribution of Male and Female in National Income by Using Specialist Per Minute Wage Approach

This section discusses the specialist per minute wage approach to incorporate the value of contribution in the form of household work and care work of male and female towards National Income. The study developed the following formula to assess the value of their contribution:

- Total household and care work contribution of males on Normal days or Holidays= (Per day unaccounted economic contribution of an average male for household work × Number of male respondents who do household work + Per day unaccounted economic contribution of an average male for physical care of children × Number of male respondents who do physical care of children + Per day unaccounted economic contribution of an average male for physical care of sick, disabled persons × Number of male respondents who do physical care of sick, disabled persons) × Number of Normal Days or Number of Holidays + (Per day unaccounted economic contribution of an average male for cooking × Number of male respondents who do cooking × Number of Normal Days or Number of Holidays).
- Total household and care work contribution of females on Normal days or Holidays = (Per day unaccounted economic contribution of an average female for household work × Number of female respondents who do household work + Per day unaccounted economic contribution of an average female for physical care of children × Number of female respondents who do physical care of children + Per day unaccounted economic contribution of an average female for physical care of sick, disabled persons × Number of female respondents who do

physical care of sick, disabled persons) × Number of Normal Days or Number of Holidays + (Per day unaccounted economic contribution of an average female for cooking × Number of female respondents who do cooking × Number of Normal Days or Number of Holidays).

The first two sections assess the unaccounted economic contribution of male and female to national income on normal days and holidays separately. The third section deals with the aggregate or total contribution in a year (2019).

6.5.1.1 Total Unaccounted Economic Contribution of Females and Males towards National Income on Normal Days

This section analyses the female and male value of household work and care work of the total normal days of 2019 by using the following formula:

- Total household and care work contribution of females on Normal days = (Per day unaccounted economic contribution of an average female for household work on normal days × Number of female respondents who do household work + Per day unaccounted economic contribution of an average female for physical care of children on normal days × Number of female respondents who do physical care of children + Per day unaccounted economic contribution of an average female for Physical care of sick, disabled persons on normal days × Number of female respondents who do physical care of sick, disabled persons) × Number of Normal Days + (Per day unaccounted economic contribution of an average female for cooking on normal days × Number of female respondents who do cooking × Number of Normal Days).
- Total household and care work contribution of males on Normal days = (Per day unaccounted economic contribution of an average male for household work on normal days × Number of male respondents who do household work + Per day unaccounted economic contribution of an average male for physical care of children on normal days × Number of male respondents who do physical care of children + Per day unaccounted economic contribution of an average male for physical care of sick, disabled persons on normal days × Number of male respondents who do physical care of sick, disabled persons) × Number of Normal

Days + (Per day unaccounted economic contribution of an average male for cooking on normal days × Number of male respondents who do cooking × Number of Normal Days).

Table 6.18

Total unaccounted economic contribution of male and female towards national income on total normal days in the year 2019 (in rupees)

Male contribution	Female contribution	Total contribution (Male + Female)
$(22.4 \times 200 + 3.12 \times 89) \times 279 +$ $(1.50 \times 7 \times 279)$ $= 81952.72 + 2929.5 = 84882.22$	$(307.2 \times 218 + 78 \times 93 + 187.2 \times 6)$ $279 +$ $(172.85 \times 149 \times 279)$ $= 387596.4 + 7185547.35$ $=$ 7573143.75	7658025.97

Source: Primary Data

Table no: 6.18 shows the male and female total normal days contribution to unpaid work and services. The total unaccounted economic contribution of male and female on normal days for the year 2019 is rupees 7658025.97 paise. In this, male unpaid work contribution is rupees 84882.22 paise and of the females is rupees 7573143.75 paise. 98.89 percent of the unaccounted economic contribution is done by female on normal days. The main reason for the increase of contribution of females is due to their high time devotion to the household works and care works or Extended SNA activities than males. In the case of females, they spend 5 hours and 7 minutes for the household activities and 2 hours and 50 minutes for care works. Totally they spend 7 hours and 57 minutes for Extended SNA activities on normal days. In the case of males, they spend 15 minutes for household activities and 2 minutes for care. Their total Extended SNA time is 17 minutes. Females work 7 hours and 40 minutes more than males on normal day for the above household works and care activities. So their unaccounted economic contribution towards national income is rupees 7488261.53 more than males which are not accounted in our national income.

6.5.1.2 Total Unaccounted Economic Contribution of Females and Males towards National Income on Holidays

This section deals with the aggregate unaccounted economic contribution of females and males on holidays. The following section analyses the male and female contribution by using the same formula above. The only difference here is that only holiday values are taken. The formula is:

- Total household and care work contribution of females on holidays = (Per day unaccounted economic contribution of an average female for household work on holidays × Number of female respondents who do household work + Per day unaccounted economic contribution of an average female for physical care of children on holidays × Number of female respondents who do physical care of children + Per day unaccounted economic contribution of an average female for physical care of sick, disabled persons on holidays × Number of female respondents who do physical care of sick, disabled persons) × Number of Holidays + (Per day unaccounted economic contribution of an average female for cooking on holidays × Number of female respondents who do cooking × Number of holidays).
- Total household and care work contribution of males on holidays = (Per day unaccounted economic contribution of an average male for household work on holidays × Number of male respondents who do household work + Per day unaccounted economic contribution of an average male for physical care of children on holidays × Number of male respondents who do physical care of children + Per day unaccounted economic contribution of an average male for physical care of sick, disabled persons on holidays × Number of male respondents who do physical care of sick, disabled persons) × Number of Holidays + (Per day unaccounted economic contribution of an average male for cooking on holidays × Number of male respondents who do cooking × Number of holidays).

Table 6.19

Total unaccounted economic contribution of male and female towards national income on total holidays in the year 2019 (in rupees)

Male contribution	Female contribution	Total contribution (Male + Female)
$(30.4 \times 200 + 14 \times 89)86 +$ $(1.50 \times 7 \times 86) =$ $113236 + 903 = 114139$	$(300.8 \times 218 + 63.96 \times 93 + 187.2 \times 6) 86$ $+ (172.85 \times 149 \times 86) =$ $168117.88 + 2214899.9 = 2383017.78$	2497156.78

Source: Primary Data

Table 6.19 shows the total unaccounted economic contribution of male and female on holidays for the year 2019 is rupees 2497156.78 paise. Out of this, male contribution is rupees 114139 and in the case of females, it is rupees 2383017.78. During holidays, compared to males, the female's contribution stands high with rupees 2268878.78 paise. The main reason for this is that like normal days, females spend more hours than males to Extended SNA activities during holidays. On holidays, females spend 5 hours and 3 minutes for household work and 2 hours 41 minutes for care work. Totally they contribute 7 hours and 44 minutes for total Extended SNA. In the case of males, they spend 20 minutes for household work and 9 minutes for care work. Their total contribution to Extended SNA activities is 29 minutes. Females spend 7 hours and 15 minutes more than males during holidays for Extended SNA activities. Spending very less time in Extended SNA activity is the main factor that leads to the less contribution of males towards National Income.

Even though 12 minutes of Extended SNA activities of male increases in holidays (in the category of household maintenance, management and shopping for own household 5 minute increase and in the case of Care for children, the sick, elderly and disabled for own household it is 7 minute increase). But Compared to normal days, on holidays, male contribution increases from rupees 84882.22 paise to rupees 114139. The reason for the increase is that 5 minute increase in the household work and 7 minute increase in the care work from normal days. The contribution of females to national income on normal days is rupees 7573143.75 on holidays it is rupees

2383017.78 paise. There is a difference of rupees 5190125.97 paise. The reason for time difference is the 4 minute shortage on household work and 9 minute shortage in child care work on holidays and the cause for the time shortage in holidays is that there will be no offices or schools, the activities like washing clothes (school uniforms, dresses) and preparing extra dishes for schools and offices and going to ration shops and supplyco are not required on holidays. Another main reason for the decrease of contribution to national income on holidays is that compared to number of normal day's the holidays are less. However, comparing to males, females' unaccounted economic contribution towards national income is high.

6.5.1.3 Aggregate Unaccounted Economic Contribution of Males and Females in National Income in 2019

This section discusses the total unaccounted economic contribution of the sample respondents in the year 2019. In the year 2019, there are 279 normal days and 86 holidays. The above section discussed the unaccounted economic contribution of males and females on normal days and holidays. On the basis of the above section, this section finds out the total unaccounted economic contribution of males and females towards National Income. For this, the study developed a new definition and the definition is following:

- Total Unpaid work contribution to National income = (Total household and care work contribution of females on Normal days + Total household and care work contribution of males on Normal days + Total household and care work contribution of females on holidays + Total household and care work contribution of males on holidays)

Table 6.20

Total household work and care work (unpaid) contribution of sample respondents towards National Income in the year 2019 (in rupees)

Males total unpaid contribution(Normal +Holidays)	Females total unpaid contribution (Normal +holidays)	Total contribution to national income (Males +Females)
84882.22+114139 =199021.22	7573143.75+2383017.78= 9956161.53	199021.22+9956161.53 =10155182.75

Source: Primary Data

Table 6.20 shows the aggregate unaccounted economic contribution of males and females towards National Income. Male unaccounted economic contribution is rupees 199021.22 paise. In the case of females, it is rupees 9956161.53 paise. Total unaccounted economic contribution of both male and female sample respondents in the year 2019 is rupees 10155182.75 paise by using Specialist per minute wage approach.

It is interesting to see that while taking the own income of an average female which is included in SNA is given as rupees 115.05 and that of a male is rupees 1210.75. The unaccounted economic contribution is also added to the SNA value, an average male economic contribution will be rupees 995.10 and for a female it is rupees 45670.46. This result is very much relevant as far as gender policies are concerned.

6.5.2 Method II: By Incorporating Both Specialist Per Minute Wage Approach and Output Approach

This section discusses the second method to incorporate the unaccounted economic contributions of males and females in national income. In this case, the cooking part is excluded from the specialist per minute wage approach and other activities are calculated by using specialist per minute wage approach and the cooking part is calculated by using output approach. This methodology is thoroughly analysed in the third chapter. The definition developed by this study is as follows:

- Unpaid work and Care work value on normal days = Unaccounted economic contribution calculated on the basis of specialist per minute wage approach on normal days – the unaccounted economic contribution of cooking on normal days + Average value of output from cooking per household on a normal day × number of households × number of normal days.
- Unpaid work and Care work value on holidays = Unaccounted Economic contribution calculated on the basis of specialist per minute wage approach on holidays – the unaccounted economic contribution of cooking on holidays + Average value of output from cooking per household on a holiday × number of households × number of holidays

Same formula will be used for male and female on the basis of their respective

contributions. On the basis of the above definition, the following table list out the values:

Table 6.21

Female and male unaccounted economic contribution towards National Income by using specialist per minute wage approach and output approach in the year 2019 (in rupees)

Gender	Normal Day (in rupees)	Holiday (in rupees)	Total (in rupees)
MALE	81952.72–2929.5 +(5.41×7×279)=89588.95	113236 – 903 + (1.24×7×86)= 113079.48	202668.43
FEMALE	387596.4 – 7185547.35+(795.13×149 ×279) =26256398.28	168117.88 – 2214899.9 + (969.27×149×86)= 10373443.76	36629842.04

Source: Primary Data

Table 6.21 shows the male and female contribution to national income by second method. Total unaccounted production of male community in normal days of 2019 produced rupees 89588.95 of unaccounted output whereas in the case of females it is rupees 26256398.28. In the case of total holidays, male contributes rupees 113079.48 and in the case of females, it is rupees 10373443.76. In 2019, total one year contribution of 200 working age male is rupees 202668.43 and 218 working age female it is rupees 36629842.04 as a part of their unaccounted production. That means 418 working age persons together produce an output worth rupees 36832510.47 during 2019 which are not included in our national income calculations but increases the welfare of the society. This shows that an average male is producing an output worth rupees 1013.34 whereas an average female is producing rupees 168026.79 during the year 2019. It is clear from the analysis that though female accounted contribution in national income is meager, their actual contribution is very high. Hence, when any gender policies aims to increase the economic work participation of female should take into consider the loss of unaccounted, unpaid output which reduces the welfare of the society. Hence without compensating the household production needs of the society, women economic empowerment strategies may fail. The amount of work done by

female in household production increases the opportunity cost of women to enter in labour market and that part should be taken into consideration while framing gender policies.

If the per capita unaccounted economic contribution will be multiplied with the total female population of Kerala we will get an account of the female contribution in national income. In reality, this much huge value addition is happening in our economy which is not counted by our SNA method. As it is already discussed in the fourth chapter that on the basis of their own income, per capita income of male is rupees 1210.75 and in the case of female it is only 115.05 rupees. This value is misleading the policy makers thinking that female are out of labour market and they are framing a lot of policies without identifying the huge amount of unaccounted productive activity of female. The opportunity cost of female to enter in SNA is very high while that of a male is very low. This may be the major reason for not increasing the work participation rate of female. This study clearly pointed out that female market entry with compromising household production will automatically reduces the total consumable goods in the economy through a reduction in household production or a reduction in quality leisure time of female. If we need to increase the market work of female, there should be some policies which aims to increase the household production of male, or commercialization of household production. We never had such kind of considerations while framing gender policies. The present study highlighted the need for a rethink in gender policies by the government.

6.6 Conclusion

This chapter analysed the monetary value of unaccounted household production by using two methods. One is specialist per minute wage method and another the combination of both specialist per minute wage approach and output method. This chapter calculated the actual contribution of male and female in national income which is not counted in traditional SNA. In the case of unpaid economic contribution measured by specialist per minute wage approach, the per capita unpaid economic contribution of female is rupees 45670.46 and in the case of male it is rupees 995.10. By using the mixed approach, per capita contribution of female is 168026.79 rupees

and in the case of male it is rupees 1013.34. Though there is a wide difference between the values by using these different approaches, it can be seen that output approach is better than the specialist per minute wage approach. Specialist per minute wage approach underestimates the actual value of an output. Output method can be used for only those goods which are having a price or the substitute of this good should be available in the market. That is reason for not using output method in all household activities. If cleaning and caring etc, the market rate for commercialized services are taken, the value of household production will shoot up.

The study found that a total of 418 working age persons together produce an output worth rupees 36832510.47 during 2019 which are not included in our national income calculations but increases the welfare of the society. It is clear from the analysis that though female accounted contribution in national income is meager, their actual contribution is very high. Hence, when any gender policies aims to increase the economic work participation of female should take into consider the loss of unaccounted, unpaid output which reduces the welfare of the society. Hence without compensating the household production needs of the society, women economic empowerment strategies may fail. The amount of work done by female in household production increases the opportunity cost of women to enter in labour market and that part should be taken into consideration while framing gender policies.

CHAPTER VII

FINDINGS AND CONCLUSION

7.1 Introduction

This study is a new attempt in the field of unpaid work calculation in Kerala context. In this study two methods are used to calculate the value of unpaid work. One is the specialist per minute wage approach another one is Output approach. The research approach of the study is mixed in nature. Case studies are used to support the quantitative data. The survey for this study was conducted in Chalakudy municipality in Thrissur district in Kerala. The total population of the sample area is 49525 (2011 census). All those persons in between the age group of 15-59 in Chalakudy municipality was considered as our study population. The study assumes homogeneity in character in entire Kerala hence it is assumed that there is no difference in results if we select any area in Kerala for this study. Thus our sample study area selection is justified. Random Sampling Techniques are used for the study. On the basis of 95 % confidence interval and 5 % margin of error, the sample size becomes 382. The study had taken total of 418 samples in which 200 male members and 218 female members in accordance with the sex ratio of Kerala. Time utilisation details are collected by using time use diaries. Structured questionnaire is used along with time use diary. The time use activity codes are selected from the July 1998- June 1999 pilot time use survey conducted by India. In this 116 codes were selected on the basis of the relevance. The 24 hours of a day is converted into 1440 minutes and it is divided into a 5 minute slot, totally 288, 5 minute slot columns.

The study is designed in totally seven chapters. First chapter deals with the introduction of the topic. In this chapter, the preface of the topic presented and objective of the study, context, and statement of the problem, methodology, research questions and the limitations of the study are discussed. The second chapter is Review of Literature; this chapter contains the important literatures related to the study. The reviews are classified into three categories: Studies dealing with the unpaid work position in economic theories, Empirical studies related to unpaid work, Studies Related to methodological discussion of unpaid work. The third chapter deals with the existing methodologies related to the unpaid work and also introduce a new

methodological framework to the inclusion of unpaid work in national income accounting. This chapter discusses the evolution of UNSNA and SNA. In the fourth chapter socio- economic conditions of the sample respondents are analysed. Fifth chapter analyses the time utilisation pattern of sample respondents in SNA, Extended SNA and Non- SNA activities. The sixth chapter analyses the gender difference in monetary value of unpaid work and calculate the unaccounted economic contribution of the respondents to national income through household production. In the Seventh chapter the findings and conclusion is given. This chapter is having two sections first part gives the findings of the study and in the second parts the conclusions.

7.2 Findings of the study

The study collected data related to employment and other activities by using the traditional methods along with time utilisation data. In our sample of 418 members 35.41 percentages of sample respondents belongs to Muslim community, Hindu and Christian constitute 33.73 and 30.38 respectively. While considering marital status 66.75 percentages of our sample respondents belongs to currently married category. Among male this is 59.5 percentages and among female this is 73.41 percentages respectively. Among female 5.95 per cent of persons reported that they are either widowed or separated. But among male this is zero percentage. The following are the major findings of the study.

- While analysing the activity status of the sample respondents, it is evident that 83.48 per cent of female are out of labour force.
- The work participation rate of female is only 15.61 per cent whereas male that percent is 66.5.
- It is seen that 39.2 percentage of female are having graduation and above qualification whereas male this is only 23.1.
- 80 per cent of regular salaried females are highly educated whereas it was only 29.7 per cent in the case of housewife category
- In the case of self-employed females, 73.3 per cent is having an education qualification of higher secondary and secondary level.

- In the case of casual labour women category 50 percentage is having middle level of educational qualification.
- Average yearly own income of the male is given as rupees 242150.46 whereas it is only rupees 25081.65 for women.
- Yearly mean expenditure of an average male is rupees 90904.56 whereas it is only rupees 30386.24 for an average female.
- Average saving of a male is rupees 29239.97 whereas it is only rupees 14403.58 for female.
- On an average a male spend 5 hours and 45 minutes for SNA activities in a normal day while that of a female is only 1 hour and 40 minutes.
- Male spend 3.45 times more time for market work than female.
- Work participation rate, male percentage is 4.26 times that of female, the time spend on market work by male is only 3.45 times than that of female
- For Extended SNA activities (household production) male spend only 40 minutes while that of females it is 6 hours and 30 minutes in a normal day.
- When males spend 4 hours and 5 minutes more than females in SNA activities, females utilise 5 hours and 50 minutes more than males in Extended SNA in a normal day.
- While integrating the SNA and Extended SNA together, it is seen that on an average male spend 6 hours and 25 minutes for work in a normal day whereas for a female it is 8 hours and 10 minutes .
- For Non-SNA activities (leisure time) females spend 15 hours and 50 minutes and male spend 17 hours and 35 minutes in a normal day.
- Time used by females for Non-SNA or Personal activities is 1 hour and 45 minutes less when compared to males in a normal day.
- On holidays male and female spend 50 minutes and 30 minutes respectively for SNA activities.
- In the case of Extended SNA, an average male work 1 hour whereas a female it is 6 hours and 40 minutes in a holiday.
- In the case of Non -SNA, an average males spend 22 hours and 10 minutes while that of a female it is only 16 hours and 50 minutes in a holiday.

- In a normal day average males and average females spend 25 minutes each for primary activities.
- In secondary sector an average male spend 1 hour and 15 minutes in a normal day while that of a female it is only 15 minutes.
- In trade and business, males spend 55 minutes whereas an average females spend only 10 minutes in a normal day.
- In the case of service sector males utilise 3 hours 10 minutes whereas an average females spend only 50 minutes in a normal day.
- In holidays males and females spend 50 minutes and 30 minutes respectively for SNA activities and in which they spend 25 and 15 minutes respectively for primary activities. In the secondary activities, males and females spend 5 minutes each. In the case of service sector, males spend 20 minutes and females spend 10 minutes.
- As a part of Extended SNA; household maintenance and management, shopping for own household, an average males spend only 30 minutes whereas females spend 5 hours 15 minutes in a normal day.
- In the case of care for children, the sick, elderly and disabled for own household males utilise 10 minutes whereas females spend 1 hour 15 minutes in a normal day.
- In holidays on an average a male spend 45 minutes in household maintenance, management and shopping for own household activities whereas female spend 5 hours and 5 minutes.
- To the care for children, the sick, elderly and disabled for own household, an average male utilises only 15 minutes, whereas females spend 1 hour 10 minutes in a holiday.
- Community services and help to other household, the participation of males is nil whereas an average female spends 25 minutes in a holiday.
- On an average, Male spend 17 hours 35 minutes for the total activities in Non-SNA whereas; this is only 15 hours 50 minutes for an average female in a normal day.
- In normal days on an average a male spend 3 hours 10 minutes for learning purposes, while that of female is only 1 hour 55 minutes.

- On an average a male could spend 22 hours 10 minutes for Non-SNA activities on holidays whereas females spend only 16 hours 50 minutes.
- For personal care and self-maintenance, males spend 16 hours 15 minutes whereas females spend 13 hours 40 minutes in holidays.
- In the case of social, political and cultural activities, mass media, etc, males spend 4 hours 50 minutes whereas female could spend only 2 hours 25 minutes in holidays.
- For learning, males spend 1 hour 5 minutes, whereas females spend 45 minutes in holidays.
- Females spend 1 hour 55 minutes for cooking activities whereas men spend only 1 minute in a normal day.
- For cutting vegetables, meat/fish, females spend 27 minutes; in the case of males, it is zero in a normal day.
- There is no male participation in the activities like cleaning of the house, cleaning dwellings and surroundings, cleaning of utensils. In the case of females, it is 25 minutes, 20 minutes, 55 minutes respectively.
- In the case of care of textiles, the time spent by males is nil whereas females spend 55 minutes in a normal day.
- For shopping, males spend 14 minutes whereas female spend 10 minutes in a normal day.
- For payment of bills, male spend 5 minutes whereas in case of females it is 2 minutes.
- For travel related to household maintenance, management and shopping for own household, males spend 10 minutes whereas females spend 6 minutes in a normal day.
- For cooking, males spend 1 minute whereas females spend 1 hour 55 minutes in a holiday.
- During holidays, for cutting vegetables, fish etc males spend 2 minutes whereas it is 30 minutes for a female.
- In the case of shopping, Males spend 15 minutes whereas in case of females it is 2 minutes in holidays.

- For care activities males spend 10 minutes in normal days and in the case of female it is 1 hour 15 minutes.
- For care activities males spend 15 minutes in holidays and in the case of female it is 1 hour 10 minutes.
- A married male spend 8 hours 30 minutes for SNA activities whereas an unmarried male spend only 1 hour 50 minutes in a normal day.
- On an average a divorced female spend 4 hour 25 minutes for SNA activities, while that of a married female it is only 1 hour 50 minutes in a normal day.
- On an average a divorced female spend 1 hour 45 minutes for SNA activities, while that of a married female it is only 30 minutes in a holiday.
- Married women who spend more time for Extended SNA and they spend 8 hours 5 minutes for this in normal days.
- During normal days, Married females who spend 6 hours and 25 minutes for household maintenance, management and shopping for own household category.
- Divorced females who spend 6 hours and 40 minutes for Extended SNA activities in normal days.
- During normal days, Divorced females spend 1 hour 45 minutes for the Care of children, the sick, elderly and disabled for own household.
- Married females spend 1 hour 35 minutes for care work in normal days.
- In normal days, the case of community services and help to other household married males, married females, widows spend a time of 5 minutes each.
- In the case of holidays, married females who spend 6 hours for household maintenance, management and shopping for own household. The divorced females spend 5 hours; widows spend 4 hours 25 minutes. Married male on an average spend 1 hour 10 minutes, unmarried male spend only 10 minutes for this activity
- In holidays, In the case of care of children, the sick, elderly and disabled for own household, married females spend 1 hour 30 minutes whereas married males spend 25 minutes. Divorced females spend 1 hour, widows spend 45 minutes, and unmarried females spend 10 minutes.

- During holidays, In the case of females, the divorced females spend 50 minutes for community services and help to other household. Married females spend 30 minutes and widows spend 25 minutes.
- During normal days the case of Personal care and self-maintenance, married male spend 12 hours 33 minutes whereas a married female spend 12 hours 30 minutes ; unmarried male spend 12 hours whereas an unmarried female spend 11 hours 55 minutes and an average divorced female spend only 11 hours 50 minutes.
- Unmarried male spend 2 hours 20 minutes for Social, political and cultural activities, mass media, etc whereas an average married males spend 1 hour 50 minutes in a normal day. Widows spend 1 hour 50 minutes and a married and unmarried females spend 1 hour 30 minutes. Divorced females spend 1 hour 5 minutes in an average normal day.
- Married male spend 2 minutes and females spend 5 minutes for learning activities in a normal day. An average unmarried males spend 7 hours 45 minutes whereas an unmarried females spend 8 hours 50 minutes for learning.
- In holidays, Non-SNA activities unmarried males spend 23 hours 35 minutes in which, 15 hours 45 minutes is spend for personal care and self- maintenance, 5 hours 25 minutes for social, political and cultural activities, mass media and spend 2 hours 25 minutes for learning.
- In holiday the unmarried female spend an average 21 hours 25 minutes and within this 14 hours 55 minutes is spent for personal care and self- maintenance. In the case of unmarried females, they spend 3 hours 20 minutes for social political and cultural activities, mass media, etc. In the case of learning, unmarried females spend 3 hours 10 minutes.
- Widows on an average spend 18 hours for Non-SNA activities during holidays. In which 15 hours 50 minutes is spending for personal care and self-maintenance. For social, political and cultural activities, mass media, etc they spend 2 hours 10 minutes. The participation of this category is nil in learning process.
- During normal days, Men will be spending more time for SNA in the houses where children are present; they spend 6 hours 55 minutes whereas in the case

of females, in family having no children, SNA participation is comparatively high and they spend 1 hour 40 minutes. This shows that when the presence of child will compel men to do more market work and female to do work that is more domestic. The pattern is same for holidays and normal days.

- In normal days, female from a household where children spend on average 2 hours and 45 minutes only for care work and this is only 10 minutes in the case of a female not having children at home. On an average a female from a household having children spend 8 hours 10 minutes for Extended SNA. Females in the family without children category spends 5 hours 20 minutes.
- As like normal day, holidays also females with family having children spend large amount of time on household activities. But it is evident that when the male member spend some more time for care work the work burden of female is little reduced.
- During normal days, on an average a female from a household without a child, get 17 hours for Non-SNA activities, while that of a female with a family having children spend only 14 hours and 15 minutes. The presence of children reduces Non-SNA time for men also. On an average a male member from a family having children spend 16 hours and 10 minutes for Non-SNA activities while that of a male from a family not having a child spend 18 hours 40 minutes.
- As like normal days, holidays also females in the family having children spend only 15 hours 35 minutes for Non-SNA activities, whereas their male counterparts spend 21 hours 30 minutes. Males in the family having no children category spend 22 hours 35 minutes whereas their female counterparts spend only 17 hours 40 minutes. While comparing the males and females in this category, it shows a wide difference in the personal care and self-maintenance. Females in the family having children category spend 13 hours 10 minutes. Females in the family having no children category spends 14 hours.
- The presence of a disabled person reduces SNA time of a male and it increases the SNA time of a female. When considering the Extended SNA female spend more when a disabled person is present at home. That means, female have to shoulder majority of SNA and Extended SNA work when a family member is

- disabled. While considering the Non-SNA, female spend lesser time when compared to male and female from other category. This clearly indicate the over work burden of women when a person is disabled. Female along with market work, which reduces their leisure time, will do majority of the care work.
- During normal days, those women who are doing self-employment spend on an average 5 hours and 30 minutes, whereas a male spends 8 hours 40 minutes in self-employment activity. In the case of regular salaried female who spend 8 hours and 15 minutes in SNA activities, while that of male spends 9 hours. In the case of casual labour category alone, female spend 5 minutes more when compared to their male counterparts. Those who are reported to be not working in the principal status, they are involved with some SNA activities. An unemployed female spend on an average 1 hour 30 minutes in SNA activities while that of a person who are not in labour force spend 40 minutes for SNA activities.
 - In holidays, self-employed female spend 2 hours 15 minutes, whereas their male counterparts spend only 1 hour 30 minutes. In the case of regular salaried category, a female spend 55 minutes while that of male spend 1 hour 15 minutes. In the case of casual work, male spend 10 minutes in primary sector.
 - During normal days, a self-employed female is spending 7 hours and 5 minutes for Extended SNA activities whereas their male counterparts are spending only 50 minutes for household work. Likewise, a regular salaried female is spending 5 hours and 5 minutes for Extended SNA work while that of a male is spending only 1 hour 10 minutes. A female casual labour spends 4 hours 25 minutes for household work while their male counterpart spend only 1 hour 10 minutes. An unemployed female spend 4 hours while that of a male spend only 35 minutes for household work. A female who is not in labour force spend 6 hours 40 minutes at household work while that of a male is zero.
 - In holidays, self-employed female spend more time on SNA and their Extended SNA time is also at the peak. They spend on an average 8 hours and 10 minutes for Extended SNA whereas their male counterparts spend only 1 hour 25 minutes. In the case of an average regular salaried female, they spend 7 hours and 5 minutes whereas their male counterparts spend only 1 hour 35 minutes. A

female casual labour spends 7 hours 45 minutes for Extended SNA during holidays whereas their male counterparts spend only 1 hour 25 minutes. In the case of unemployed female, they spend 2 hours 5 minutes for Extended SNA, their male counterparts are spending only 1 hour 5 minutes for this. Those women who are not in labour force spend 6 hours and 30 minutes for household work while that of their male counterparts it is only 20 minutes.

- In the case of normal days, a self-employed female enjoys 14 hours and 30 minutes Non-SNA time while that of their female counterpart it is only 11 hours and 25 minutes. In the case of regular salaried persons, this is 13 hours and 50 minutes and 10 hours and 40 minutes respectively. As a casual labour is concerned an average male get 14 hours and 35 minutes whereas their female counterpart is getting only 11 hours 15 minutes. When considering the unemployed persons, male enjoys full day (23 hours 20 minutes) leisure and in which they are spending 1 hour 10 minutes for learning whereas a female get 18 hours and 30 minutes Non-SNA time where they spend 2 hours for learning purpose. Those who are not in labour force male get an entire day of leisure, whereas a female is getting 16 hours 40 minutes for leisure. In which she spend 2 hours 10 minutes of learning and male spend 10 hours for study purpose.
- On holidays, on an average a self-employed male spend 21 hours and 5 minutes for Non-SNA whereas a female counterpart is spending only 13 hours and 35 minutes. In the case of regular salaried and casual labour category, also the same pattern is visible. Regular salaried male spend 21 hours and 10 minutes and male casual labour spend 22 hours and 25 minutes. Whereas, for a female this is only 16 hours and 16 hours 15 minutes respectively.
- If the Extended SNA time is converted into monetary terms by using specialist per minute wage approach, the unaccounted economic contribution of an average female is 480.05 rupees on a normal day
- On normal days female unaccounted economic contribution in the area of care work alone is 265 rupees and 2 paise by using specialist per minute wage approach.

- On a normal day, the unaccounted economic contribution of males who do household work is only 23 rupees and 9 paise by using specialist per minute wage approach.
- Males unaccounted economic contribution for care work on a normal day is only 3 rupees and 12 paise by using specialist per minute wage approach.
- In the case of household works, Females unaccounted economic contribution is 473 rupees and 65 paise on a holiday.
- Monetary value of care work performed by an average female in a holiday is rupees 251.16.
- The unaccounted economic contribution of men per day for the household work on holidays is only rupees 31.9 and the monetary value of care work is only rupees 14.
- By Using Specialist per Minute Wage Approach, The total unaccounted economic contribution of 418 persons in the age group of 15-59 male and female on normal days for the year 2019 is rupees 7658025.97. In this, contribution of 200 male is only rupees 84882.22 and of the 218 female is rupees 7573143.75. Monetary value of 418 persons in the 15-59 age population on holidays for the year 2019 is rupees 2497156.78. Out of this, male contribution is only rupees 114139 and in the case of females, it is rupees 2383017.78.
- During 2019, the total monetary value of household production of 200 male persons in the age group of 15-59 was rupees 199021.22 . In the case of females, it is rupees 9956161.53 paise. Total economic contribution of both male and female sample respondents in the year 2019 is rupees 10155182.75 by using Specialist per minute wage approach.
- While taking the own income of an average female which is included in SNA is given as 115.05 and that of a male is rupees 1210.75. The unaccounted economic contribution is also added to the SNA value, an average male economic contribution is reported as rupees 995.10 and for a female it is rupees 45670.46.
- By Incorporating both Specialist per minute wage approach and Output approach, Total unaccounted production of 200 male community in the age

group 15-59 in normal days of 2019 was rupees 89588.95 of unaccounted output whereas in the case of females it is rupees 26256398.28. In the case of total holidays, male contributes rupees 113079.48 and in the case of females, it is rupees 10373443.76 .

- By Incorporating both Specialist per minute wage approach and Output approach, In 2019, total one year contribution of 200 working age male is rupees 202668.43 and 218 working age female it is rupees 36629842.04 as a part of their unaccounted production.
- That means 418 working age persons together produce an output worth rupees 36832510.47 during 2019 which was not included in our national income calculations but increases the welfare of the society.
- This shows that an average a working age male produced an output worth rupees 1013.34 whereas an average female produced an output worth rupees 168026.79 during the year 2019 which is not counted in our existing national income.

7.3 Conclusion

The study analyses the reason for lower work participation of female in the traditional method of calculation and found that due to the gendered division of labour in the household created over work load in the hands of female and this part is important while considering gender policies. Education or efficiency is not a matter of the household work burden of female. Majority of the work which is performed by female are not counted as output but they are really relevant for the welfare of the entire society is concerned. The existence of a child or a disabled person really creates over burden in the shoulders of a female. Irrespective of the status as working or not-working educated or less-educated, an average female cannot escape from the household work burden. Without considering the value and importance of household production, gender policies will not succeed. The study shows that the opportunity cost of a female is very high in doing market work and for a male it is very low. Hence, without government intervention in household production labour market, female invisibility will continue. Moreover, the study highlighted an important result in front of the academia, that female economic contribution is not low. It is higher than male,

but the problem related to our national income calculations, the contribution is seems to be low. The actual contribution of female is far ahead of an average male economic contribution. The women empowerment strategies without considering the actual work burden of female will reduces the leisure time of female and that adversely affect their physical and emotional health. This part is very important in the present Kerala context.

7.4 The Scope of Future Studies

The study attempted to calculate the monetary value of female in household production by using input and output methods with the assumption of homogeneity. But it is a fact that this assumption may not be true in all cases. Inter generational changes are happening, socio-economic classes; urban rural difference, educational difference all may have its influence in gender roles. Hence, it is a wider scope in this field of research to compare the level and extend of household production within these heterogeneous groups. This study is a first step towards further studies. Moreover, the study assumes that the efficiency level of all male and female are same. The difference in productivity is not taken into consideration. The value of time for all are taken as same. But it is a fact that some are more efficient than others in doing work and that part can be solved by using output method to all activities. Present study had taken output method only in the case of cooking food. It is relevant to calculate the value of household by using output method to all other items also. These are major research areas in this field.

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APPENDIX-I
QUESTIONNAIRE

FEMALE CONTRIBUTION TO NATIONAL INCOME: EVOLVING
A NEW METHODOLOGY

I. BASIC INFORMATION

1. WARD NO/ HOUSE NO:
2. COMMUNITY: 1.SC /2.ST/3.OBC / 4.GENERAL.
3. RELIGION: 1. CHRISTIAN / 2. HINDU /3.MUSLIM / 4.NO

II. GENERAL PROFILE OF THE FAMILY

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
SL. NO	Name	Relation with Head of the Household	Sex	Age	Marital status	Educational status	Activity status	Family having children	Family having disabled person	Annual income	Their own income	Savings	Expenditure

Q3. 1. Self/ 2.Spouse/ 3.Son 4. Daughter 5. Daughter- in -law/ 6. Son- in- law/ 7.Father/ 8.Mother / 9. Grandparents / 10. Grandchild / 11. Brother /12.Sister / 13. Servant or non relatives/ 14.Others

Q6. 1.Unmarried /2.currently married/ 3.Widowed/4.Divorce/separated

Q7. 1. Illiterate/ 2.Literate without schooling and primary education/ 3.Upper primary/ 4.Secondary/ 5.Higher secondary/ 6.Professional diploma & certified courses/ 7.Arts and science degree/ 8.Professional degree/ 9.Post graduation in arts and science subjects/ 10.Post graduation in professional diploma/ 11.Others (specify).

Q8.

Main Category	Sub Categories
1. Self- Employed	1.Self- employed worker/2.Self-employed owner/3.Self- employed worker help in the household enterprises
2. Regular Salaried / Wage employee	4. Regular salaried (organized)/5.Regular salaried (unorganized job/contract basis)
3. Casual Labour	6. Casual job (manual)/ 7.Casual job (non manual)
4. Not working but seeking/available for work (or unemployed)	8. Unemployed (active search) 9.Unemployed (passive)
5. Neither working nor available for work (or not in labour force)	10. Student / 11.Attending domestic duties/ 12.Pensioner/ living from saving/13. Not able to work/14.Others.

Q9. Family having children (0-14): 1.Yes / 0.No

Q10. Family having disabled person (adult) need special care: 1.Yes / 0.No

III. HOUSEHOLD FOOD PRODUCTION- NORMAL DAY

Name of Food items cooked in household on a normal day	Number of household cooked food items Consumed by the household on a normal day	Market price of food items	Name of Ingredients used for the preparation of food items	Quantity of Ingredients used for the preparation of food items	Total quantity of ingredients consumed in a month for the preparation of food items	Monthly price of the ingredients used for the preparation of food items

IV. HOUSEHOLD FOOD PRODUCTION –HOLIDAY

Name of Food items cooked in household on a holiday	Number of household cooked food items Consumed by the household on a holiday	Market price of food items	Name of Ingredients used for the preparation of food items	Quantity of Ingredients used for the preparation of food items	Total quantity of ingredients consumed in a month for the preparation of food items	Monthly price of the ingredients used for the preparation of food items

V. TIME UTILISATION PATTERN

ACTIVITY CLASSIFICATION & TIME USE ACTIVITY CODES

I. PRIMARY PRODUCTION ACTIVITIES

111. Ploughing, preparing land and cleaning of land
112. Agriculture
113. Kitchen gardening – backyard cultivation
114. Grazing animal outside.
115. Cleaning, washing shed, feeding, watering, preparation of feed.
116. Caring of animals, hen etc/ pet care
117. Milking and processing of milk collecting, storing of poultry products.
118. Making dung cakes
119. Poultry rearing –feeding, cleaning
120. Nursery –seeding
121. Planting, lending, processing of trees.
122. Wood cutting, chopping and stocking firewood
123. Fish farming, cleaning sea bed, feeding fish, catching fish gathering other aquatic life.
124. Care of house plants, indoor and outdoor garden work.
125. Flower gardening – landscaping, maintenance, cutting, collecting, storing
126. Fetching of water
127. Collection of fruits, vegetables, berries, mushrooms etc. edible goods
128. Collection of fuel / fuel wood / twigs
129. Collection of raw material for craft.
130. Milling, husking, pounding
131. Mining, quarrying, digging, cutting related activities etc.
132. Other activities
133. Travel for the work or for the primary production activities.

II. SECONDARY ACTIVITIES

211. Construction related activities
212. Manufacturing related activities

- 213. Food processing and cooking for sale-making pickles, spices and other products: fruits, jams & jellies: baking : beverage preparation, selling readymade food etc.
- 214. Manufacturing textiles-spinning, weaving, processing of textiles; knitting, sewing, garment making of cotton, wool and other materials.
- 215. Making of handicrafts, pottery, printing and other crafts made primarily with hands (Wood based leather based crafts, embroidery work etc.)
- 216. Other activities
- 217. Travel for the work.

III. TRADE AND BUSINESS

- 311. Buying and selling goods –such as capital goods, intermediate goods, consumer durables, consumer goods –in the organized and formal sectors.
- 312. Petty trading, street and door to door vending, hawking, shoe cleaning etc.
- 313. Transporting goods in trucks, tempos and motor vehicles.
- 314. Any other activity.
- 315. Travel to work.

IV. SERVICES

- 411. Service in government and semi government organizations (salaried)
- 412. Service in private organizations (salaried)
- 413. Petty service : domestic servants, sweepers, washers, pujari, barber, cobbler, watching and guarding.
- 414. Professional services: medical and educational services (private tuition, non formal teaching etc), financial services and management and technical consultancy services.
- 415. Professional services: computer services, Xerox/photocopying services, beauty parlours, hair cutting saloons etc.
- 416. Technical services : plumbing, electrical and electronic repair and maintenance and other related services.
- 417. Others (driving etc.)
- 418. Travel to work.

V. HOUSEHOLD MAINTENANCE, MANAGEMENT AND SHOPPING FOR OWN HOUSEHOLD

- 511. Cooking food items, beverages and serving
- 512. Cutting vegetables, meats and fish for cooking.
- 513. Cleaning inside home
- 514. Cleaning dwelling and surroundings
- 515. Cleaning of utensils
- 516. Care of textiles: sorting, mending, washing, ironing, and ordering clothes and linen.
- 517. Shopping for goods and non-personal services: capital goods, household appliances, equipment, food and various household supplies.
- 518. Household management: Planning, supervising, paying bills etc.
- 519. Do-it-yourself home improvements and maintenance, installation, servicing and repair of personal and household goods.
- 520. Travel related to household maintenance, management and shopping.
- 521. Other activities related to household maintenance, management and shopping.

VI: CARE FOR CHILDREN, THE SICK, ELDERLY AND DISABLED FOR OWN HOUSEHOLD

- 611. Physical care of children: washing, dressing, feeding.
- 612. Teaching, training, and instruction of own children.
- 613. Accompanying children to places: school, sports, lessons, doctor
- 614. Physical care of the sick, disabled, elderly household members: washing, dressing, feeding, helping.
- 615. Accompanying adults to receive personal care services: such as hairdresser's therapy sessions, temple, religious places etc.
- 616. Travel related care of children.
- 617. Travel related to care of adult and others.
- 618. Taking care of guest and visitors.
- 619. Travel related to visit cousin /neighbours, patience etc.
- 620. Time spent with them
- 621. Any other activity not mentioned above.

VII: COMMUNITY SERVICES AND HELP TO OTHER HOUSEHOLDS

- 711. Community organised constructions and repairs: buildings, roads, dams, wells, ponds etc. Community assets.
- 712. Community organised work: cooking for collective celebration etc.
- 713. Volunteering with for an organisation .
- 714. Volunteer work through organisations extended directly to individuals and groups.
- 715. Participating in meetings of kudumbasree and Ayalkoottam.
- 716. Participation in meetings of local and informal groups/caste, tribes, professional associations, unions.
- 717. Participating in the political organisations and active in the political leadership.
- 718. Involvement in civic and related responsibilities: voting, rallies, attending meetings, panchayat.
- 719. Informal help to other household.
- 720. Community services not elsewhere classified.
- 721. Other community activities
- 722. Travel related to community services.

VIII. LEARNING

- 811. General education: school / university/ other educational institutions attendance.
- 812. Studies, homework and course review related to general education
- 813. Additional study, non formal education under adult education programmes.
- 814. Non formal education by children (tuition).
- 815. Work related training.
- 816. Training under government programmes such as MGNREGP, TRYSEM and others.
- 817. Other training /education
- 818. Learning not elsewhere classified
- 819. Travel related to learning.

IX. SOCIAL, POLITICAL AND CULTURAL ACTIVITIES, MASS MEDIA, ETC.

- 911. Participating in social events: Wedding, funerals, births and other celebrations.

- 912. Participating in religious activities: church services, religious ceremonies, Practices, kirtans, singing etc.
- 913. Participating in the political activities and active in the political leadership.
- 914. Participating in community functions in music, dance etc.
- 915. Arts, making music, hobbies and related courses.
- 916. Sports and game participated related activities.
- 917. Indoor and outdoor sports participation and related courses.
- 918. Spectator to sports exhibitions / Museums, cinema/theatre concerts and other performance and events.
- 919. Reading newspaper and magazine
- 920. Reading: other than newspaper and magazine
- 921. Watching television and video
- 922. Mass media use and entertainment not classified.
- 923. Meeting related to social cultural and mass media use and entertainment.
- 924. Visiting library
- 925. Other activities
- 926. Travel related to search jobs.
- 927. Travel related to social, cultural, and recreational activities not elsewhere classified, mass media use and entertainment

X. PERSONAL CARE AND SELF –MAINTENANCE

- 1011. Sleep and related activities.
- 1012. Eating and Drinking.
- 1013. Smoking, drinking alcohol and other intoxicants
- 1014. Personal hygiene and health.
- 1015. Walking, exercise, jogging, yoga, etc.
- 1016. Receiving medical and personal care from professional
- 1017. Receiving medical and personal care from household members.
- 1018. Talking, gossiping and quarreling.
- 1019. Doing nothing, rest and relaxation.
- 1020. Individual religious practices and meditation.
- 1021. Other activities (visiting beauty parlour, saloon etc & time spent for other personal enjoyment activities.)

- 1022. Resting / convalescing due to physical illness and physically unwell persons
- 1023. Travel related to personal care and self- maintenance

- Write your diary below in handwritten format of the same normal day used to fill the time use survey data sheet.

- Write your diary below in handwritten format of the same holiday used to fill the time use survey data sheet.