



**Unpaid Work and Work Participation of Women:  
Insights from India's Time Use Data**

Surajit Deb  
(University of Delhi)

Paper prepared for the 36th IARIW Virtual General Conference  
August 23-27, 2021  
Session 5: Time Use, Welfare and GDP II  
Time: Tuesday, August 24, 2021 [16:30-18:30 CEST]

31/07/2021

## Unpaid Work and Work Participation of Women: Insights from India's Time Use Data

Surajit Deb

Associate Professor, University of Delhi (Aryabhata College), India.

Email: [debsurajit@gmail.com](mailto:debsurajit@gmail.com)

### *Abstract*

*There has been an ongoing decline in Indian women's work participation and experts have argued that the economic shocks of the pandemic and periodic lock-downs could further worsen the situation in cities and villages. It is often claimed that women's work participation is better interpreted after incorporating their unpaid contribution both inside and outside of the family. The time use data provides the required information on the aspects of work participation as well as the unpaid family work. This paper examines the recent comprehensive state-level time use data 2019 on India, and subsequently explore on whether the unpaid work burden that is witnessed in many Indian states could be a reason for women's diminished labor market participation. Our results indicate that women's engagement in labor market remained at very low levels in majority of the Indian states and more so in the urban areas, where women's participation doesn't even reach to half of the men's level. Our subsequent analysis also specifies greater involvement of paid and SNA work for men and the prevalence of unpaid and non-SNA work for women in both the rural and urban areas of the states. The participation rates in the production of goods for own final use and unpaid domestic services for household members remained higher for women. A negative rank correlation between disparities in women-men worker population ratio and participation in unpaid domestic services that is observed for the urban segment would suggest unpaid work acting as constraints to women's work participation in the urban India. (Words: 252)*

Keyword: Work Participation, Gender Gap at Work, Time-Use Patterns, Unpaid Work in SNA, Cross-Section Analysis, India.

JEL: J21, J16, J22, D13, E01, C21, O53.

Paper for 36<sup>th</sup> IARIW General Conference, 23-27 August 2021.

Theme 3: Time Use, Welfare and GDP.

Session 5: Time Use, Welfare and GDP – II

August 24, 4.30 to 6.30 PM CEST, 10.30 to 12.30 PM EDT

## Unpaid Work and Women Labor-Force Participation: Insights from in India's Time Use Data

### 1. Introduction:

There has been a surprising decline in the women's work-force participation rate despite some decent economic growth alongside higher educational attainment among women in India. There could be several factors responsible for the low shares of women participation in the labor market, viz., lack of job growth in formal sectors, prevailing social norms, gender gap in education and skills, lack of safety and independent decision-making (Verick 2014, Chapman and Mishra 2019). The literature has also provided alternative explanations for the declining women workforce participation in terms of growing family and child-care responsibilities of women (Kapsos et al 2014, Luis et al 2017, Chaudhary and Verrick 2014, Desai and Joshi 2019). It is therefore argued that the extent of women work-force participation can be better understood only after interpreting the time use survey information that provides data on both the magnitude and intensity (number of hours worked) of participation by women both inside and outside the household. Hirway (2011, 2015) and Hiraway and Jose (2011) by using the first time use survey data in specific states for 2008-09 have argued that the census and NSSO underestimated work participation for women in SNA activities. The National Statistical Office in India conducted the latest TUS during January-December 2019, and provided for the first time consistent data on all the major states of India (GOI 2020b). There are some clear suggestions that the scale and intensity of women participants remained higher in unpaid domestic services at the all-India level. This study plans to use the latest time use survey data to investigate into the aspects of labor force participation of women at the level of Indian states.

It is generally agreed upon that the low labor force participation of women may not always imply that they work for fewer hours, since their unpaid work is not captured in the usual labor surveys. The family, household and caring works by women are not paid in several states of India, and these family responsibilities are sometimes causes of women's engagements in low-paid informal activities. The main strength of the time use data is that they provide information on the gender gaps in participation and time involvement in nine different time use activities broadly covering employment, own-use production, unpaid domestic services, learning, socializing and self-

care. It also presents comprehensive information on how individuals spend their time on paid or unpaid and SNA or non-SNA activities. In this paper we attempt to examine whether the burden of own-use production or unpaid work can be considered as the constraint that is blocking women's labor market participation across states of India. The rest of the paper proceeds in the following sequence. We first examine the women's work participation across major states of India in section 2. The women's work participation across Indian states is examined in absolute and also in terms of women-men disparity and rural-urban differences. Section 3 provides the status of the time use data in India. The gender-wise participation in paid and unpaid as well as SNA and non-SNA activities is discussed in section 4. Subsequently, we examine the women-men disparity in the participation of activities in the production of goods for own final use and unpaid domestic services for household members in section 5. Section 6 attempts to examine the hypothesis whether the burden of own-use production or unpaid work could be the constraint blocking women's labor market participation in India. The summary of the results from our analyses and policy implications are included in the final section.

## 2. Women's Work Participation across Indian States:

The continuous fall in the worker population ratio (WPR) for women and its low levels is also evidenced in the recent Periodic Labor Force Survey (PLFS) data of 2018-19 for various states (GOI 2020a). A ranking of 30 major states data along with the all-India estimate indicate that the states of Bihar, Uttar Pradesh, Assam, Tripura, Haryana, Arunachal Pradesh and Jharkhand occupied the lowest ranks of women's WPR that is around 10 percent, while Himachal Pradesh, Sikkim, Meghalaya, Telangana and Tamil Nadu indicated higher levels of female WPR that is around 25 percent (Figure 1). One can also observe from the PLFS, 2018-19 survey data that at the all-India level only 22 percent of women were part of the labor force as against 75 percent of men. It may be mentioned here that the current global rate of labor force participation as per the ILO data remained at close to 49 percent for women and 75 percent for men. Thus, the gap in Indian women's work participation in relation to the world average remains quite wide and is also claimed to the lowest among the South Asian countries.

(Insert Figure 1)

Subsequently, we focus on the disparity between women and men's work participation to capture the gender gap in work, separately for the rural and urban areas in Figure 2 and 3, respectively. For this we define the parity indices, viz. the ratio of the WPR for the women to that of the men, to examine the extent of gender divide in individual states. Since the parity ratios are defined keeping the women WPR in the numerator the parity ratio of more than 1 (or even close to 1) would represent better WPR for the women counterpart, and less than 1 would mean lower women WPR in individual states. The states are thereby ranked on the basis of their women-men disparity in WPR separately for the rural and urban areas in Figure 2 and 3, respectively. The parity indices imply the women WPR and therefore employment levels remain at very low levels in several states. A closer examination indicates that the best performances are experienced only in the 7 states of Chhattisgarh, Tamil Nadu, Andhra Pradesh, Telangana, Sikkim, Meghalaya and Himachal Pradesh, where the work participation for women remained at half the level of the men. The WPR for women in all the remaining 23 states as well as in all-India remained at much lower level, i.e., at less than half the level of the male. A more significant revelation here is to note that the gender disparities in work remain even more pronounced for the urban areas of India. Thus, the women WPR comprised not even half of the men WPR in the urban areas for any of the states in our sample as well as in all-India. Figure 4 that compare the women-men gaps in WPR between the rural and urban areas of each state reveal that the gaps are sharper in urban areas. Thus, the disparity between the women-men work participation remained higher for urban areas as compared to the same in rural areas in 21 states, and the vice versa in the remaining 9 states.

(Insert Figure 2, 3 and 4)

### 3. Time Use Data in India:

The time-use surveys generally provide the framework for measuring the participation of household members in terms of the numbers and amount of time spent on different activities broadly covering employment, own-use production, unpaid domestic services, learning, socializing and self-care. The major contribution of this framework is that it provides the participation and time involvement in different activities like paid or unpaid and SNA or non-SNA activities. The first national time use data of India was based on the survey conducted during 1998-99 covering 6 states, viz., Haryana, Madhya Pradesh, Tamil Nadu, Gujarat, Odisha and Meghalaya. The survey conducted by the

National Sample Survey Organization and the Census Commissioner provided an account of women's work contribution in four general areas of activity, viz., subsistence production, informal paid work, domestic work and voluntary work. According to Hirway (1999), the time-use survey data disclosed for the first time that the census and NSSO could underestimate the female work participation. The National Statistical Office (NSO) conducted the first full-scale Time Use Survey in India during January–December 2019 attempting to measure the participation rate and time spent on paid activities, care activities, unpaid activities, SNA-activities etc. The time-use data provides a better framework for understanding the gender gaps in the world of work, since this data presents additional information on the engagement of men and women in the unpaid household works.

#### 4. Burden of Unpaid Work:

The participation of household members in activities is also classified as paid and unpaid activities. The paid activities include i) self-employment for production of goods, ii) self-employment for production of services, iii) regular wage/ salary for production of goods, iv) regular wage/ salary for production of services, v) casual labor for production of goods and vi) casual labor for production of services. The unpaid activities comprised i) care for children, sick, elderly, differently-abled persons in own households, ii) production of other services for own consumption, iii) production of goods for own consumption, iv) voluntary work for production of goods in households, v) voluntary work for production of services in households, vi) voluntary work for production of goods in market/non-market units, vii) voluntary work for production of services in market/non-market units, viii) unpaid trainee work for production of goods, ix) unpaid trainee work for production of services, x) other unpaid work for production of goods and xi) other unpaid work for production of services.

The participation in unpaid domestic work remains an important women's engagement in various states of India. Although these activities contribute to the value of household budget, the predominance of women in unpaid work has often remained out of the production boundaries that define economic activities. The TUS, 2018-19 results revealed that about 95% of rural women in India between the ages of 15 and 59 participated in unpaid domestic work as against 54% of men for household members in 2019. On the contrary, only 21 percent of women aged 15-59 years in the

same rural areas were engaged in paid work in comparison to nearly 68 percent of the men. As regards the urban areas, about 91 percent of women in the 15-59 years age-group participated in unpaid domestic work as against 38 percent of men in household. On the other hand, about 19 percent of women in the same age-group are found to have participated in paid work as against 72 percent of the urban men. We have specified the ratio of percentage of participation in a day in paid to unpaid activities irrespective of whether it is a major activity or not (considering all the activities in a time slot) for women and men in individual states. These ratios of paid to unpaid work participation are separately provided for the rural and urban areas of each state in Figure 5 and 6, respectively. Since the ratios are outlined by keeping the paid work participation in the numerator, indicator values of more than 1 would represent higher prevalence of paid participation and vice versa for values less than 1. A glance over Figure 5 and 6 indicates relatively higher prevalence of paid work for men and the predominance of unpaid work for women in most of the states for both the rural and urban areas. The ranking of states in terms of rural women's relative participation in paid activities finds Bihar, Jharkhand, Uttarakhand, Uttar Pradesh, Haryana, Arunachal Pradesh and Assam as the bottom ranking states, and Telengana, Tamil Nadu, Maharashtra, Gujarat and Manipur as the top ranking states. When we look over the ranking for urban women, we find that the states of Manipur, Goa, Himachal Pradesh, Telengana and Sikkim belonged to the top five ranks with better paid work participation. On the other hand, Bihar, Uttar Pradesh, Jammu & Kashmir, Assam and Uttarakhand represented the lowest ranks indicating greater unpaid work participation of the urban women. Although regional variations in women's paid versus unpaid work participation are evident across different states, a larger participation of women in unpaid domestic work is visible in almost all the states. The high participation of women from different states of India in unpaid domestic work has recently been categorized as the phenomenon of *time poverty* in the context of their labor-force participation.

(Insert Figure 5 and 6)

The classification of activities in the time use statistics is also provided according to the activities of System of National Accounts (SNA) Production, non-SNA production and other remaining activities. The activities included in the coverage of SNA production boundary are termed as SNA production activities and those which are outside the SNA production boundary but within the SNA general production boundary are termed as non- SNA production and the rest are

termed as residual other activities. The SNA production activities include i) employment in corporations, government and non-profit institutions, ii) production of goods for own final use, iii) employment in household enterprises to produce goods, iv) employment in household enterprises to provide services, v) ancillary activities and breaks related to employment, vi) training and studies in relation to employment, vii) employment-related travel, viii) unpaid trainee work and related activities, ix) unpaid direct volunteering for other households for production of goods or for production of goods/services for market/non-market units, x) unpaid community- and organization-based volunteering for production of goods or for production of goods/services for market/non-market units, xi) other unpaid work activities (other than those which are already covered in SNA or covered in non-SNA production. The non-SNA production includes i) : unpaid domestic services for household members, ii) unpaid caregiving services for household members, iii) unpaid direct volunteering for other households for production of services for the households, iv) unpaid community- and organization-based volunteering for production of services for the households, v) other activities, vi) seeking employment, vii) setting up a business viii) commuting, ix) learning, x) socializing and communication, community participation and religious practice, xi) culture, leisure, mass-media and sports practices, xii) self-care and maintenance.

The inclusion of unpaid services produced within households in the System of National Accounts (SNA) typically depends on the production boundary that accounts for the activities included for the compilation of national accounts. The domestic works of women, which consist of many unpaid services and are consumed within the household, are generally excluded from the SNA's economic production boundary. The results from TUS-2019 indicated that at the all-India level about 95 percent of rural women and 91 percent of urban women participated in the non-SNA production as against 43 percent of rural men and 36 percent of urban men in the age-group of 15 to 59 years. On the other hand, about 79 percent and 74 percent of rural and urban men as against 45 percent and 27 percent of rural and urban women participated in the SNA production in the same age-group. To focus on the divergent gap between the SNA and non-SNA work participation of men and women, we have derived the ratio of participation in SNA to non-SNA work for men and women in individual states.

Figure 7 and 8 provides these ratios separately for the rural and urban areas in each state respectively. As before, the indicator values of more than 1 indicated higher prevalence of SNA

participation and vice versa for values less than 1. One can observe a dominance of SNA work for men and the primacy of non-SNA work for women in most of the states for both the rural and urban areas. Figure 7 that provide the ranking of states in terms of rural women's work participation reveals higher proportions of Non-SNA work in the states of Bihar, Punjab, Uttar Pradesh, Kerala, West Bengal and Goa. On the other hand, Chhattisgarh, Himachal Pradesh, Manipur, Nagaland, Gujarat and Madhya Pradesh remained the states that have somewhat better proportion of SNA work among the rural women. It can be observed from the ranking of states that the Non-SNA portion remained major component of urban women's work participation in the states of Bihar, Uttar Pradesh, Uttarakhand, Punjab, Haryana and Jammu & Kashmir (Figure 8). On the contrary, the SNA portion of urban women's work participation remained somewhat better in the states of Goa, Manipur, Chhattisgarh, Himachal Pradesh, Andhra Pradesh and Meghalaya.

(Insert Figure 7 and 8)

## 5. Women's Participation in Work and Family:

There has been some remarkable transformation that has happened over the years in the respect of women's participation in the global labor market, and needless to say the educational attainment has remained the major driver for this transformation. The Time Use Survey of 2019 recorded the participation and time spent of respondents in nine different time use activities. The major divisions of the TUS activity classification were categorized following the International Classification of Activities for Time Use Statistics (ICATUS 2016). The nine major division of the activities used in collection of information on time use are: 1) Employment and related activities, 2) Production of goods for own final use, 3) Unpaid domestic services for household members, 4) Unpaid caregiving services for household members, 5) Unpaid volunteer, trainee and other unpaid work, 6) Learning, 7) Socializing and communication, community participation and religious practice, 8) Culture, leisure, mass-media and sports practices, and 9) Self-care and maintenance. We have analyzed the participation rate (percentage of persons who participated in different activities during the reference period of 24 hours) for the persons of age from 15 to 59 years in different states.

It is commonly agreed upon that women of both the rural and urban origin in India are engaged in multiple forms of work that covers a substantial amount of production of goods for own

final use and unpaid domestic services. Thus, to understand the determinants of women's labor market engagement, one has to look beyond the gender differences in the participation of employment and related activities. We have therefore worked out the women-men disparity ratios in the participation of activities for own-use production and unpaid domestic services for household members. These ratios can effectively capture whether women in specific states of India participate disproportionately more in the production of goods for own final use and unpaid domestic services. The TUS activity group titles along with their codes under the division: 2) Production of Goods for Own Final Use constitutes 21) agriculture, forestry, fishing and mining for own final use, 22) making and processing goods for own final use, 23) construction activities for own final use, 24) supplying water and fuel for own final use, 25) travelling, moving, transporting or accompanying goods or persons related to own-use production of goods. Whereas, the division 3) Unpaid Domestic Services for Household Members include 31) food and meals management and preparation, 32) cleaning and maintaining of own dwelling and surroundings, 33) do-it-yourself decoration, maintenance and repair, 34) care and maintenance of textiles and footwear, 35) household management for own final use, 36) pet care, 37) shopping for own household members, 38) travelling, moving, transporting or accompanying goods or persons related to unpaid domestic services for household members and 39) other unpaid domestic services for household members.

Figure 9 and 10 provides the disparity between the participation rates of women and men in between the age of 15 and 59 years for the production of goods for own final use and unpaid domestic services in rural and urban household members, respectively. As before the parity indices - that captures the disparity between women-men participation in production of goods for own final use and in unpaid domestic services for household members - have been defined keeping the participation of women in the numerator. Thus, the indicator values of more than 100 would represent higher participation of women, and less than 100 would mean their lower participation in individual states. The separate rankings of rural and urban areas indicate that women's participation remain higher than the men in the production of goods for own final use and more so in unpaid domestic services across individual states. Thus, the participation of rural women remained higher for 19 out of 30 states in our sample in the production of goods for own final use. It is only in the 10 states, viz., Assam, Arunachal Pradesh, Mizoram, Nagaland, Sikkim, Telengana, Karnataka, Bihar, Uttar Pradesh and Punjab that the participation of men has been found to be higher in rural areas.

As regards the participation in the urban areas, 26 out of 30 states indicated higher female participation in the production of goods for own final use, with the exception of 4 states like Sikkim, Meghalaya, Bihar and Uttar Pradesh. On the contrary, as the participation in unpaid domestic services for household members is concerned, higher women's involvement is evident in all the sample states for both the rural and urban areas. It is only a matter of interest that the top ranking states in female participation can be identified as Haryana, Himachal Pradesh, Jammu & Kashmir, Andhra Pradesh and Rajasthan in the rural division, and Gujarat, Rajasthan, Jammu & Kashmir, Haryana and Mizoram in the urban division.

(Insert Figure 9 and 10)

## 6. Household & Unpaid Activities as Barriers to Work:

It has often been argued that women's work participation is never fully recognized due to reasons like their greater involvement in unpaid and/or household activities and the exclusion of these activities from the SNA production boundaries. The previous sections have revealed that the participation of women in paid employment or SNA work remained much lower in several states of India. In this section we inquire as to whether the women's household and unpaid activities act as barriers to their labor market participation. Table 1 works out the rank correlation coefficient that measures the degree of similarity between the rankings of two sequences.

**Table 1: Spearman's Rank Correlation Coefficient of Female-Male Disparity Ratio in WPR and Participation in Different TUS Activities**

Correlation of Disparity in Female Male Worker Population Ratio with:	Disparity in Female Male Participation in Employment and Related Activities	Disparity in Female Male Participation in Production of Goods for Own Final Use	Disparity in Female Male Participation in Unpaid Domestic Services for Households
Rural	0.70	0.06	0.32
Urban	0.81	0.12	-0.04
Total	0.76	0.11	0.27

Note: The formula used for Spearman's Rank Correlation is  $r = [1 - (6 \sum d^2 / n^3 - n)]$ .

One can observe positive and high rank order correlation between the disparities in women-men worker population ratio and participation in employment and related activities. We also observe insignificant but positive correlation between the disparities in women-men worker population ratio and participation in production of goods for own final use. However, the correlation between the disparities in women-men worker population ratio and participation in unpaid domestic services turned out to be negative although insignificant for the urban households. The negative correlation could suggest that the participation in unpaid domestic services for households could be a barrier for the low worker participation ratio for the urban women.

## 7. Summary:

There already exists a great deal of discussion on the gender disparity in India's workforce and low work participation of Indian women. The recent contributions have also argued that women are the worst affected by India's unemployment crisis and the subsequent livelihood loss after the pandemic. However, there exists very little analysis that could help a better understanding of the phenomenon as to why the work participation is so poor in spite of some decent economic and social progress in the country. The time use data provides the crucial background for discovering as to how the gender roles act on the participation of both sexes in paid employment as well as their involvement in the unpaid work. The main objective of this paper is to examine the recent and first-ever comprehensive time use data on India for all the states that were released in 2020, and subsequently explore on whether the burden of unpaid work that were witnessed in many of the Indian states could be a reason for their weaker reduced labor market participation.

The estimates from the PLFS, 2018-19 once again divulged the low levels of women labor force participation in various degrees across major states of India. The parity indices of women-men work participation that were derived suggested that women's engagement in labor market remained at very low levels in majority of the Indian states. Thus, there are about 23 states, where the work participation of women remained at less than half of the level for the men. The situation however worsens in the rural-urban demarcation. It was observed that women's work participation didn't cover even half of the men's work participation in the urban areas of any of the Indian states. Our subsequently analysis on the gender specific work participation in paid and unpaid work specified greater involvement of paid work for men and the prevalence of unpaid work for women in most of

the states either for the rural or urban areas. Similarly, the prevalence of SNA work for the men and the importance of Non-SNA work for the women were observed for both the rural and urban areas in most of the states. When we analyzed the participation rate for persons in different activities, we found that women's participation in the production of goods for own final use to be higher than the men and more so in the urban areas. The characteristic participation of female in domestic and family roles also remained pronounced in their unpaid domestic services for household members. Finally, we have used the cross-sectional state-level data to provide an examination to explore on whether the observed women's greater participation in unpaid work provides the missing link for their low work participation. The negative rank correlation between the disparities in female-male worker population ratio and participation in unpaid domestic services that was observed for the urban households, could suggest that unpaid work participation could be a barrier for the low worker work participation of women in India.

It may be mentioned as disclaimers that we have not incorporated the component of care work in our analysis of women's unpaid work. The study also acknowledges that the unpaid domestic work performed by women who are not active in the labor market makes substantial family contributes in terms of their time spent in the work. In fact, there are several experts who believe that women are more involved in terms of their time spent and involvement in the unpaid care work rather than only their participation in the work. The present analysis has solely used the extent of representation by the household members, since the examination on the basis of time involvement and hours of work remained beyond the scope of this paper.

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Figure 1: State Level Female Worker Population Ratio (Rural+Urban) in India, 2018-19.

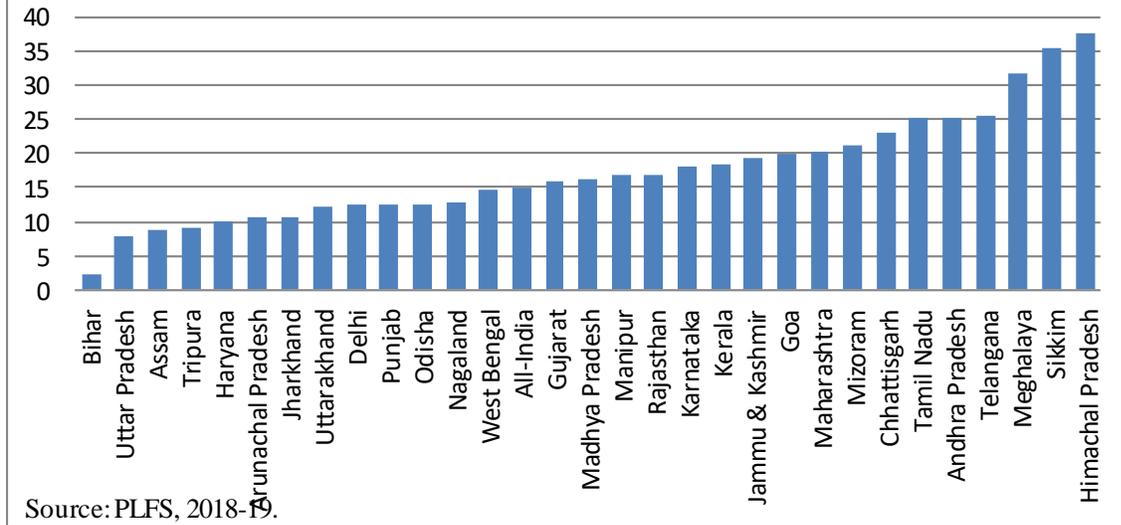


Figure 2: Disparity in Female-Male Work Participation Ratio, Rural.

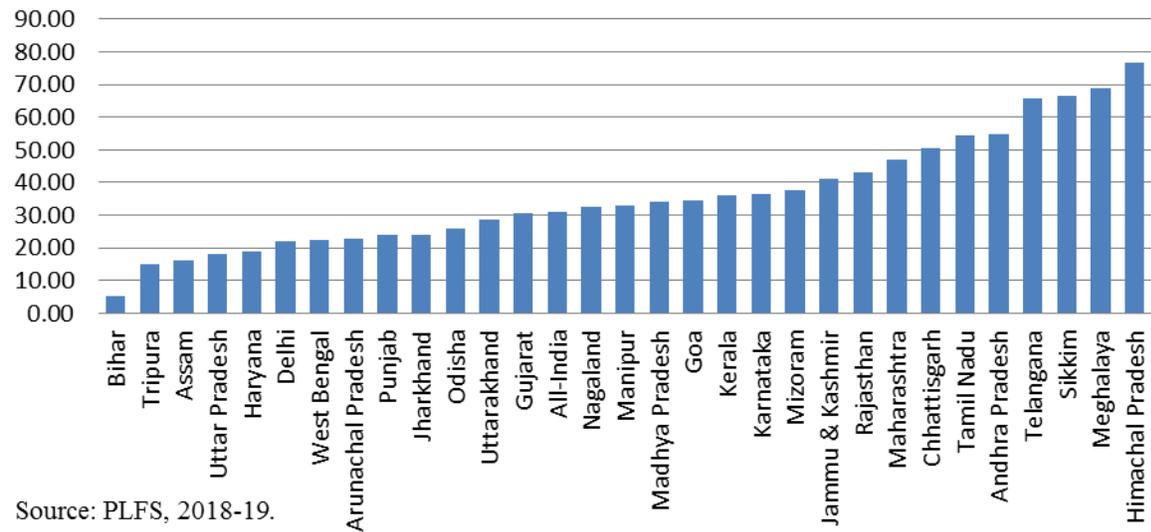
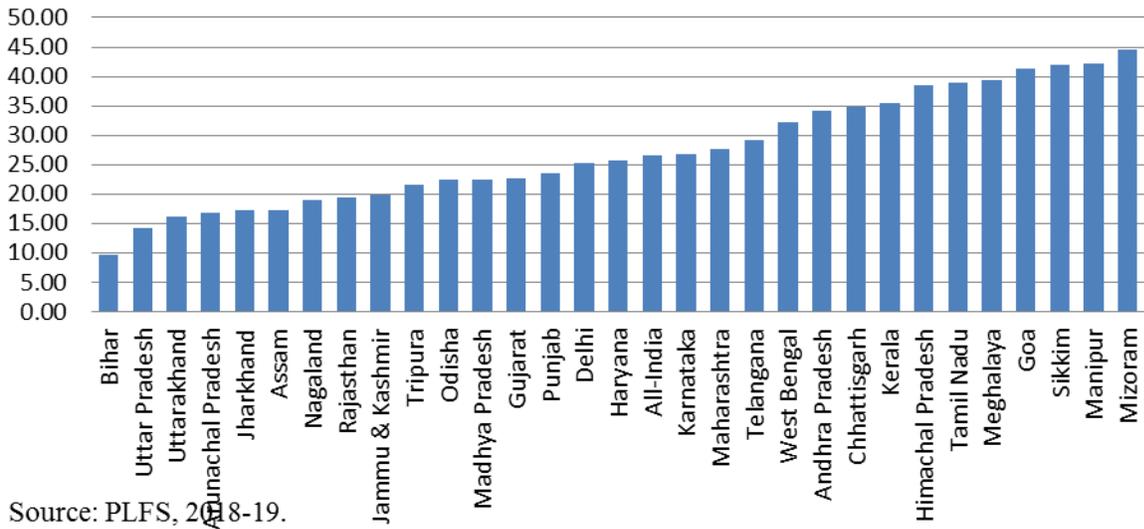
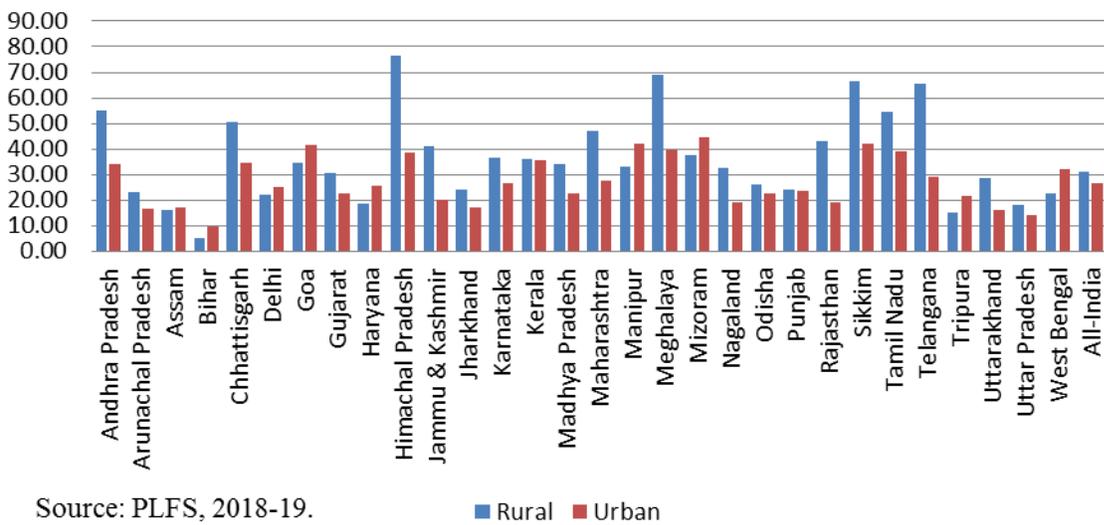


Figure 3: Disparity in Female-Male Work Participation Ratio, Urban.



Source: PLFS, 2018-19.

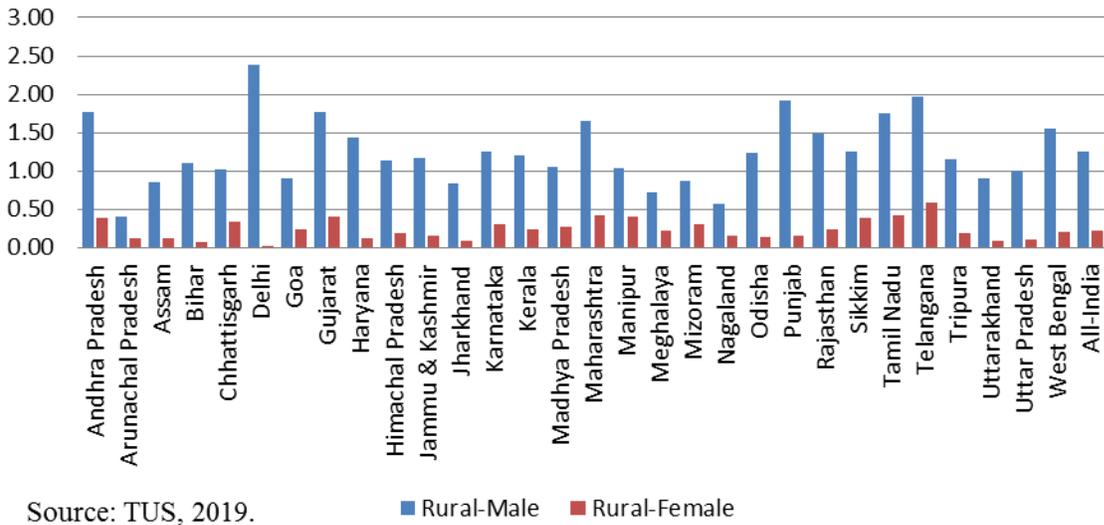
Figure 4: Disparity in Female-Male Work Participation Ratio.



Source: PLFS, 2018-19.

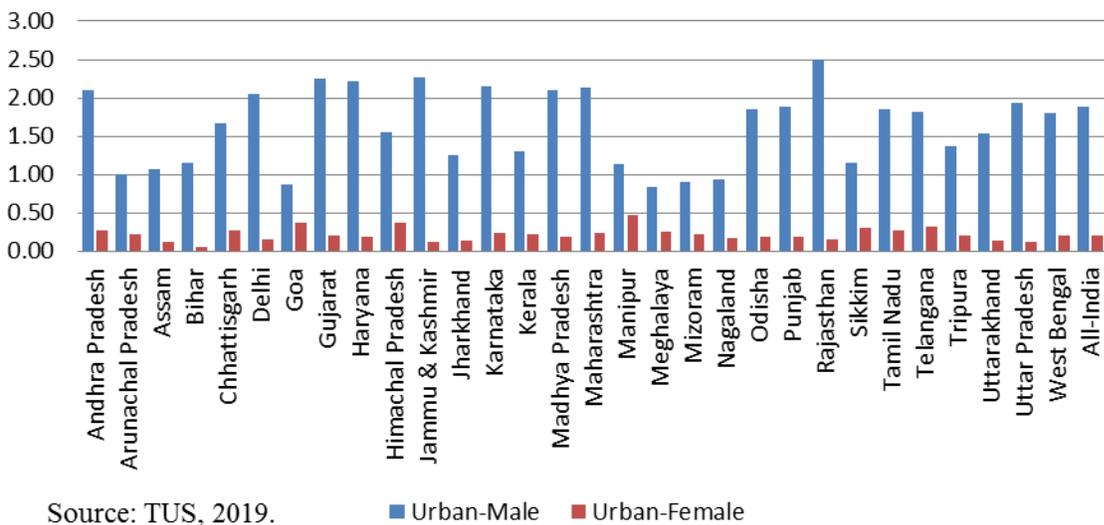
■ Rural ■ Urban

Figure 5: Ratio of Paid to Unpaid Work Participation of Male & Female, Rural.



Source: TUS, 2019.

Figure 6: Ratio of Paid to Unpaid Work Participation of Male and Female, Urban.



Source: TUS, 2019.

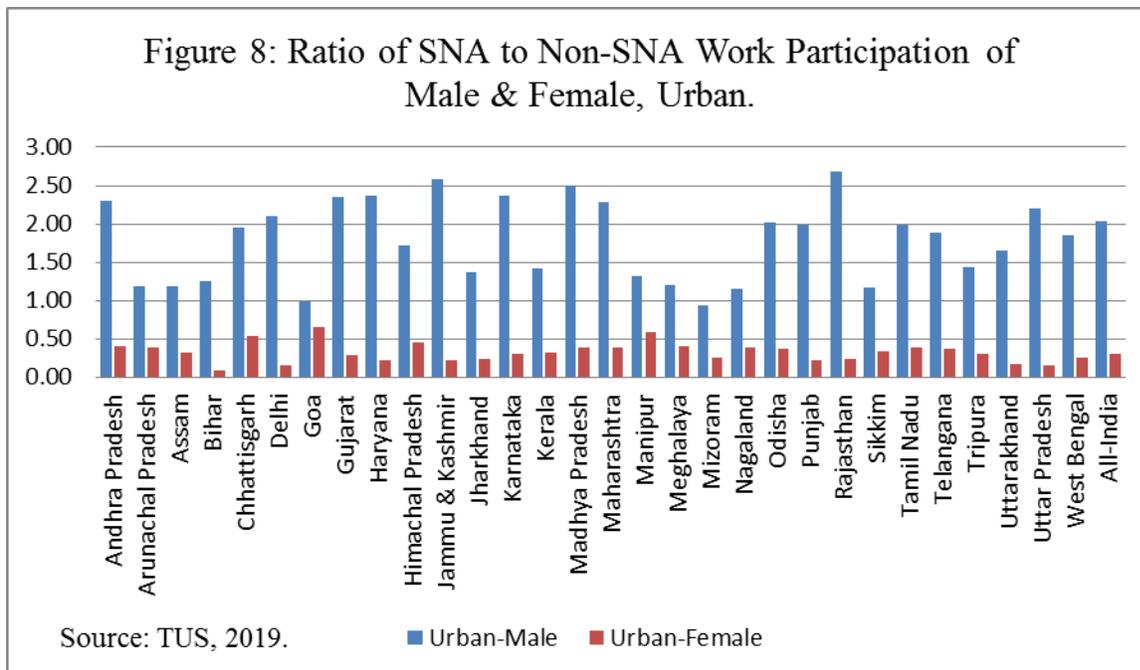
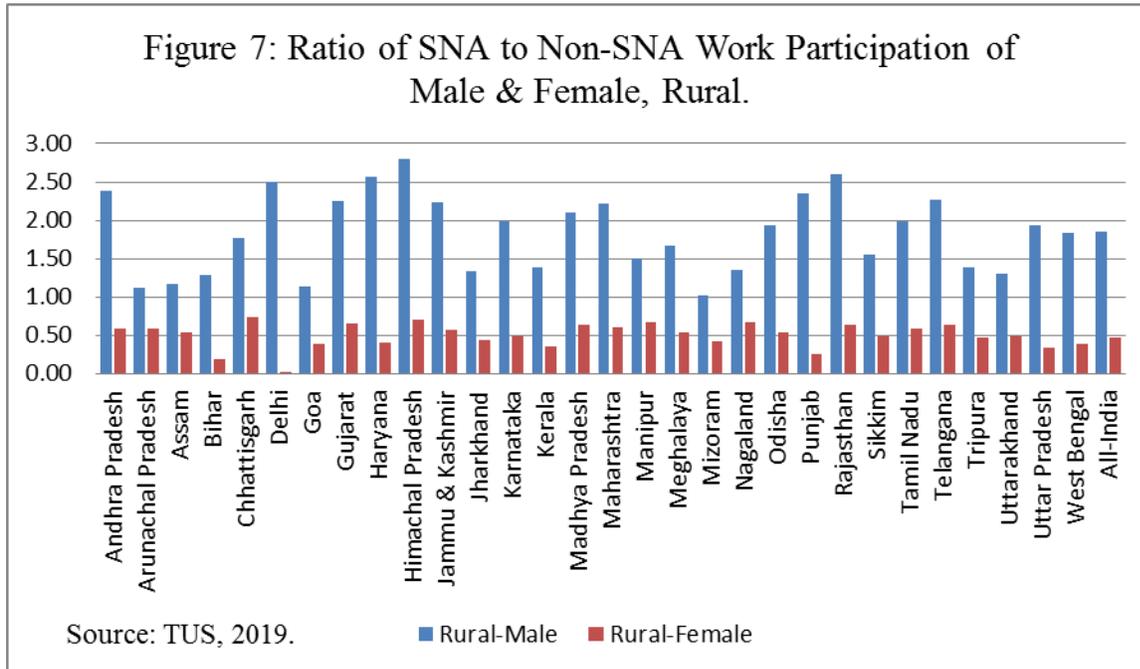


Figure 9: Disparity Ratio in Female-Male Participation in Production of Goods for Own Final Use.

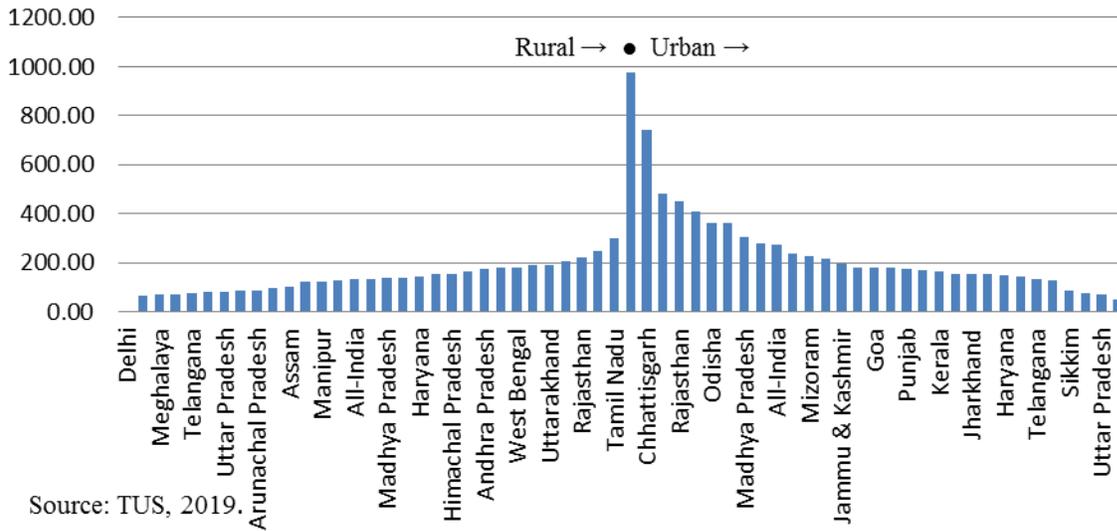


Figure 10: Disparity Ratio in Female-Male Participation in Unpaid Domestic Services for Household Members.

