

NCAER NATIONAL DATA INNOVATION CENTER  
**MEASUREMENT BRIEF 2024**  
NDIC FELLOWS PROGRAMME

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# Do Time-Use Surveys Give a Higher Estimate of Women in Economic Activity?



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## Overview and Measurement Challenge

Labour force surveys underestimate many economic activities that women engage in. The underestimation is often due to definitions and survey errors (Mehta and Pratap, 2017). A narrow definition excludes economic activities performed within the homestead such as livestock rearing, collection of firewood, cattle feed, and any unpaid contributing work in self-employment, while survey errors can arise from investigator or respondent bias. Asking the male head of the household may give incorrect data on women's activities and women themselves do not identify the economic activities they engage (Azim Premji University, 2023; Swaminathan and Usami, 2016). Respondent biases are internalised from the social norms that women are primarily responsible for household duties and child care.

Time-use surveys collect details of all activities for 24 hours on a reference day. Without a fixed definition of work, they have the advantage that they include all kinds of activities. For instance, Hirway and Jose (2011) found a difference between the numbers reported by two surveys; a pilot time use survey conducted in India in six states in 1998–99 reported that around 58 per cent of rural women engaged in economic activity as against 25 per cent in the labour force survey (LFS). The first countrywide Time Use Survey (TUS) was conducted in India in 2019.

This brief uses unit-level data from TUS 2019 to construct a definition of economic activity using the International Classification of Activities for Time Use Statistics (ICATUS 2016) to estimate women in economic activity. For the time use data collected, there was no specific definition of economic activity. 'Employment and related activities' was a division in the ICATUS 2016.<sup>2</sup>

## Method

To compare the estimates of LFS and TUS, the definitions and the reference periods need to be similar.

## KEY RESULTS



- Estimates of women in economic activity using 'employment and related activities' from TUS 2019 align closely with the estimate of the labour force survey (LFS).<sup>3</sup> Whether TUS gives a higher estimate or not depends on the construct used for estimating persons in 'economic activity.'
- Unlike using only 'employment and related activities', the constructed definition of economic activity from the TUS 2019 gives a higher estimate than LFS. TUS records all activities without asking respondents to identify if they were engaged in any economic activity. Addition of 'production of primary goods for own use' and 'construction for own use' with 'employment and related activities' resulted in a higher estimate.
- The constructed definition of economic activity from the TUS 2019 gives a higher estimate than LFS for the rural sector than the urban sector. People in rural areas engage widely in the production of primary goods for own use (agriculture, forestry, fishing, and mining), and their inclusion in economic activity leads to a higher estimate for rural men and women.

In the Periodic Labour Force Survey (PLFS), any activity that produced goods and services adding value to the national product was an economic activity (National Statistical Office, 2020b). It included the production of goods and services for pay or profit,

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2 The broad activities included in this division were employment in corporations, government and non-profit institutions, employment in household enterprises to produce goods and services for the market, seeking employment, setting up a business, and travelling for employment.

3 The labour force survey (LFS) in this brief refers to Periodic Labour Force Survey 2018-19.

production of primary commodities for own consumption, and own account production of fixed assets such as own house, roads, wells, etc.

In TUS 2019, employment and related activities and production of goods for final use were two main classifications of activities based on the ICATUS 2016 (National Statistical Office, 2020a). Production of goods for final use included agriculture, fishing, forestry and mining for own final use, making and processing goods for own final use, construction activities for own final use, and travel related to these activities (Divisions 21 to 25 in ICATUS).

PLFS did not include the processing of primary commodities for own consumption in its definition. Though TUS 2019 included the processing of goods for final use, the sub-categories mainly consisted of non-primary goods such as textiles, wood, bricks, metals, etc. (Division 22 in ICATUS 2016). To make the definitions comparable, activities related only to the primary sector under production of goods for final use are included. Agriculture, fishing, forestry, and mining for own final use (Division 21) and construction activities for own final use (Division 23) are included.

PLFS uses current weekly status (CWS) and current daily status (CDS), where CWS means a person is employed if he/she spent at least an hour a day during the reference week. If a person engaged in an econom-

ic activity for one hour or more on a day of the reference week, he/she was employed as per CDS.

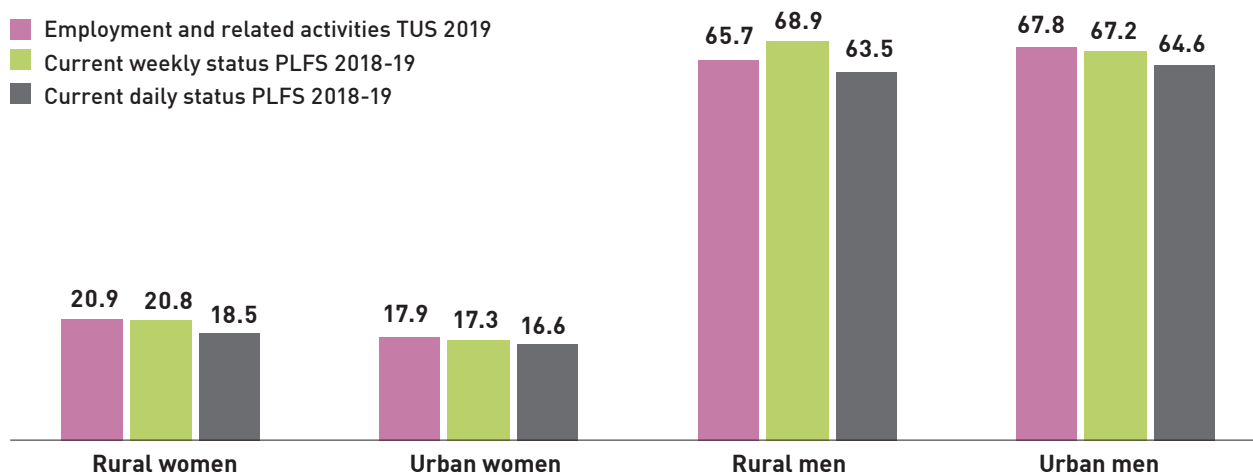
TUS 2019 collected time-use data for a reference period of a day. Individuals engaged in economic activity (according to the construct used) for at least an hour on the reference day are considered workers. This reference period is consistent with the International Labour Organisation 2013 resolution. So, the one-hour criterion on the reference day makes the reference periods comparable over both the sources.

According to the constructed definition in TUS 2019, economic activity includes participation in employment and related activities or production of goods for final use (production of primary goods or construction) for at least an hour on the reference day. This definition is consistent with the SNA production boundary of 2008.<sup>4</sup>

## Results

1. **The activity classification of ‘employment and related activities’ in TUS gives a similar estimate as the LFS.** From TUS 2019, estimating persons engaged in employment and related activities for at least an hour on the reference day gives a similar estimate to PLFS 2019. Around 20.9 per cent of rural women were engaged in employment as per TUS 2019 and it was 20.8 from the CWS of

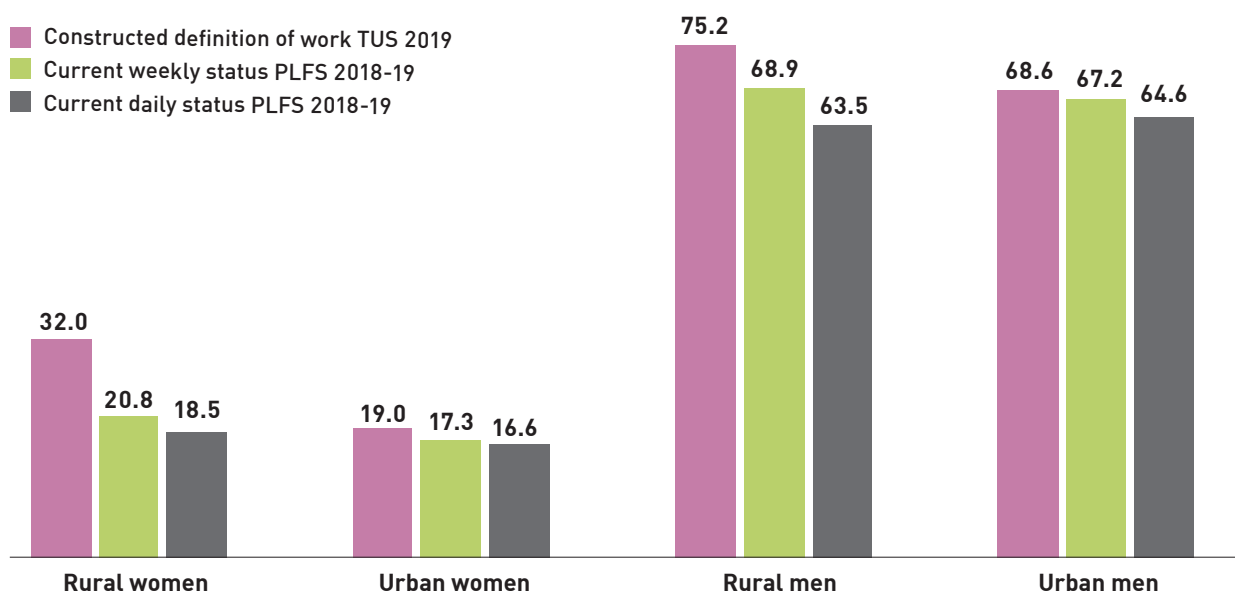
**Figure 1: Participation in economic activity from TUS and LFS for persons aged 15 and above, in per cent**



Source: Author's calculation from PLFS and TUS rounds.

<sup>4</sup> SNA production boundary includes employment (pay/profit), own use production of goods for final use, unpaid trainee work, other work activities, and volunteer work for producing goods for use by others. To make it consistent with LFS, only production of primary goods and construction for own use are included.

**Figure 2: Participation in economic activity from TUS (constructed definition) and LFS for persons aged 15 and above, in per cent**



Source: Author's calculation from PLFS and TUS rounds.

PLFS 2019. For urban women, the estimate from TUS 2019 was 17.9 per cent with 17.3 per cent from the CWS of PLFS 2019. The estimates for men across both sources are also similar, with a difference of two to three percentage points for PLFS and TUS.

2. **The constructed definition of economic activity from TUS gives a higher estimate than LFS.** The inclusion of production of primary goods and construction for own use in employment and related activities resulted in a significant increase in the estimate of TUS 2019 over PLFS 2019. Taking the example of rural women, the CWS and CDS of PLFS 2019 were 20.8 and 18.5 per cent, respectively. However, the constructed definition of economic activity from TUS 2019 showed that 32 per cent of rural women were engaged in economic activity. For rural women, the new estimate of TUS 2019 resulted in an increase of 12 to 13 percentage points over the LFS estimate.<sup>5</sup>
3. **The constructed definition of economic activity from TUS gives a higher estimate than LFS**

**for the rural sector than the urban sector.** The inclusion of production of primary goods and construction for own use makes more of a difference to the rural sector than the urban sector. For example, the constructed definition of TUS 2019 compared to CDS of PLFS 2019, resulted in an increase of 13.5 percentage points for rural women, and only around a 2.4 percentage point increase for urban women. The rural sector predominantly engages in growing crops, farming of animals, hunting, fishing, and gathering wild products for own use.

Often, time use surveys discuss the underestimation of economic activities for rural women. However, the increase in the estimate of economic activity for rural men and women from the new definition implies that men's participation in production activities for own use could be underestimated too. However, the extent of underestimation remains higher for rural women. For example, the difference between the CWS of PLFS 2019 and constructed definition of TUS 2019 was 11 percentage points for rural women but only 6 percentage points for rural men.<sup>6</sup>

<sup>5</sup> The estimates of CDS 2019 were higher than TUS 2019 for a few states. For Meghalaya and Sikkim, CDS 2019 provided higher estimates than TUS 2019 for rural women, while Goa and Meghalaya were higher for rural men (Table 1).

<sup>6</sup> There are some exceptions. Comparing TUS 2019 and CDS PLFS 2019 estimates for Andhra Pradesh, Bihar, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Odisha, Punjab, Sikkim, Tamil Nadu, Telangana, and West Bengal, the difference was higher for men than women (Table 1).

## Annexure

**Table 1: Participation in economic activity from TUS 2019 (constructed definition) and PLFS 2019 (CDS) for rural men and women above 15 years of age, in per cent**

	Rural men		Rural women	
	TUS 2019	CDS PLFS 2019	TUS 2019	CDS PLFS 2019
Andhra Pradesh	71.8	62.3	36.1	31.6
Arunachal Pradesh	72.2	62.5	44.1	14.7
Assam	82.8	72.0	25.4	10.7
Bihar	77.7	61.7	11.9	3.0
Chhattisgarh	72.0	63.3	43.8	28.8
Goa	59.9	63.7	22.7	21.2
Gujarat	81.1	75.6	44.5	22.1
Haryana	69.9	62.4	32.7	11.0
Himachal Pradesh	75.6	64.0	56.1	49.5
Jammu Kashmir	77.1	66.7	46.0	24.9
Jharkhand	74.8	63.4	24.1	14.3
Karnataka	79.4	66.7	35.0	23.2
Kerala	59.9	53.8	23.1	18.6
Madhya Pradesh	76.2	65.9	37.8	20.8
Maharashtra	75.1	62.1	40.5	27.3
Manipur	66.4	59.2	48.7	16.4
Meghalaya	72.7	73.7	32.3	49.4
Mizoram	76.6	69.3	34.7	25.3
Nagaland	64.0	59.9	44.8	19.1
Odisha	74.2	61.5	22.1	13.6
Punjab	73.2	60.4	21.8	14.9
Rajasthan	72.9	62.8	48.8	25.9
Sikkim	83.4	68.1	44.5	48.9
Tamil Nadu	72.9	58.0	39.8	29.4
Telangana	78.5	60.9	53.0	35.6
Tripura	78.4	67.7	25.9	10.0
Uttar Pradesh	74.8	61.6	28.3	10.7
Uttarakhand	68.4	60.9	43.8	16.8
West Bengal	77.3	66.5	21.6	15.2

Source: Author's calculation from PLFS and TUS rounds

## Research Design Lessons

Time-use surveys help in a better estimation of workers, yet they are not completely free of definition and survey errors (Hirway, 2022, 2023). TUS 2019 had a few drawbacks in its design and these aspects could be improved in forthcoming surveys. First, TUS 2019 omitted activities that lasted less than 10 minutes. Rural women carry out many activities lasting less than 10 minutes throughout the day that could go unrecorded. Second, respondents were asked to identify major and minor activities, but they may be subject to gender norm bias; women may identify household chores/child care over economic activities as major activities. Third, data collected from proxy respondents could be incorrect. Proxy reporting for economic activities gave higher estimates for men than women. For rural women who identified as participating in economic activity (according to the constructed definition), around 72.8 per cent was reporting by self and 27.1 per cent was proxy reporting, whereas for rural men around 61.9 per cent was self-reporting and 38 per cent was proxy reporting.

India has only one countrywide TUS, and it is important to have periodic data on the time spent by individuals in different categories. But TUS requires more resources and is expensive to administer it regularly. If TUS cannot be carried out periodically, questions on time spent on various activities could be incorporated in the LFS. Follow-up questions of economic activities important to the households asked to persons principally engaged in household work have been dropped for PLFS rounds. If it is brought back with questions on hours worked for the employed and those engaged in household work, it could be useful to estimate the participation of women in activities related to employment and production of goods for own use.

Incorporating questions on time spent is important for two reasons. If time is attached to women's activities, they weigh better than a two-step segregation of identifying economically active or not and then asking recovery questions. Second, asking probing yes/no questions, which are recovery in nature, looks at

women's economic activities in a marginalised/ subsidiary way.

## Further Reading

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## Suggested citation

R, Vijayamba (2024). “Do Time-Use Surveys give a Higher Estimate of Women in Economic Activity?”, Measurement Brief - NDIC Fellows Programme (2023-24). NCAER National Data Innovation Centre, New Delhi

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## Funding Support and Disclaimer

This research is supported by the National Council of Applied Economic Research through the NCAER National Data Innovation Centre. The views presented in this paper are those of the authors and not those of NCAER or its Governing Body. Funding for the NCAER National Data Innovation Centre is provided by Bill & Melinda Gates Foundation.

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