Understanding Women's Work Using Time-Use Statistics: The Case of India

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UNDERSTANDING WOMEN’S WORK USING TIME-USE STATISTICS: THE CASE OF INDIA

Indira Hirway and Sunny Jose

ABSTRACT

Labor force surveys have undergone several changes over the years in order to better estimate the size and understand the characteristics of the work and labor forces. It is frequently argued, however, that these surveys still tend to underestimate the workforce, particularly women and certain productive activities that they perform. By comparing the findings of the National Sample Survey Organisation’s 1999–2000 employment–unemployment survey in India with the findings of the 1998–9 pilot Indian Time Use Survey, this study shows that the latter survey has some built-in advantages that lead to improved estimates and understanding of the workforce. The case of India illustrates how a time-use survey can provide improved estimates of and better information on the workforce in a developing country, particularly capturing women’s participation in informal employment, including subsistence production. Documenting this work is important, since it is increasingly common as developing and developed economies are informalized.

KEYWORDS

Employment, female labor force participation, time use

JEL Codes: J08, J21, J22

INTRODUCTION

The United Nations System of National Accounts (UN-SNA) defines the production boundary of an economy and thereby determines what kind of market and nonmarket production of goods and services is included in the estimation of the gross domestic product or gross national income (UN 1993, 2008). Accordingly, the workforce in an economy is comprised of all those who contribute to this national production, and the labor force in an economy is comprised of those included in the workforce (who are employed), and those who do not engage in paid work but are looking for or are available or willing to work in the market (who are unemployed). It is important to examine the gender issues in workforce estimations because women form an important component of the workforce, particularly with
the gradual expansion of the production boundary to include nonmarket production of goods and services. The estimation of women’s work in informal and subsistence sectors where they are predominant, requires special effort since the nature of their activities makes it difficult to document their activities using standard labor force surveys.

Labor force surveys or household-based surveys that are designed by national governments to collect employment-related statistics in an economy. These surveys provide estimates of the employed and unemployed in the economy by carefully collecting statistics from sample households that are representative of the population. It is frequently argued that labor force surveys tend to underestimate or not document adequately the workforce and labor force, particularly women workers, and that they do not provide adequate information about the characteristics of these workers (Indira Hirway 2002; Vaskar Saha 2003; Jacques Charmes 2004; Indira Hirway and Jacques Charmes 2006; Duncan Ironmonger 2008; Devaki Jain 2008). It is also argued that time-use surveys (TUS), which collect comprehensive information on the activities performed by men and women, can provide improved estimates of the workforce, particularly the female workforce, and throw light on some of the characteristics of workers that labor force surveys do not provide (Hirway and Charmes 2006).

This study examines, at the conceptual level, why and how time-use data can add to the information provided by the conventional data on workforce, and it compares the two sets of the data on the Indian workforce, namely the 1999–2000 employment–unemployment survey of the National Sample Survey Organisation (NSSO; 2000) and the 1998–9 pilot Indian Time Use Survey (Government of India 2000), to illustrate how a TUS can provide improved estimates and better information on the workforce and particularly women’s participation in the workforce in a developing country. The Indian case study has been selected because the estimates of the workforce based on the two sources are available for comparable periods, and because of the growing concern about the underreporting of women workers in the official statistics. It needs to be added that the advantages of the Indian TUS data for estimating informal employment and subsistence production, as will be shown in this contribution, could not be fully tapped due to the limited comparability of the TUS and the NSSO classifications, as well as due to the absence of the required context variable (that is “for whom”) – which will be discussed in detail later on.

ESTIMATING AND UNDERSTANDING THE WORKFORCE

There are two ways in which labor force surveys are likely to underestimate or underreport the workforce in a developing country: first, they are not able to estimate the total System of National Accounts (SNA) work,
particularly informal and subsistence work, as they are not designed to collect certain activities covered under the production boundary of the UN-SNA. Second, they are not equipped to capture some important characteristics of the workforce.

**Estimating informal employment**

The Fifteenth International Conference on Labour Statistics (ICLS; ILO 1993) defined the informal sector as consisting of private unincorporated enterprises, meaning enterprises owned by individuals or households that are not constituted as separate legal entities,\(^1\) where some of the goods or services produced are meant for sale or barter, and the employment is below a certain threshold limit. Since this enterprise-based definition was thought to miss certain forms of informal employment, such as persons engaged in very small-scale or casual activities; single-person, own-account enterprises; or persons on the borderline between self-employment and wage employment, such as outworkers and subcontractors, the Seventeenth ICLS defined informal employment as comprising the total number of informal jobs, whether carried out in formal-sector enterprises, informal-sector enterprises, or households during a given reference period (ILO 2004).

One important characteristic of informal employment is its highly heterogeneous nature, arising from differences in technology, productivity, wages and remuneration, location of work, and terms of work, and so on. Martha Alter Chen (2004) has described this heterogeneity as a pyramid, where the top tier of workers – namely employers and micro-entrepreneurs – is overrepresented by men, and the bottom tier – which includes industrial outworkers and subcontracted home workers – is overrepresented by women. Average income or earnings decline as one moves from the top to the bottom. The informal economy consists of a variety of enterprises and workers that include own-account workers, employers in informal sector enterprises, members of informal producer cooperatives, contributing family workers, employees holding informal jobs in formal and informal sector enterprises, paid domestic workers, and own-account workers engaged in production of goods exclusively for their own final use (Ralf Hussmanns 2004). Informal employment therefore is sometimes scattered and intermittent, temporary, or short-term; and it is home-based, so it is frequently categorized with unpaid household work. It is necessary to include all of these activities within labor force data systems.

Several countries have modified their labor force surveys in order to capture the heterogeneity of informal employment by adding well-designed, probing questions to household members (unpaid family workers) and by designing establishment surveys to capture details of microenterprises. Since an establishment survey is likely to miss certain categories of single-person, own-account enterprises, which can be
identified through a household survey, several countries have linked the worker approach and the enterprise approach to measure the informal economy. In fact, as argued in Charmes’s (2004) comprehensive review, the use of establishment censuses/surveys along with household surveys, labor force surveys, or mixed surveys has emerged as an important approach for estimating informal employment in several countries, including India. Labor force surveys are the most popular, followed by mixed, other household, and establishment surveys. This review has shown that the missing data are frequently on secondary activities (multiple activities) of paid workers and on short-term informal paid work, and that there are inconsistencies in the methods of calculating the indicators.

The first major problem in measuring informal employment is that it is not always easy to distinguish between informal and household work at a conceptual level (for example, cooking for hired farm workers and cooking for the family are not easy to separate from each other, though the former is informal work and the latter is domestic unpaid work), with the result that women’s production activities are frequently hidden behind their household work. In addition, there are sociocultural biases on the part of respondents, particularly women, and on the part of interviewers that tend to underestimate women’s informal work.

Second, informal workers in developing countries frequently perform multiple jobs in a scattered manner; meaning, work is spread over time in an irregular manner. For example, a poor man may cultivate his small piece of land, look after his animals, and then go out for hired, unskilled work. Or a woman in a rural household may collect water by walking to the common source of water; clean the animal shed, milk the animal, and feed it; and work at her own farm as a helper or go to an outside farm as a hired worker. A household survey is likely to net the main job (sometimes there are no main jobs, as there are many small jobs), and one or two secondary jobs. But it is not likely to net the small multiple jobs carried out for short durations as a hired worker, own-account worker, or family worker. Again, informal workers frequently perform simultaneous activities – that is, two SNA activities at a time – such as animal grazing and collecting fuel wood. Labor force surveys do not provide data on such activities, with the result that they underestimate the work performed in the economy.

Third, multiple work-time arrangements such as part-time work, flexible work time, compressed work week, or scattered work (for home workers) are emerging in the flexible labor market in developing (and developed) countries. Another related area of inquiry is how paid workers spend their time while on the job, meaning what kind of work they perform, the breaks they take, and the time they spend on different activities while on the job (Eivind Hoffmann and Adriana Mata Greenwood 2003). Hence, labor force surveys do not adequately capture the intensity of employment or the time spent on different activities.
Estimating subsistence employment

Subsistence work, meaning production of goods for self-consumption, is now included in the production boundary of the UN-SNA. This is primarily because the goods produced for self-consumption have a market, or a potential market, and they have prices that can be used in computing their value (UN 1993). These nonmarketed goods include free collection of basic necessities (water and fuel wood, for instance); raw materials for income-generating activities (such as fodder for animal husbandry); processing of agricultural products; and other goods for self-consumption, such as dresses, footwear, poultry, utensils, and furniture. Labor force surveys find it hard to collect the data, either because it is frequently difficult to distinguish between household work and subsistence production or because the surveys are not designed to collect data on workers employed in multiple and scattered jobs of this kind.

In short, household surveys, even when well designed, are not able to call attention to the variety of informal work, including subsistence production, that exists and is increasing under the process of informalization in developed and developing countries. An important policy implication of the underreporting of informal and subsistence work is that it is difficult to design and allocate adequate funds for social security schemes for these workers.

Estimating non-SNA work

Non-SNA work or “extended economic work,” which falls outside the UN production boundaries but within the general production boundary, is important in influencing the nature and character of the SNA work of unpaid workers, who are mainly women, in the labor market. This unpaid work consists of household upkeep and management, care of children and of other household members, and voluntary services. When unpaid (women) workers with these burdens seek paid work in the labor market, they do not enjoy a level playing-field with men seeking employment. This tends to restrict their participation, mobility, and choice of employment, leading to their overcrowding in low-productivity/low-wage jobs and their overall inferior status in the paid labor market. To put it differently, the level and nature of women’s participation in the paid labor market cannot be understood well without examining the constraints posed by their unpaid work burden. However, labor force surveys do not collect data on the nature and extent of unpaid work of populations.

Can TUS help?

Can TUS help address some of these limitations and supplement the information that labor force surveys provide? TUS provide comprehensive...
information on how individuals spend their time on a daily or weekly basis on SNA activities, non-SNA activities, and personal, nondelegable services. Time-use statistics are quantitative summaries of how individuals allocate their time over a specified period – typically over 24 hours or over seven days – to different activities. With a carefully designed background module that gathers not only pertinent information on the socioeconomic and demographic characteristics of households or particular members of households, but also context variables that indicate how activities are carried out, time-use data can provide rich information about SNA activities. The context variables describe the situation (where, for whom, with whom, and so on), the activity (paid or unpaid, technology used), production organization (household unit, government, or corporation, for instance), or identify other contexts like whether the production is for sale or for self-consumption. For example, cooking for one’s own family is a non-SNA activity but cooking for customers in a restaurant is an SNA activity (use of the context variable “for whom”); or working for the government would be “formal SNA work” but working for a home-based family unit would be “informal work.” It needs to be added that though proper use of context variables can help in estimating informal and subsistence employment, not all surveys have been able to use the right context variables to capture informal employment.

A major advantage of TUS over standard labor force surveys is that they do not ask any direct question to respondents about whether they are “workers” or are engaged in any “economically productive activity.” Instead, information is collected on how respondents spend their time on different activities, including multiple and simultaneous activities, without bothering about whether the activity is “work” or “nonwork.” This information is less likely to have bias and is less likely to miss informal activities. With the help of relevant context variables and a well-designed activity classification, the data can be analyzed to determine the workforce as well as the time spent by the workforce on different SNA activities. The right context variables can help in determining whether the work is for an informal unit and performed within or outside the home (Hirway and Charmes 2006). TUS can also capture subsistence work with the help of appropriate context variables (meaning whether the activity or production is for sale or for self-consumption) and by estimating the time spent on the collection of free goods. As the Organisation for Economic Co-operation and Development (OECD; 2002) has observed, TUS are useful for estimating the subsistence sector, particularly when labor is the main input in the production process. Furthermore, OECD (2002) shows that the time spent on these activities and data on the wages together will help in valuation of subsistence output.

Since TUS collect information on how people spend their time, they are able to give details about the different activities performed by women and
men, including those activities carried out in a sporadic manner. When accompanied by pertinent employment and context-related questions, the data can be used to provide information on seasonal, temporary, part-time, and short-term SNA work. The data can also provide information on multitasking or on simultaneous activities performed by men and women when time spent in secondary and tertiary activities is also collected. Finally, an important contribution of time-use data is the information provided on the nature and extent of the burden of unpaid work outside the labor market. The unpaid work burden tends to restrict women’s participation, mobility, and their choice of work in the labor market, ultimately leading to fewer job options and lower bargaining power in the labor market (Indira Hirway 2008).

In short, TUS have the potential to overcome some of the problems and limitations of the labor force surveys in an economy. Using TUS, therefore, is a complementary way of approaching the issue of work and can serve as a check on the findings of labor force surveys. It will be useful if a national labor force survey has a TUS module, or an independent TUS is conducted when a labor force survey is conducted.

ESTIMATING AND UNDERSTANDING THE WORKFORCE IN INDIA

This empirical exercise on India explores how the Indian TUS provides improved estimates of the workforce and increased understanding of its characteristics. The empirical evidence also draws attention to the limitations of the Indian TUS in terms of not tapping its full potential to estimate and understand informal and subsistence work in India.

Over the years, both the major official sources of workforce and labor force statistics, namely, the decennial Census of Population conducted by the Registrar General of India and the NSSO employment–unemployment survey, a household sample survey, that occurs every five years, have shown improvements in estimating the labor force in India. Though the definition of “worker” has changed in these surveys, the 2001 Census (Government of India 2001) and the 1999–2000 NSSO (2000) have similar definitions of “worker”: a person is a worker if he/she is engaged in any “economically meaningful activity,” which includes subsistence activities such as looking after livestock and collecting fodder.

Since special efforts were made to improve labor force data in the 2001 Census, it gave much higher estimates of the workforce and worker population ratios (WPR) – that is, the ratio of the total workers to the total population in the country – than earlier Censuses. The increase was much higher for women than for men, and for marginal workers (meaning workers employed for less than six months during the reference year), than for main workers. However, the results are not considered fully satisfactory,
as the increases in WPR are highly uneven (results were better where efforts were intensive) and because one is not sure whether the 2001 Census has been able to remove all the hurdles in estimating the workforce accurately (Rajneesh Jain 2003). The fifty-fifth round of the NSSO (1999–2000; NSSO 2000) is also an important landmark in employment surveys in India, as it collected data on informal employment for the first time (based on the access to social security by workers). This survey also collected data on several aspects of the quality of employment, such as whether it was part-time and/or home-based (National Commission on Enterprises in Unorganized Sector [NCEUS] 2009). However, processing of agricultural products for own consumption, which is unpaid SNA work and is an important part of UN-SNA (UN 1993) has not been included in this landmark survey, as the NSSO does not consider this work to be “economic activity.” In order to capture the SNA work of housewives, the 1999–2000 NSSO survey (and subsequent surveys) asked probing questions of those respondents whose main work status was domestic duties only and those who answered domestic duties and free collection of goods like fodder, fuel wood, and water (NSSO 2000). Though the response to these questions raised the number of women in the workforce by 99.29 million women, there are likely to be some underestimations here due to the bias of respondents and of investigators (NCEUS 2009). On the whole, however, the NSSO (2000) survey provides improved estimates of the workforce, and it will be useful to compare these estimates with the estimates based on the TUS data.

Comparison of Indian workforce estimates using the 1999–2000 NSSO employment–unemployment survey data and the 1998–9 TUS data

India conducted the first official TUS on a pilot basis in 1998–9 (Government of India 2000). The results of this survey can be considered comparable with those of the 1999–2000 NSSO survey (2000), because both surveys cover periods that are consecutive and normal years in terms of the status of economic activities, including the rainfall and agricultural activities. The TUS covered rural and urban areas in six major states from six major regions in India. These states are Haryana in North India, Madhya Pradesh in Central India, Tamil Nadu in South India, Gujarat in West India, Orissa in East India, and Meghalaya in Northeast India. In other words, the selected states represented the entire country.

The TUS was conducted in four rounds to capture seasonal changes in time use. Based on multistage stratified random sampling methods, a sample of 18,591 households and 77,593 household members above age 6 was selected to cover rural and urban areas. Using the one-day recall method, interviewers collected information on how people spent the last 24 hours of a normal day and of the weekly variant day during the last week. The interviewers asked respondents the details by minutes, in an hourly
time slot, to find out how they spent the day before. The details of the time-use activities were then classified as per the activity classification.

Using the TUS data, we have compiled weekly estimates for participation and the time spent by men and women on different activities.\textsuperscript{13} The analysis here uses data for "combined states," meaning weighted averages of the six states, because the six states represent the situation for most of the parameters in all of India, such as the age and gender composition, rural–urban distribution, literacy rates, and per capita income (R. N. Pandey 2000). Though we present statewide differences in the relevant parameters whenever possible, this study does not present an in-depth analysis of the interstate differences, as its major focus is on the behavior of the overall differences between the NSSO- and TUS-based workforce estimates.

In the case of the NSSO survey, workforce estimates are made for three reference periods: one year, one week, and each day of the week.\textsuperscript{14} For the classification of persons according to current weekly status approach, we assign respondents a unique activity status with reference to the period of seven days preceding the date of the survey. We consider a person working or employed if the person was engaged in any economic activity (SNA activity) for at least 1 hour a day on any one day of the previous week. A person who has not engaged in SNA work for even 1 hour on any day of the week, but had been seeking or had been available for SNA work any time for at least 1 hour during the week, is considered seeking or available for paid work (NSSO 2000). Both the NSSO and the TUS have a common reference period of one week. In order to make the TUS workforce data comparable with the NSSO weekly status data, we estimate those who spent at least 1 hour on SNA work during the reference week under the TUS, and using these estimates, we compute comparable WPRs (with the NSSO-based WPRs) as done in Saha (2003). As mentioned earlier, WPR refers to the ratio of workers who participate in SNA activities to total population in the economy, but it does not refer to the labor force participation rate, which is a ratio of the total labor force (which includes workers and unemployed) to the total population.

The analysis here primarily deals with workforce participation rates, the ways men and women spend time, and the diversification of the SNA work of men and women under the NSSO and TUS estimates. The analysis also illuminates specific characteristics of SNA work, such as multiple jobs, subsistence work, and the sharing of total work, meaning SNA and non-SNA work by men and women, and the likely impact of sharing on women’s status in the labor market.

**Workforce participation rates using NSSO and TUS data**

Table 1 presents WPRs of men and women for workers in all age groups and both rural and urban areas from NSSO (2000) and the TUS.
### Table 1: Estimated WPR from NSSO and TUS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Rural</td>
<td>Urban</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Person</td>
<td>Men</td>
</tr>
<tr>
<td>Haryana</td>
<td>46.2</td>
<td>17.7</td>
<td>32.8</td>
<td>58.7</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>51.2</td>
<td>30.7</td>
<td>41.3</td>
<td>61.8</td>
</tr>
<tr>
<td>Gujarat</td>
<td>57.1</td>
<td>35.5</td>
<td>46.4</td>
<td>63.4</td>
</tr>
<tr>
<td>Orissa</td>
<td>52.7</td>
<td>23.3</td>
<td>37.9</td>
<td>61.7</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>56.6</td>
<td>38.1</td>
<td>47.4</td>
<td>68.4</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>55.6</td>
<td>42</td>
<td>48.7</td>
<td>58.6</td>
</tr>
<tr>
<td>Combined states</td>
<td>51</td>
<td>25.3</td>
<td>38.4</td>
<td>63.3</td>
</tr>
</tbody>
</table>

_Sources_: NSSO (2000); Saha (2003).
Table 1 shows that the TUS-based WPR is higher than the NSSO-based WPR for men and women in both rural and urban areas. The gaps between the two rates are much higher for women than for men, the WPR of women being double or more than double the corresponding WPRs under the NSSO. The highest gap between the two sets of WPR is observed in the case of urban women. Though there are some interstate differences, the above observations are applicable to all the states.

The above observations, however, do not necessarily mean that the TUS estimates are better. This is because the definition of work used in the two sources is not the same. In addition to what the NSSO survey includes, the TUS estimates include traveling time and the time spent on fetching water (Government of India 2000). However, our analysis shows that even when we exclude traveling time and the time spent on fetching water, the TUS-based WPR are still higher than the corresponding WPR based on NSSO. The reduction in the adjusted WPR is larger in the case of women than in the case of men.

Table 2 Modified TUS-based WPR as per weekly hours spent on SNA work

<table>
<thead>
<tr>
<th>States</th>
<th>Rural</th>
<th>Urban</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Total</td>
<td>Men</td>
</tr>
<tr>
<td>Haryana</td>
<td>54.77</td>
<td>52.70</td>
<td>53.83</td>
<td>52.98</td>
</tr>
<tr>
<td></td>
<td>51.78</td>
<td>47.23</td>
<td>49.72</td>
<td>52.07</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>59.41</td>
<td>49.28</td>
<td>54.63</td>
<td>54.28</td>
</tr>
<tr>
<td></td>
<td>57.23</td>
<td>43.42</td>
<td>50.72</td>
<td>53.16</td>
</tr>
<tr>
<td>Gujarat</td>
<td>61.10</td>
<td>53.82</td>
<td>57.61</td>
<td>55.98</td>
</tr>
<tr>
<td></td>
<td>60.01</td>
<td>48.95</td>
<td>54.71</td>
<td>55.42</td>
</tr>
<tr>
<td>Orissa</td>
<td>60.29</td>
<td>53.52</td>
<td>56.92</td>
<td>57.62</td>
</tr>
<tr>
<td></td>
<td>59.00</td>
<td>45.00</td>
<td>52.03</td>
<td>57.22</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>66.09</td>
<td>49.40</td>
<td>57.78</td>
<td>61.39</td>
</tr>
<tr>
<td></td>
<td>63.02</td>
<td>44.53</td>
<td>54.82</td>
<td>60.43</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>55.69</td>
<td>51.23</td>
<td>53.46</td>
<td>48.29</td>
</tr>
<tr>
<td></td>
<td>54.90</td>
<td>46.99</td>
<td>50.97</td>
<td>48.06</td>
</tr>
<tr>
<td>All states</td>
<td>60.93</td>
<td>51.31</td>
<td>56.29</td>
<td>57.41</td>
</tr>
<tr>
<td></td>
<td>59.32</td>
<td>45.42</td>
<td>52.62</td>
<td>56.61</td>
</tr>
</tbody>
</table>

**Note:** Hours worked includes all paid work activities – primary, secondary, and tertiary.

**Source:** Government of India (2000).

(Government of India 2000).
It could be argued that those respondents performing 1 hour of scattered paid work in the reference week should not be counted as workers, as they do not have any stable paid work or any stable status as workers. In order to find out whether the higher WPR under the TUS is due to such workers with “negligible attachment” to the labor force, separate WPR were calculated for respondents who spent 4 hours or more and for those who spent 8 hours or more in paid work during the reference week (Table 2). As Table 2 shows, the WPR decline as the number of hours spent on paid work increases to 4 hours or more and to 8 hours or more. However, the WPR are still higher than those reported by NSSO (2000) – except for men in Meghalaya, where the WPR for men who reported less than 8 and more than 4 hours of paid work is higher than that calculated from the NSSO (2000). In other words, even when we consider the stable and certain status of employment and include those workers who spend more than 4 hours on paid work during the reference period, the TUS-based WPR estimates are much higher than those based on the NSSO (2000) data – for men as well as women, in both rural and urban areas.

There are several reasons why the TUS-based rates are higher. First, the TUS has been able to capture multiple short-term jobs of people through its comprehensive reporting of all activities performed by men and women. The survey has also caught the simultaneous jobs, including non-SNA and SNA jobs performed at the same time. Second, there appears to be less bias in the reporting and identification of “work,” since the responsibility of identifying “work” is not with the respondents. Third, the TUS has been able to net the subsistence work of people through comprehensive reporting of all activities. Though this subsistence work (meaning production of own goods for self-consumption), including the collection of free goods such as fodder and fuel wood, is covered under the NSSO (2000) survey, it is frequently missed out when it is reported as “household work” (meaning non-SNA work). The biases that encourage women to underreport their SNA work or investigators to under-record SNA work are still present in the TUS; however, the extent of biases is likely to be minimal because activities are classified only after the survey is conducted.

**Gender gaps and interstate gaps in WPRs**

Wide gender gaps in the WPR of men and women are a major area of concern and debate in India. These gaps are attributed to sociocultural factors, such as prevailing gender norms and discriminatory practices that prevent women from participating in the labor market and/or lead to undercounting of women workers in the labor force surveys. It is therefore important to note that the gender gaps are much lower in the WPR based on the 1998–9 TUS data as compared to those based on the 1999–2000 NSSO data or the 2001 Census (see Table 3). For the combined states, the
gender gap in WPR is 11.4 percentage points under the TUS-based estimates, compared with the 28.9 and 26.2 percentage points under the NSSO- and Census-based estimates, respectively. The TUS-based estimates show that the WPR of women is higher than previously estimated using other surveys.

It is interesting to note that the gender gap in the WPR in Haryana is the highest (31.4 percentage points) as per the NSSO data, while it is the lowest (0.39 percentage points) as per the TUS-based rates. This appears to be because Haryana has well-developed agriculture and animal husbandry (dairy industry) where women’s participation as unpaid family workers is predominant. Also, women in Haryana participate in the collection of water, fuel wood, and fodder as well as in small and household-based manufacturing. Since the TUS captured this participation of women better, the gender gap declined considerably. Gujarat has the highest gender gap of 14.4 percentage points as per the TUS-based rates (this gap is much lower than the NSSO-based rate), perhaps because there are several social constraints against women’s participation in labor market work among some castes in several parts of the state.

The interstate variations in WPR of both men and women are also much lower under the TUS-based estimates. The coefficients of variations among the six states are 0.09 and 0.41 for men and women, respectively, under the NSSO-based estimates versus the corresponding rates of 0.07 and 0.11 under the TUS-based estimates. Thus, the wide variations in the NSSO-based WPR across the states appear to be more due to the limitations of the methods to capture SNA work of women and less due to sociocultural variations.

Figures 1 and 2 present the gaps in WPR based on the TUS and NSSO by age groups. The figures show that in the case of men, the gap between the two rates is the minimum, less than 3 percentage points for ages 30–50 for both rural and urban areas. The gap for ages 51–60 is slightly higher (Figure 1). However, the gaps in other age groups are much higher,
particularly among ages 5–24 and age 60 and older. That is, the paid work of those who are outside the working-age groups, meaning those below age 14 and those over age 60, is highly underestimated in the NSSO survey — perhaps because their paid work is mostly in informal-sector and family enterprises.

In the case of women’s WPR, the gaps between the rates are much larger for all age groups (Figure 2), the WPR based on TUS being larger in all age groups. This implies that women’s WPR is underestimated in all age groups in the NSSO while men’s WPR is underestimated mainly for specific age groups. The WPRs of children, both boys and girls, are much higher in the TUS-based estimates, the gap between the two rates being higher for girls. This implies higher participation of girls in subsistence and home-based informal work.

### Diversification of SNA activities between broad categories

Another major difference between the two sets of data concerns the degree of diversification of the SNA work (Table 4). The workforce is
more diversified (in terms of percentage of workers employed in the nonprimary sectors) under the NSSO-based estimates than under the TUS-based estimates. As against 46.2 percent of the workforce employed in nonprimary sectors under the NSSO-based estimates, there is 34 percent workforce in these sectors under the TUS-based estimates. Though the total size of the workforce is larger under the TUS for all three sectors, the share of the workforce in the primary sector is larger under the TUS than under the NSSO. This is equally true for both men and women. A possible explanation is that the share of informal work is much higher in the primary sector than in the other sectors.

A careful look at the WPR of men and women and the time spent by them in the different activities highlights several points (Tables 4 and 5). To start with, men’s paid work is much more diversified than that of women in terms of the WPR as well as the time spent on nonprimary-sector activities. Compared with 43.9 percent of men employed in nonprimary sectors, only 21.5 percent of women workers are employed in nonprimary sectors. Again, men spend a higher percentage of their SNA time on nonprimary-sector activities compared with women. Secondly, within the primary sector, women are predominant in the collection of free goods and crop farming, while men are predominant in crop farming, forestry, fishery, and hunting. Women and boys are predominant in animal husbandry. In the secondary sector, women are more active in manufacturing and less in construction, while men participate more in both manufacturing and construction and spend more time on these activities than women. In the tertiary sector, men are active in services as well as in trade and business, while women are active mainly in services, largely petty services.

In terms of the time spent in SNA activities, men spend 54.65 hours on this work while women spend 30.02 hours. In other words, as compared to women, a larger proportion of men spend a longer amount of time on SNA work.

**Table 4** Percentage distribution of workers in the 1998–9 Indian TUS and 1999–2000 NSSO by industrial categories (combined states with comparable concepts of work)

<table>
<thead>
<tr>
<th>Industrial category</th>
<th>TUS 1998–9</th>
<th>NSSO 1999–2000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Primary</td>
<td>56.13</td>
<td>77.45</td>
</tr>
<tr>
<td>Secondary</td>
<td>15.11</td>
<td>9.97</td>
</tr>
<tr>
<td>Tertiary</td>
<td>28.75</td>
<td>12.59</td>
</tr>
</tbody>
</table>

*Sources: Government of India (2000); NSSO (2000).*
Subsistence work primarily includes two categories of work: production of goods for self-consumption, and collection of free goods from common or other resources. Poor households and mainly women collect free goods like water, fuel wood, vegetables, fruits, and leaves for meeting basic needs, and they gather fodder, wood, and raw material for family livelihood. These activities are time-consuming, particularly with the increasing depletion and degradation of common property resources in India (Planning Commission 2007). Table 6 shows that about 41.56 percent of rural and urban women participate in these activities, compared with only 7 percent of men. The average weekly time spent on these activities is also much longer (6.11 hours) for women than for men (0.97 hours). The three activities where the participation, as well as the time women spend, is very high are: fetching water (1.64 weekly hours), collecting fuel wood (1.59 weekly hours), and fetching fodder (1.38 weekly hours). It is worth noting that women’s participation in these activities is more than six times that of men.

**Table 5** Diversification of SNA activities and hours men and women spent on SNA work

<table>
<thead>
<tr>
<th>SNA activities</th>
<th>Participation rates</th>
<th>Weekly time spent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Primary activities</td>
<td>56.13</td>
<td>77.45</td>
</tr>
<tr>
<td>Crop farming, kitchen gardening, stocking and transporting, sale and purchase for crop farming, and other related activities</td>
<td>37.00</td>
<td>29.54</td>
</tr>
<tr>
<td>Animal husbandry</td>
<td>23.36</td>
<td>30.33</td>
</tr>
<tr>
<td>Fishing, forestry, horticulture, and gardening</td>
<td>4.06</td>
<td>4.03</td>
</tr>
<tr>
<td>Fetching of fruit, water, fuel wood, fodder, plants, and other raw materials for craft and building materials; storage and hunting</td>
<td>8.40</td>
<td>39.08</td>
</tr>
<tr>
<td>Processing and storage</td>
<td>1.14</td>
<td>5.46</td>
</tr>
<tr>
<td>Mining, quarrying, digging, cutting, storage, stocking and related sales and purchase</td>
<td>1.57</td>
<td>0.66</td>
</tr>
<tr>
<td>Secondary activities</td>
<td>15.11</td>
<td>9.97</td>
</tr>
<tr>
<td>Construction activities</td>
<td>4.96</td>
<td>1.56</td>
</tr>
<tr>
<td>Manufacturing activities</td>
<td>8.38</td>
<td>8.48</td>
</tr>
<tr>
<td>Tertiary activities</td>
<td>28.75</td>
<td>12.59</td>
</tr>
<tr>
<td>Trade and business</td>
<td>10.30</td>
<td>2.72</td>
</tr>
<tr>
<td>Services</td>
<td>20.62</td>
<td>12.06</td>
</tr>
<tr>
<td>Community-organized construction/repairs</td>
<td>0.07</td>
<td>0.13</td>
</tr>
<tr>
<td>SNA activities combined</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


**PREDOMINANCE OF WOMEN AND GIRLS IN SUBSISTENCE WORK**

Subsistence work primarily includes two categories of work: production of goods for self-consumption, and collection of free goods from common or other resources. Poor households and mainly women collect free goods like water, fuel wood, vegetables, fruits, and leaves for meeting basic needs, and they gather fodder, wood, and raw material for family livelihood. These activities are time-consuming, particularly with the increasing depletion and degradation of common property resources in India (Planning Commission 2007). Table 6 shows that about 41.56 percent of rural and urban women participate in these activities, compared with only 7 percent of men. The average weekly time spent on these activities is also much longer (6.11 hours) for women than for men (0.97 hours). The three activities where the participation, as well as the time women spend, is very high are: fetching water (1.64 weekly hours), collecting fuel wood (1.59 weekly hours), and fetching fodder (1.38 weekly hours). It is worth noting that women’s participation in these activities is more than six times that of men.
The other subsistence work includes grazing animals; making dung cakes; collecting, storing, and stocking fruits; cutting wood; and stocking firewood. These activities involve drudgery and have low productivity. According to the TUS, many young boys participate in animal grazing, while girls and women participate in making dung cakes and in chopping and storing firewood. About 10 percent of women and 6 percent of men participate in these activities and, on average, spend 2.50 and 1.50 hours, respectively, in these activities. The overall predominance of drudgery in subsistence work leaves limited time for women to participate in productive activities in the labor market.

### Multiple activities of men and women workers

An important characteristic of the workforce in India, as in other developing countries, is the multiple activities performed by workers. For example, a man may work on his farm and then as hired labor on another’s farm, or he may migrate to an urban area to work on construction of roads or in a small factory. Or, a woman may tend animals at home, then work on the family farm and then as hired labor on others’ farms, or she may work as a domestic servant. Workers may take up multiple jobs because one job does not provide enough employment (for example, a small field does not need more than one full-time worker, or a cow or two does not need full-time work); one job does not earn enough income for survival; a person

---

### Table 6: WPR and weekly hours men and women spent in collection of fuel wood, fodder, water, and other raw materials

<table>
<thead>
<tr>
<th>Name of activities</th>
<th>WPR for men</th>
<th>WPR for women</th>
<th>Time spent by men</th>
<th>Time spent by women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fetching of water</td>
<td>1.08</td>
<td>22.87</td>
<td>0.05</td>
<td>1.64</td>
</tr>
<tr>
<td>Fetching of fruits, vegetables, berries, mushrooms, leaves, and other such products</td>
<td>0.90</td>
<td>11.61</td>
<td>0.09</td>
<td>1.49</td>
</tr>
<tr>
<td>Fetching of minor forest produce, bamboo, wood, and other such products</td>
<td>0.58</td>
<td>1.67</td>
<td>0.11</td>
<td>0.15</td>
</tr>
<tr>
<td>Fetching of fuel and wood/twigs</td>
<td>0.46</td>
<td>15.74</td>
<td>0.08</td>
<td>1.59</td>
</tr>
<tr>
<td>Fetching of raw material for crafts</td>
<td>1.96</td>
<td>4.80</td>
<td>0.16</td>
<td>0.45</td>
</tr>
<tr>
<td>Fetching of building materials</td>
<td>0.03</td>
<td>0.06</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Fetching of fodder</td>
<td>1.68</td>
<td>12.11</td>
<td>0.18</td>
<td>1.38</td>
</tr>
<tr>
<td>Other activities</td>
<td>1.26</td>
<td>1.89</td>
<td>0.19</td>
<td>0.22</td>
</tr>
<tr>
<td>Sale and purchase related activities</td>
<td>0.14</td>
<td>0.12</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Collecting building material and material for craft</td>
<td>0.94</td>
<td>2.31</td>
<td>0.08</td>
<td>0.16</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>7.04</td>
<td>41.56</td>
<td>0.97</td>
<td>6.11</td>
</tr>
</tbody>
</table>

Source: Calculated from TUS (Government of India, 2000).
does not have enough skills or education to access a full-time job; or a person does not have access to funds to expand the present activity into a full-time activity. There are several disadvantages of undertaking multiple jobs: to start with, performing multiple jobs does not help a person acquire specialization or acquire skills in any one job. Second, the person performing multiple jobs remains in low productivity and low earning activities, and third, it may be difficult to move upward in the labor market due to a preoccupation with too many activities. It is important to understand the extent and nature of such multiple jobs in order to design approaches to reduce their prevalence.

Table 7 shows that the percentage of workers performing only one SNA activity is quite small, 15.17 percent for men and 28.85 percent for women. Performing two activities is, however, very common, with half of working men and 34 percent of working women performing two activities. Again, women’s share is higher (35.06 percent) than that of men (30.89 percent) among the workers performing more than three activities, with 5.37 percent of women workers performing more than five SNA activities. By and large, about one-third of working men and 40 percent of working women in India perform three or more SNA activities. It needs to be noted that the incidence of multiplicity of work is higher for women in spite of their lower WPR and shorter hours in the labor market.

Some interesting patterns emerge across the states. In Tamil Nadu and Orissa, about 36.8 and 32.8 percent of women, respectively, take up one activity, compared with men in each state (17.2 and 26.6 percent, respectively). At the same time, a relatively smaller proportion of women take up more than two activities. In Haryana, however, less than 20 percent of women take up one activity, while more than 20 percent take up more than five activities. As seen earlier, this could be largely due to the predominance of agriculture and animal husbandry as well as family

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th></th>
<th></th>
<th></th>
<th>Women</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3-5</td>
<td>&gt; 5</td>
<td>1</td>
<td>2</td>
<td>3-5</td>
<td>&gt; 5</td>
</tr>
<tr>
<td>Haryana</td>
<td>10.78</td>
<td>45.69</td>
<td>38.55</td>
<td>4.99</td>
<td>17.97</td>
<td>19.30</td>
<td>42.51</td>
<td>20.22</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>8.94</td>
<td>40.34</td>
<td>45.70</td>
<td>5.02</td>
<td>25.66</td>
<td>37.09</td>
<td>34.53</td>
<td>2.72</td>
</tr>
<tr>
<td>Gujarat</td>
<td>13.59</td>
<td>55.03</td>
<td>28.73</td>
<td>2.66</td>
<td>23.58</td>
<td>29.40</td>
<td>39.74</td>
<td>7.28</td>
</tr>
<tr>
<td>Orissa</td>
<td>26.59</td>
<td>45.00</td>
<td>27.60</td>
<td>0.81</td>
<td>32.81</td>
<td>34.42</td>
<td>32.18</td>
<td>0.60</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>17.27</td>
<td>56.13</td>
<td>24.77</td>
<td>1.83</td>
<td>36.76</td>
<td>34.25</td>
<td>27.59</td>
<td>1.40</td>
</tr>
<tr>
<td>Meghalaya</td>
<td>8.50</td>
<td>25.82</td>
<td>61.27</td>
<td>4.41</td>
<td>23.05</td>
<td>28.93</td>
<td>43.47</td>
<td>4.55</td>
</tr>
<tr>
<td>Combined states</td>
<td>15.17</td>
<td>49.00</td>
<td>32.89</td>
<td>2.94</td>
<td>28.85</td>
<td>30.71</td>
<td>35.06</td>
<td>5.37</td>
</tr>
</tbody>
</table>

Source: Calculated from TUS (Government of India, 2000).
enterprises in Haryana, all of which require women’s participation in multiple jobs.

### Unpaid non-SNA work by women

Unequal sharing of unpaid domestic work between men and women serves as a major constraint for women in the labor market. An analysis based on the thirty-second (1977–8; NSSO 1978) and thirty-eighth (NSSO 1983) rounds of the NSSO employment–unemployment survey reveals that 90 percent of women who did not participate in the workforce attributed a “pressing need for domestic work” as the primary cause for their nonparticipation (Amitabh Kundu and Mahendra Premi 1992). Yet standard labor force surveys such as the NSSO surveys do not provide any data on unpaid domestic work, which includes household cooking, washing, cleaning, and shopping and the care of household members, such as children, the elderly, and the sick.

Table 8 shows that women, on average, spend about 25 hours per week on household cleaning, washing, and taking care of textiles, including ironing and repairing clothes, and they spend about 4 hours per week on household management activities such as cooking, washing, cleaning, and shopping. In contrast, men spend 2.11 hours per week on these activities. Regarding childcare and care for the elderly, sick, or disabled in the household, women spend 4.47 hours per week while men spend 0.88 hours per week. The maximum time women spend per week on any activity is on physical care for children (3.09 hours).

The disproportionately high burden of unpaid work on women (about 34 hours per week) has important implications for women’s access to and

### Table 8 Average weekly hours men and women spent on household maintenance and care

<table>
<thead>
<tr>
<th>Household maintenance</th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooking, cleaning, washing, care of textiles, and household upkeep</td>
<td>0.96</td>
<td>24.79</td>
<td>12.53</td>
</tr>
<tr>
<td>Shopping, home improvement, and pet care</td>
<td>0.93</td>
<td>3.95</td>
<td>2.38</td>
</tr>
<tr>
<td>Travel related to these activities</td>
<td>0.22</td>
<td>0.21</td>
<td>0.22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.11</strong></td>
<td><strong>28.95</strong></td>
<td><strong>15.13</strong></td>
</tr>
<tr>
<td><strong>Care</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical care of children and teaching or training of children</td>
<td>0.43</td>
<td>3.2</td>
<td>1.77</td>
</tr>
<tr>
<td>Accompanying children places</td>
<td>0.37</td>
<td>0.95</td>
<td>0.66</td>
</tr>
<tr>
<td>Total adult care (physical and other)</td>
<td>0.04</td>
<td>0.23</td>
<td>0.14</td>
</tr>
<tr>
<td>Travel and miscellaneous care</td>
<td>0.04</td>
<td>0.1</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0.88</strong></td>
<td><strong>4.48</strong></td>
<td><strong>2.64</strong></td>
</tr>
</tbody>
</table>

*Source: Calculated from TUS (Government of India, 2000).*
status in the labor market. Since unpaid work has no cash rewards, and given the dominant patriarchal values in India, women have a lower status in the household and in Indian society at large that is reflected in their lower status in the labor market. The unequal sharing has left less time and energy for women to take part in the productive work in the labor market, resulting in their lower WPR and less time spent on SNA work. With less time left for education, capacity building and low mobility, women are predominant in unpaid SNA work, as well as in low-productivity activities. In addition, patriarchal values along with low human capital have resulted in poor diversification of work for women as compared to that for men. And finally, the higher burden of total work (Table 9), along with less time for rest, sleep, and recreation has resulted in poor health for women (Planning Commission 2002).

Table 9 presents the stark gender inequalities in time use, including sharing of both paid and unpaid work. A striking feature of the table is the highly unequal distribution of unpaid work between men and women and the higher burden of total work on women – both of which have seriously impacted the nature and extent of men’s and women’s participation in SNA work. It is clear that gender equality cannot be established in the Indian labor market without addressing these inequalities.

**CONCLUDING REMARKS**

The above analysis has shown that the size of the workforce in India is much bigger than what was estimated by the 1999–2000 NSSO (2000) survey. We can state that the additional workforce captured through the 1998–9 TUS (Government of India, 2000) is reported either as outside the workforce or as unemployed under the 1999–2000 NSSO. This analysis of the Indian
time-use data has also shown that the TUS-based WPR are much higher for both men and women than the NSSO-based WPR as well as the WPR based on the 2001 Census of Population (Government of India 2001). This is primarily because of the built-in advantages of the TUS.

This contribution has shown that TUS have several advantages in terms of calculating workforce participation and understanding characteristics of the workforce in a developing country. TUS data provide crucial information regarding the level and nature of women’s and men’s participation in the workforce that complement those provided by labor force and household surveys. Since TUS can provide detailed information on what a person does in a given time period, it collects data on multiple jobs as well as simultaneous jobs performed by men and women and can capture the scattered, sporadic, and flexible, paid and unpaid work performed by informal workers.

The 1998–9 TUS, however, does not provide separate estimates of informal and subsistence employment in India because of some limitations of the survey. To address concerns about the limited comparability of the classifications used in both surveys, as well as the need for additional context variables, the Government of India set up the Committee for Developing National Classification of Activities for Time Use Studies to design a comparable classification of time-use activities. This committee has now submitted its report and the new comparable classification will be implemented in future TUS. This new classification will allow estimations of informal and subsistence production employment since the future Indian TUS will incorporate the contextual variable, “for whom,” in order to collect information on whether an activity is performed for the government, for a private corporation or company, cooperative, household unit, or for another informal unit. That is, future Indian TUS will acknowledge whether the activity is performed for a formal unit or an informal unit. Another context variable, “whether the activity receives any social protection” has also been added to identify informal employment in the formal sector (Indira Hirway and Hiranya Borah 2011).

The TUS-based WPR also shows much smaller gender gaps and lower interstate disparities and lower diversification of the workforce in terms of its share in the nonprimary sector. With regard to women’s employment, the TUS shows that the time women spend on SNA work, on average, is almost half what men spend. Work by women appears to be more scattered and to involve multiple jobs, and women’s burden of unpaid work is a constraint on their access to opportunities in the labor market. In short, the TUS has provided useful supplementary information on the labor force in India.

The Indian TUS, however, is not able to provide separate estimates of informal employment and subsistence employment, mainly because it did not use the relevant context variables. This is a major lesson to be learned from the pilot Indian TUS.
Policy implications

Women are predominant in subsistence production and informal employment in both rural and urban areas. Their work is frequently scattered, sporadic, and poorly diversified, and they spend long hours on unpaid SNA and non-SNA work. In order to enable women to overcome these constraints and to enjoy equal opportunities with men in the labor market, we propose specific policy changes.

Addressing the unpaid work of women

There is a need to reduce and redistribute unpaid work by providing basic infrastructure and services such as water supply and energy at the doorstep; organizing universal childcare facilities, including daycare, at affordable prices through cooperation between the government, employers, the market, and civil society organizations; improving technology to reduce the drudgery of household work and bringing unpaid domestic work within the realm of government technology policy; and promoting egalitarian values that support equal sharing of unpaid work between men and women. Designing employment programs for women without paying attention to their unpaid work will only increase their burden of work, which can have a negative impact on women’s well-being and human capital.

Increasing women’s skills and productivity

Since women lag far behind men in skills and productivity, special programs need to be designed for improving their skills, so as to enable them to access better opportunities in the labor market.

Creating opportunities for women to diversify their SNA work

In order to promote diversification of the work women do within and outside the primary sectors, it is necessary to design special programs to enable women to enter new sectors as wage earners as well as entrepreneurs. Special efforts are needed to improve women’s access to credit, skills, marketing, and other infrastructure facilities.

Environmental policymaking

An important policy implication that this study calls attention to is the need to improve management of natural resources to ensure adequate supplies of water, fuel wood, and fodder to meet the basic needs of the population. There is a need to prevent depletion and degradation of resources and to promote their regeneration. Since the livelihood of the poor, including
women, depends largely on the primary sector and therefore on natural resources, there is an additional reason to promote regeneration of natural resources in the economy through suitable policies. There is also a need to promote macroeconomic policies that lead to “decent work” and employment generation.\(^\text{17}\)

Systematic collection of TUS data

On the statistical side, our major policy recommendation is to conduct TUS to acquire more accurate estimates and improved understanding of the workforce in India. Since TUS supplement labor force surveys, it is important that either a TUS module is added to the forthcoming labor force surveys, or an independent TUS is implemented when a labor force survey is conducted.

\begin{flushright}
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NOTES

\begin{enumerate}
\item Private unincorporated enterprises include unincorporated enterprises owned and operated by individual household members or by several members of the same household, as well as unincorporated partnerships and cooperatives formed by different households, if they lack a complete set of accounts; that is, they do not compile and submit formal accounts of their respective enterprises.
\item Charmes (2004) has observed that due to the multiple approaches of different countries, it is not possible to have cross-country comparability of estimates of the informal economy.
\item Charmes (2004) has also observed that compilation and calculation of harmonized indicators and estimates still remain difficult and hazardous in the sense that the data are noncomparable and lead to wrong conclusions.
\item This point, however, is not explored empirically due to lack of data.
\item SNA activities are those activities that fall within the production boundary of the UN-SNA.
\item Non-SNA activities are not included in national accounts but are contained under the general production boundary. They include all delegable production of services not covered under the national income accounts.
\item Personal services are nondelegable services, meaning those services that cannot be delegated to others such as sleeping and watching TV.
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The pilot Indian Time Use Survey (Government of India 2000) did not use the required context variables, with the result that it is unable to provide exact estimates of informal workers in the economy.

In response to the limitations of the Indian Census of Population in capturing realistic data on workforce/labor force, several changes were introduced in the 1991 and 2001 Censuses to improve this data collection. Apart from adopting a new definition of “worker,” the 2001 Census put special emphasis on collecting information on unpaid economic work on farms and family enterprises and in informal sector. The NSSO also has tried persistently to collect accurate data on workforce/labor force. A major landmark in this context was 1972–3, when the NSSO introduced the three concepts of usual status, current weekly status, and daily status of employment along with four rounds of employment surveys to capture seasonal changes. In 1977–8, the NSSO first introduced a probing question for all those respondents who reported activity status code 92 (domestic work) and 93 (domestic work with free collection) as their main activity (Rajneesh Jain 2003). These questions tried to find out women’s productive activities as well as their accurate labor market status. In the later rounds, the NSSO continued these efforts and even included collection of time-use data. However, the NSSO has not analyzed these time-use data.

The NSSO also conducted an independent informal sector survey of enterprises in 1999–2000 (NSSO 2000).

NSSO (2000) tried to record intermittent and scattered nature of work on fourteen half-days of the week (NCEUS 2009). This labor force survey uses a person as its unit of classification, and it applies priority criteria or major time criteria to record workers. Also, this labor force survey regards subsistence work – like production of primary products for own consumption, including collection of fruits and vegetables – as “economic activity.”

Indira Hirway headed the technical committee set up by the Government of India to design the survey and methodology and develop a scheme of analysis for the time-use data.

We have observed that the concept of a weekly day off from paid work does not exist in most places (people work throughout the week), so we estimate the weekly time-use pattern by using 6.5 normal days and 0.5 weekly variant day in the reference week.

For the approach of classifying respondents according to current weekly status, each respondent is assigned a unique activity status with reference to the period of seven days preceding the date of the survey. This is easily done in the case of respondents who have only one status during the reference week. But for those pursuing more than one activity, we assign priority status to an activity using the major time rule to obtain a unique activity status. Under the priority rule, the status of working gets a priority over the status of not working but seeking/available for work. Within the broad category of working and nonworking, we assign the detailed activity category by the major time spent criterion. Using this procedure in the current weekly status, respondents are considered working or employed if they were engaged in any economic activity for at least 1 hour a day on any one day of the previous week.

These data can be made available on request.

The ILO recommends the term “decent work” to denote standard quality of paid work that includes payment of fair income; security in the workplace and social protection for families; better prospects for personal development and social integration; freedom for people to express their concerns, organize, and participate in the decisions that affect their lives; and equality of opportunity and treatment for all women and men (ILO 2010).
REFERENCES


