Measuring Time at Work

Interest in the length of the workweek has increased along with the number of dual earner families. The "time famine" faced by working parents has generated much research and public discussion. Research related to the amount of time workers devote to their jobs has, thus far, usually been based on data from time diaries or the standard self-reported measure of working time.

The Current Population Survey (CPS), conducted in March of each year, asks respondents to indicate the number of hours they worked last week *and* how many hours they typically worked per week *last year*. Individuals' own estimates of their time spent on the job form the basis of this data series on working time. Based on data from the CPS, researchers have concluded that the proportion of Americans who work more than 50 hours per week has increased since 1970.

Proponents of the time-diary method are skeptical of individuals' self-reports and suggest a number of reasons for miscalculations: respondents have to calculate their workweek in a few seconds; respondents may provide normatively desirable answers rather than precise information; there are ambiguities in what constitutes work (commuting time, lunch breaks, work brought home). When a group of respondents was asked to fill out time diaries as well as the standard self-reported question regarding time on the job, those who reported working 50 or more hours per week tended to exaggerate their working time—at least compared with time-diary measures. In contrast, those who reported working few hours underreported their working time.

Previous research compared individual self-reports with information from company records and found a moderately strong correlation ($r = 0.614$) with self-reports of time spent at work *last week.* A higher association ($r = 0.719$) was found with self-reports of annual hours. Also, no evidence was found that workers exaggerate their working time.

Although time diaries provide more detailed data on time use than do standard self-reported questions, an even more detailed approach to time use is the Experience Sampling Method. For this method, respondents are required to wear digital wristwatches that beep randomly for them to record their activity several times over a 1-week period. Advocates of this method maintain it avoids the recall problems of time diaries by providing more precise information about time use.

A simple measure of working time that could serve as a check on the accuracy of self-reports and, if necessary, as a substitute for them, would be of value to researchers. One possibility is to ask respondents the time they typically leave for work and the time they typically return home from work. Workers usually have good reason to remember these times. They may have an appointed time to arrive at work; they may listen to the radio or television while preparing to leave for work and thus be aware of the time; or they may commute by public transportation and need to be aware of bus or train schedules. Thus, it may be easier for respondents to specify their departure and return times than it is to estimate the amount of time they spend on the job. These departure and return times could then be used to calculate time away from home. Time away from home is not the same as time at work; nevertheless it is an important yardstick of workers' job obligations because it indicates what time is left for child care and other household responsibilities. By allowing for commuting time, lunchtime, and other breaks, research may be able to determine a measure of time at work.

Even if there were no overall tendencies for self-reports to exaggerate working time, it is possible that some groups of workers tend to overstate their workweeks, and others tend to understate their working time. Such discrepancies could result from social-psychological factors, job and demographic factors, and the reference period.

Social-Psychological Factors

Those who feel rushed on their jobs, who work with great intensity, or who believe they confront difficult deadlines frequently might inflate their reported working hours, compared with individuals who do not perceive their jobs as being so stressful. Workers who feel torn between the competing demands of home and work may also exaggerate their reports of working time.

Nature of the Job

Individuals with nonstandard or irregular schedules might make greater errors than do their counterparts with regular schedules. Those with the flexibility to set their own schedules may be more likely to err and to exaggerate the time they spend at work. In contrast, those who are unionized and have specific overtime provisions in their contracts might be less likely to exaggerate their working hours because they have precise measures of their workweek.

Demographic Attributes

Misreports might vary with age, educational level, race and ethnicity, and marital status. Predictions about the direction of these differences, however, are not obvious. For example, workers with small children might

tend to exaggerate their working time because they feel torn between job and family demands.

Reference Period

A change in the reference period provides a simple alternative to the standard question on the workweek. The standard question asks respondents to indicate the number of hours they worked last week. By asking the respondents how many hours they typically worked per week *last year*, researchers may find that the longer reference period might reduce respondents' tendencies to report very long workweeks.

The 1992 National Survey of the Changing Workforce (Workforce Survey)

This study gathered data on a wide range of work experiences, including the connections between work and family life. The analysis was based on responses from 3,059 employed individuals. The Workforce Survey asked respondents when they typically left for and returned from work and asked a supplemental set of departure and return times for respondents with split shifts. Also, respondents were asked about the duration of their commute to work as well as how many days per week they worked. A measure of time on the job can be computed that includes lunch and breaks but excludes commuting time (and work at home when applicable). This indicator is referred to as the "calculated workweek" in contrast to the self-reported workweek. Because the standard self-reported question was also included in the Workforce Survey, comparisons can be made between the two measures for the same respondents.

Table 1. Distribution of average hours, by self-reported workweek versus calculated workweek methods, 1992

Average hours per week range	Self-reported method: Self-reported hours (mean)	Self-reported method: Calculated hours (mean)
Total (mean)	42.2	44.8
0-19 hours	13.8	18.0
20-29 hours	23.1	24.9
30-39 hours	34.3	38.4
40-49 hours	41.9	45.3
50-59 hours	51.7	52.6
60 hours or more	64.8	62.2

	Calculated method: Calculated hours (mean)	Calculated method: Self-reported hours (mean)
0-19 hours	14.1	20.6
20-29 hours	25.1	27.0
30-39 hours	35.9	37.0
40-49 hours	44.6	42.1
50-59 hours	53.4	49.0
60 hours or more	69.8	58.5

Source: Jacobs, J.A., 1998, Measuring time at work: Are self-reports accurate? Monthly Labor Review 121(12):42-53.

This analysis focuses only on the time spent in respondents' main job. Twenty-two variables that were potentially associated with discrepancies between reported and calculated workweeks were grouped into three sets of predictor variables.

- **Social-psychological measures** were examined to determine whether respondents who felt especially busy or rushed would exaggerate their hours on the job relative to other respondents. These social-psychological measures were job satisfaction, thought of quitting job in last 3 months, enough time to get job done, difficult deadlines, working at a high fraction of one's capacity, supervisor support, family spillover to job, success in balancing work and personal life, satisfaction with current life, and being nervous and stressed in the last 3 months.

- **Job attributes** were examined to determine whether some types of jobs produced systematic bias in estimates of the workweek. These job attributes were flexible hours, shift type, union membership, self-employment status, dual-job status, years with employer, and job tenure.

- **Demographic variables** were examined to see how they affected responses. These demographic variables were age, marital status, presence of children in the household, race and ethnicity, and education.

This analysis examined data from the March 1997 CPS to compare self-reported time measures for different reference periods. Nonfarm wage and salary workers were selected for this comparison. They were 18-64 years old, worked at least 1 week during 1996, and were employed during the survey week in March 1997.

Table 2. Trends in hours usually worked last week, for male and female nonfarm wage and salary workers, 1970-90

Category	Mean hours, all jobs (standard deviation)	Percent working less than 30 hours per week	Percent working 50 or more than per week
Men, 1997 (n=24,889)			
Hours worked last week	42.66	9.26	25.40
Standard deviation	(12.46)	...	...
Hours usually worked last year	42.60	5.78	22.97
Standard deviation	(10.06)	...	...
Women, 1997 (n=23,968)			
Hours worked last week	36.90	19.78	10.93
Standard deviation	(11.93)	...	...
Hours usually worked last year	37.30	16.00	9.23
Standard deviation	(10.30)	...	...

Source: Jacobs, J.A., 1998, Measuring time at work: Are self-reports accurate? Monthly Labor Review 121(12):42-53.

Results

The mean workweek was slightly longer with the calculated measure than with the self-reported indicator (table 1). This difference reflects the fact that the calculated measure includes lunch and other breaks that are excluded (in principle) from self-reports. Those who reported working 60 or more hours per week (on average) report working 2.6 hours per week more than the calculated hours. For the rest of the sample, the calculated workweek is longer than the self-reported workweek. However, the lower panel in the table indicates that when arranged by length of the calculated workweek, those with calculated workweeks of 40 hours or more understate the time they spend at work, but those with calculated workweeks of less than 40 hours tend to exaggerate their workweeks.

Regression analyses were undertaken to determine whether the discrepancies between the two measures of working time were related to independent variables. There was little evidence that social-psychological measures—individuals' orientations to their life or their job—lead them to exaggerate their working time. However, some evidence showed that job tenure reduces reported work time for men, but this may be offset by the fact that years with one's employer tend to increase reported working time. Women who held multiple jobs exaggerated their hours on their primary jobs; men did not. Individuals with less than a college education tend to underreport their workweeks. However, more educated workers might be more likely to bring their work home, an aspect of work that is missed by the calculated workweeks examined in this study.

Table 2 compares self-reported workweeks based on data from the March 1997 CPS for two reference periods (last week vs. last year). The mean length of the workweek is similar for these two time periods. The proportion of respondents who report working more than 50 hours per week is lower when the reference period is last year, compared with last week. Also, the proportion who reported working less than 30 hours per week is also lower for last year than last week.

Conclusion

Independent measures of working time largely corroborate the self-reported measures relied on by the standard surveys, such as the census and CPS. A workweek calculated from departure-and-return-time, minus commuting time, is slightly longer than the self-reported workweek and correlates with self-reports quite strongly.

Few predictor variables account for the gaps between self-reported and calculated working time. To the extent that self-reported measures are in error, the errors appear to be random.

Data on "hours usually worked last year" tend to have less dispersion than data on "hours worked last week." The reference period thus seems to influence the extent of reporting at the extremes. Researchers interested in studying the behavior of workers at the extremes of the distribution can produce more conservative estimates by relying on data with an annual reference period.

The standard self-reported measure of working time is a reasonably reliable indicator of time use. A time diary and other measures of time use are helpful as a supplement—not as a substitute—for standard measures of the workweek.

Source: Jacobs, J.A., 1998, Measuring time at work: Are self-reports accurate? *Monthly Labor Review* 121*(12):*42-53.