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Research Note
**‘How Many Hours Do You
Usually Work?’**

**An analysis of the working hours questions
in 26 large-scale surveys in six countries and
the European Union**

Kea Tijdens and Anna Dragstra

ABSTRACT. This article reviews how working hours are asked for in 26 large-scale surveys in six countries plus the European Union. Four dimensions of working time were investigated, notably number of working hours, timing of work, predictability and control over hours, and commuting time. Although almost all questionnaires ask for hours worked, the terminology varies greatly. In only half of the cases a reference period is taken into account and in half the reasons for working more/less in the survey week than usual are asked for. Contractual hours are hardly asked for and so are paid and unpaid overtime hours. The timing of work is asked for in a minority of the questionnaires, and predictability and control over working hours is also not a major issue. The incidence of an on-call contract is the most likely proxy for predictability. **KEY WORDS** • large-scale surveys • overtime • survey questions • working hours • working time preferences

Introduction

Many surveys in the area of time use at work include the topic of employees' working time. Both questionnaires and diaries are used to obtain this information, but this article focuses on questionnaires. Researchers can make numerous methodological choices when it comes to questioning employees about their working hours. It was already pointed out in 1962, at the Tenth International Conference of Labour Statisticians, that the approaches to the questioning of working hours were too heterogeneous. This was resolved by giving directions to improve international comparability of data on working hours. Nevertheless, 40 years later, the measurement of working hours in labour force surveys and similar large-scale surveys still raises methodological problems among which a lack of homogeneity in the measure of the number of hours worked is not the least, according to Bruyère and Chagny (2002). In time-budget studies, however, progress can be seen because of recent attempts to classify categories of time (United Nations Statistics Division, 2003).

This article investigates how working time is asked for in 26 large-scale surveys in six countries, notably Australia, Canada, Germany, The Netherlands, UK, USA, and in the European Union. We review four dimensions of working time, notably the number of working hours, including the possibility to estimate annual working hours, the timing of work, the predictability of and control over working hours, and the commuting time to the place of work. Although for estimating annual working hours, administrative sources may provide better data, this article reviews only data gathered through personal questionnaires. In a later section, we summarize the definitions of working hours and other dimensions of working time. After that the methodology of our study is detailed and the results presented. Conclusions are drawn in the final section of this article.

Defining Working Hours

In their paper, Evans et al. (2001) distinguish four definitions of hours of work. The first one refers to the *actual hours of work* in productive activities, whether paid or unpaid. This definition is particularly important for macro-economic analyses. The second definition refers to the *usual hours of work*, whereby the reported hours are not influenced by unusual or irregular events, such as a short period of overtime working, or short-hours working, holidays and sicknesses. This definition is the international one most commonly used in labour force surveys. Third, in countries where the working week is primarily regulated by law, it is common to refer to the concept of *legal hours*. This applies for example to France, where the 35-hour-week has been introduced by law. Other countries may set only a maximum 'safety net' in legislation. This is for exam-

ple the case in The Netherlands, where the standard working week is agreed upon in collective bargaining and excessive working hours are limited by legislation. Fourth, in countries where the working week is regulated in collective agreements, it is common to refer to the *standard working week* and the *standard normal hours* or *agreed hours*. In most industrialized countries, the contractual basis of the employment relationship with reference to working time arrangements is a key feature in measuring working time arrangements (Bell and Elias, 2003). In The Netherlands, with its high rates of individuals in part-time employment, a fifth definition refers to the number of hours laid down in the individual employment contract or the *contractual hours of work*. As a consequence, *overtime hours* are defined as the difference between the usual hours of work minus the contractual hours.

The definitions in the previous paragraph all relate to weekly working hours. However, recent trends in European Union member states towards flexibilization and annualization of working hours weaken measurements based on weekly hours. These trends expose a need to measure hours of work on an annual basis or any other reference period, which implies controls for holidays, for unemployment spells, for out-of-work periods and for flexible weekly hours. For cross-country, macro-economic comparisons, annual hours worked are probably the best indicator. The ILO's worldwide Key Indicators of the Labour Market (KILM data) uses annual hours of work.

According to the European Foundation for the Improvement of Living and Working Conditions (2001), there are numerous difficulties in making international comparisons concerning the length of working time in the European Union. Due to different developments in working time policies, countries do not collect comparable data. First, in some countries, annual hours rather than weekly hours increasingly become the basis for calculating working hours due to the increasing use of schemes whereby weekly hours may vary considerably around an average over a reference period. Second, in some countries working time reductions have been introduced by means of extra days off or cuts in annual hours, leaving the normal working week relatively unchanged, but stressing the need to use annual hours for calculating working hours for cross-country comparisons. Third, the increase in part-time work complicates the measurement of working hours. Finally, cross-country comparisons of normal weekly working hours are problematic, as they do not take into account matters such as overtime or the length of annual holidays and other forms of leave, which may vary considerably across industries and across countries. In conclusion, reliable cross-country comparisons must be based on annual working hours, but data on annual hours are not largely available.

In their paper, Bryuère and Chagny (2002) present a list of frequently used working-time-related concepts, frequently used statistical resources, and methods used to estimate annual hours worked. This study is a good starting point for

anyone who has to collect and interpret data on working hours. For the purpose of measuring labour input by means of surveys, all hours worked have to be asked for, according to the authors. This includes all paid and unpaid hours, including hours in second jobs or marginal jobs, and corrected for hours not worked due to slack, reduced working time, leave, vacation, sickness, or other reasons. In addition, investigations of working hours preferences need to clarify the basic hours (Bielenski et al., 2002; Tjeldens, 2003). Thus, a questionnaire needs to ask for usual weekly hours in first and second jobs, whether a contractual number of hours is set, and any deviation from the usual/contractual hours in the reference week due to overtime hours or absence of work.

Using reported weekly hours collected by surveys, Hoffmann and Greenwood (2001) have distinguished two methods to calculate the annual hours worked. The direct or averaging methodology estimates annual hours worked through averaging of the weekly hours. It requires a high frequency in data collection, ideally with continuous surveys. The component or accounting method uses usual weekly working and estimates the components of the deviation from these usual weekly hours, such as holidays, vacations, overtime, or slack work. This method is more appropriate when the surveys are not frequent.

Working hours are essential in calculations of hourly wages. In most datasets, weekly or monthly hours are used for these calculations. However, in international datasets hourly wages may be calculated differently due to the different measurement of working hours. A correct calculation must be controlled for paid or unpaid overtime hours. In surveys, this requires that either the hours basis of a daily, weekly or monthly wage or the contractual and usual hours have to be asked for. In addition, it should be asked whether overtime hours are paid, time-compensated or unpaid.

Apart from the length of working time and the hours basis of wages, other dimensions of working time are important, because we may assume a trade-off between the attractiveness of certain hours and both the length and the pay of working hours. Major dimensions are the timing of the work within or outside core working hours, the predictability and the level of control over working hours, and the commuting time. Just like the questions of hours worked, these subjects bring a great deal of methodological choices with them that hamper international comparison.

Working hours and the timing of work can be measured using either large-scale labour force surveys or time diaries studies although, compared to diaries, surveys measure mostly a longer time period. In general, time diary measures tend to underestimate long working hours and overestimate short working hours compared to self-reported working hours in surveys. Yet, according to Jacobs (1998), this discrepancy is a statistical artefact, because the errors in self-reported measures appear to be largely random by nature. Jacobs concludes that for analyses of working time issues, employee surveys will therefore provide the

variety of data needed. This conclusion is important, when taking the increase of employees with annual working hours into account. Investigating the reference period, Jacobs concludes that data on 'hours usually worked last year' tend to have less dispersion than those that involve 'hours worked last week'. Thus, fluctuations of weekly working hours within a year will level out when the reference period in questions of usual working hours refers to the period of last year.

Methodology

Our study aimed to investigate how working hours are asked in large-scale surveys in countries with a long tradition in labour force and related surveys. We limited the study to four dimensions of working time:

- Number of working hours, detailed in twelve items;
- The timing of work, detailed in three items;
- Predictability of and control over working hours, detailed in four items;
- Commuting time, detailed in one item.

In the selection of surveys, we used several criteria. First, the survey had to address any of the four working time dimensions. Second, the selection was limited to questionnaires in a language which was accessible to us. Third, we did not want to rely on datasets or on their codebooks only. Therefore, we looked for questionnaires, either in print or available on a website. Fourth, we selected the most recent questionnaire in case a survey was held regularly. Fifth, we were particularly seeking surveys that were either well known or were considered the best and most innovative approaches to the subjects discussed earlier. We did not select upon the interview mode. Some questionnaires were designed for face-to-face interviews and others as self-administered questionnaires. Of course, this collection of questionnaires is not a representative sample of the worldwide population of large-scale surveys in the addressing working time issues.

Initially, around 30 questionnaires in various forms were collected that touched upon one or more of these dimensions of working time, of which 26 could be used for this study. They came from six countries, notably Australia, Canada, Germany, The Netherlands, UK, USA, plus the European Union. From some questionnaires we received a paper version; others could be downloaded because they were posted on a website. Some surveys had only detailed lists of variables, but these were only selected if the variable labels were apparently close to the original survey question. Table 1 presents the surveys studied and the results of the investigation per survey. The relevant questions of each survey are listed in the Appendix of the electronically downloadable paper by Dragstra and Tijdens (2004).

TABLE 1
The 26 surveys studied for their working-time issues

Country	Year	Title	Abbrev.	Number of working hours											Timing of work			Predictability and control			Commuting			
				I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I20	I12	I13	I19	I14	I15	I16	I17	I18	
AUS	cont.	State Supplementary Schedule. Part-time, Casual and Temporary Employment Patterns in Australia	SSS	1	0	1	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	0
AUS	cont.	Labour Force Survey in Australia	LFS	1	0	1	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0
AUS	2000	November 2000 supplementary to the Labour Force Survey in Australia	SUP	1	0	0	0	1	1	0	0	1	0	0	1	1	0	0	0	1	1	0	0	0
AUS	cont.	Survey of Working Hours of Wage and Salary Earners. State Supplementary Survey Queensland	SUPQ	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
AUS	1997	Time Use Survey Australia	TUS	1	0	1	0	0	1	0.5	1	0.5	0	0	0	0	1	1	0	0	0	0	0	1
CAN	cont.	Labour Force Survey	LFS	1	0	1	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0
CAN	1998	General Social Survey, Cycle 12. Time Use Survey	GSS	1	0	0	1	0	0	0	0	1	0	0	0	1	0	1	0	0	1	1	0	0
CAN	2002	Workplace and Employee Survey	WES	1	0	0	1	0	1	0	1	1	1	1	1	0	1	0	1	1	1	1	1	0
CAN	cont.	Tabulator, Canada	TAB	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	1
GER	2002	Mikrozensus 2002 und Arbeitskräftestichprobe der Europäischen Union	MIK	1	0	1	0	0	1	0	1	1	0	0	1	0	1	0	1	0	0	0	0	0
EUR	2001	European Labour Force Survey	LFS	1	0	1	0	0	1	0	1	1	0	0	1	0	1	0	0	1	0	0	0	0

continues

TABLE 1 (cont.)

Country	Year	Title	Abbrev.	Number of working hours												Timing of work			Predictability and control			Commuting		
				I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I20	I12	I13	I19	I14	I15	I16	I17	I18	
EUR	2001	European Community Household Panel, wave 8, 2001	ECHP	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0
EUR	1985	Eurobarometer 23	BAR23	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	
EUR	2001	Eurobarometer 56.1	BAR56	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
NL	cont.	Enquête werkgelegenheid en lonen	EWL	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	
UK	1996	1970 British Cohort Study: Twenty-six-Year Follow-up	BCS	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
UK	2002	British Household Panel Survey. Wave 11	BHPS	1	0	0	0	0	0	1	0	1	0	0	1	0	1	1	0	1	0	0	1	
UK	2001-2	Labour Force Survey: Transitional Questionnaire	LFS	1	0	1	0	1	1	1	1	1	1	0	1	1	1	0	0	1	0	0	1	
UK	2000-1	The National Survey of Time Use	TUS	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0	
USA	1972-3	Quality of Employment Survey	QES	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	
USA	cont.	American Time Use Survey	ATUS	1	0	1	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	
USA	2000	USA Census 2000	CEN	1	0	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	
USA	panel	Panel Study of Income Dynamics Child Development Supplement	PSID	1	0	1	0	1	1	0	1	0	0	0	0	0	1	1	0	1	1	0	1	
USA	cont.	Current Population Survey	CPS	1	0	1	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	
USA	cont.	Survey of Income and Program Participation	SIPP	1	0	1	0	1	1	0	0	1	0	1	1	1	1	0	0	0	0	1	1	
USA	cont.	National Study of the Changing Workforce	FWI	1	0	0	0	1	0	1	0	1	1	0	1	1	0	0	1	1	1	1	1	

Note cont. = continuous

TABLE 2
Percentage of questionnaires in which 20 studied items are asked for (*N* = 26)

Number of working hours, 12 items		%
I1	Weekly working hours are asked for.	96
I2	Monthly working hours are asked for.	0
I3	A defined reference period is used for questions about the working hours.	50
I4	Annual working hours can be calculated.	15
I5	The distribution of the working hours over the number of days in a period is addressed.	23
I6	The distribution of the working hours over specific weekdays is addressed.	35
I7	Contractual working hours are asked for.	19
I8	Actual working hours are asked for.	46
I9	Usual working hours are asked for.	81
I10	Working hours, on which the salary is based, are asked for.	31
I11	Working hours in the past are asked for in order to avoid the 'overtime bias', not to calculate the annual working hours.	8
I20	Working hours preferences are asked for.	50
The timing of work, detailed in 3 items		%
I12	Time of the day is known because of a question about shift work.	35
I13	Time of the day is known because of question that is not about shift work.	35
I19	Diary is used.	35
Predictability of and control over working hours, 4 items		%
I14	The type of the contract is asked for as a proxy for the predictability of working hours.	42
I15	Flexibility of number of working hours is asked for.	19
I16	Flexibility of starting and ending times is asked for.	15
I17	Rosters are asked for.	35
Commuting time, 1 item		%
I18	Commuting time is asked for.	35

Results

Number of working hours

The first dimension studied was the number of working hours, detailed in 12 items. This was asked for in almost all 26 questionnaires. In the questions of weekly working hours and the usual working hours, a large diversity of terms appeared to be used in the surveys, such as 'usually', 'currently', 'typically',

‘regularly’ and ‘on average’. We have considered all these terms addressing the concept of *usual working hours*. In almost half of the cases the *actual hours of work* in the referenced week are asked. Only a few questionnaires ask for *contractual hours*. Table 2 shows that very frequently the weekly working hours and the usual working hours are asked for. Half of the surveys ask for a reference period, a precondition to estimate annual working hours.

In most surveys, working hours are measured thoroughly. The Part-time, Casual and Temporary Employment Patterns in Australia Survey for example has a check on the number of working hours, because it contains a question whether the hours worked at home were included in the weekly working hours. The Current Population Survey (USA) also guides the respondents into calculating their actual weekly working hours in a reference period. It is first asked how many hours the respondent usually works, followed by a question how many hours the respondent worked more/less in the reference period, so the respondent is forced to think about the exact number of hours before filling them in. The Labour Force Survey (UK) approaches the days worked thoroughly. First it is asked whether the respondent usually works on a certain day or time, and then whether (s)he ever worked on that day or time.

The November 2000 Supplementary Survey of the Australian Labour Force Survey is innovative because of its use of a grid for the reference week, allowing the respondent to mark the days worked. This also forces respondents to reflect upon the number of hours actually worked, because this is asked for before the grid is filled in. In addition, it combines two questions in one. The usual days worked and the flexibility of working days are addressed in one question. It is pointed out that overtime and time off have to be included. For the purpose of calculating the hourly wage rate, paid and unpaid overtime hours are explicitly asked for. The visualized two-week reference period for determining absence from work is also innovative. Flexibility and control over hours worked are thoroughly asked for and by asking whether the respondent has *any* say in determining certain things at the workplace, it will also be known if someone does not have full control, but just a little influence in the decision process. The Tabulator (Canada) is a good survey because of its respondent friendliness. Respondents immediately receive feedback because graphs allow them to compare their results with those of other respondents. Displaying the number of hours left to fill in from 24 hours is a good way to avoid mistakes.

The Workplace and Employee Survey (Canada) makes an attempt to get some idea on the number of hours worked by flexitime employees, by asking for the maximum number of weekly working hours. The Eurobarometer 56.1 also has a good way to address working hours of flexitime employees. These employees are asked to fill in their average amount of weekly working hours for a three-month reference period.

The timing of work

The timing of work is investigated, using three items. Table 2 shows that the timing of work is most commonly examined both in time diaries and in questions about the frequency of working time beyond core hours, mostly defined as 8.00 am to 6.00 pm. These questions ask about the incidence of evening work, night work, and work on Saturdays and Sundays. In some questionnaires, a question is asked about shift work, although shift work is not a very precise estimate of the timing of work.

The Panel Study of Income Dynamics Child Development Supplement (USA) has a well-developed diary for the respondent's two most important activities. In addition, there are options to fill in travel time and a second shift as well. The German Mikrozensus and the European Labour Force Survey have a special way of asking for deviant working hours and working days. A reference period of three months is used and respondents can indicate how often a deviant situation has occurred, varying from 'never' to 'always'. Night work is also carefully asked about in the German Mikrozensus. Periods of time are given and the respondents can indicate how many hours of their shift they worked during this period. In doing so, night work can be measured in an objective way, instead of letting respondents subjectively judge whether their shift is a night shift or for instance an evening shift. The British Household Panel Survey has very efficient questions about contract types that deviate from permanent contracts. A list of these contracts is presented so that a respondent can indicate whether his/hers is on the list. The Survey of Income and Program Participation (USA) is worth mentioning because of the thorough questioning of schedules. In asking about the reasons for having a certain schedule, a distinction is made between voluntary and involuntary reasons.

Predictability of and control over working hours

The predictability of and control over working hours is investigated using four items. Table 2 reveals that the predictability focuses on the rosters or on the type of contracts, primarily on-call contracts, as a proxy for the predictability of working hours. Few questionnaires addressed issues related to a more detailed examination of predictability, such as the period that schedules are known in advance, the likelihood of changes in schedules, the control over the working hours, the timing of work and overtime hours, and finally whether there are forms of self-scheduling or possibilities for exchanges of shifts.

Commuting time

This dimension addresses time for travelling related to work. About 35 per cent of the surveys studied have questions about commuting time, as Table 2 shows. In the questionnaires, most commonly, the commuting time is sought for in minutes from home to work (one way). Modes of transport are sometimes asked for too.

Conclusions

Working hours are a major feature of studies of working time. Yet, working hours in labour force surveys and similar large-scale surveys are not measured in the same way, causing problems in case of cross-country comparisons. This article reviews how working hours are asked for in 26 large-scale surveys in six countries – Australia, Canada, Germany, The Netherlands, UK, and USA – plus the European Union. Four dimensions of working time were investigated, notably number of working hours, timing of work, predictability and control over hours, and commuting time.

Although almost all questionnaires ask for hours worked, the terminology varies greatly: in only half of the cases a reference period is taken into account, in half of the cases the reasons for working more/less in the survey week than usual are asked for, contractual hours are hardly asked for and so are paid and unpaid overtime hours. As a consequence, only a minority of the questionnaires allows for the calculation of annual working hours.

The timing of the work is asked for in a minority of the questionnaires. The methods used are equally a diary or questions about working beyond core hours. Predictability and control over working hours are not major issues. The incidence of an on-call contract is the most likely proxy for predictability. Finally, commuting time is asked for in a third of the questionnaires studied.

Note

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