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Gender issues in the measurement of paid and unpaid work

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National Experiences in carrying out the Harmonized European Time Use Survey

National experiences of carrying out harmonised European Time Use Survey

Recent situation in carrying out European Time Use Surveys

Most statistical offices in Europe have included time use surveys in the framework of social statistics and carry out data collections at more or less regular intervals. The first countries started their surveys as early as the 1960s. Eurostat's harmonisa-tion was based on national surveys and activity classifications. Modifications were discussed in several expert group meetings.

European time use surveys are made on a voluntary basis.
The following countries have already collected data:
France 1998/99
Belgium 1999
Estonia 1999/2000
Finland 1999/2000
Hungary 1999/2000
Portugal 1999
Romania 2000
Slovenia 2000/2001.

Data are being collected in the field in the UK, Norway and Sweden.
In 2001 the survey will start in Germany, Italy, Bulgaria and Latvia.
There are plans to carry out the TUS in Austria, Bulgaria, Lithuania, Poland, Slo-vakia and Macedonia as well. Switzerland tries to find a less expensive survey.

Synchronising of international and national demands

Harmonised guidelines are a big challenge for national statistical agencies. In order to ensure comparability in space and time a compromise between international and national demands must be found. Changes in survey methodology will inevitably influence the data and complicate analyses.

According to Eurostat's measurement of time use, the dependent variable had to be input harmonised, while output harmonisation is sufficient for background or inde-pendent variables. This means that similar diaries must be used in different coun-tries. More freedom was given to the questionnaires. National modifications used by statistical offices were proposed to be used in the time use survey as well.

The completed guidelines were produced late, which meant that before June 2000 the countries had to apply a draft version. This naturally led to minor deviations from the harmonised method. Major deviations depended on clear national deci-sions. Finland is the first country to use the nearly completed guidelines.

France started the survey two years before the finalisation of the Eurostat recom-mendations and tried to comply with the recommendations of the pilot survey of 1996. For these reasons, the French survey of 1998 is closer to the Eurostat survey than to the last French survey in 1986 and the efforts for European harmonisation were made even if it weakened national comparisons to the previous surveys. For instance, France used in the 1998 survey 10-minute time-slots instead of 5-minute

ones as in 1986, and the questions and the structure of the household and individual questionnaires of the EU pilot survey were also used in the French survey. In fact, the French survey of 1998 follows the minimum accepted guidelines for European time use surveys.

Hungary applied a mixed method based more on national traditions and less on harmonised guidelines. A yesterday interview was made for one day four times a year. Hungary coded activities twice, according to the both coding schemes, the national and the European.

Sponsors of the survey

Instead of using solely their own budget resources the statistical offices seem to rely more on external sponsors in completing costly time use surveys. The following list contains the names of the sponsors and their main interests in surveys recently carried out in European countries.

France
 General Planning Commission
 Ministry of Labour - work conditions

Finland
 Ministry of Education - combining duties of family and work, volunteer work and informal help
 Ministry of Labour - actual working hours, time pressure
 Ministry of Agriculture and Forestry - regional diversity
 Ministry of Transport and Communications - comparison with the transport survey
 National Research and Development Centre for Welfare and Health (STAKES) - senior citizens
 Finnish Broadcasting Company (daily rhythm of different population groups)
 Social Insurance Institution - time use of senior citizens
 National Consumer Research Centre - household production, use of services
 Research Institute of the Finnish Economy (ETLA) - early retirement

Norway
Ministry of Labour and Administration - Senior workers' relation to work and retirement
Ministry of Social Affairs and Health - disabled and time use (extra sample)
Ministry of Culture - leisure time activities and membership of sports   organisations, etc.
Ministry of Education - adult education
Ministry of Family and Children - time use among families with small children (extra sample)
The leading trade union LO - compensation for work done during travel to work and at home
Telecommunications company Telenor - use of the Internet and telephone

Portugal
The Portuguese survey was sponsored by a wide range of public and private companies:
IMPRESA - media consumption
The Institute for Employment and Vocational Training
The Committee for Equal Work and Employment Conditions - sharing housework;
The Bank of Portugal
The Institute for Cinema, Audio-visuals and Multimedia
Modelo Continente
CP Caminhos de Ferro Portugueses

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Rede Ferroviária Nacional
Metropolitano de Lisboa
Social Sciences Institute of the Universidade Técnica de Lisboa
Observatory of Cultural Activities.

Slovenia
Institute for Social Sciences
National telephone company Telecom

Sweden
Ministry of Industry - policy of gender equality
Ministry of Industry - senior citizens

UK
Department of Health - adult carers, physical activity
Department for Education and Employment - childcare, unemployed, jobsearch, part-time study and work, training/lifelong learning/further education, compulsory education, flexible working, other forms of work and earnings
Department of Environment, Transport and Regions - interaction between travel and other activities, travel, leisure activities and voluntary/community work.
Department of Culture, Media and Sport - participation and patterns/factors of participation across the range of CMS sectors, tourism, cultural education and training
Economic and Social Research Council - carers, education, children, elderly, media, voluntary work, working time regulation.
The Office for National Statistics is mainly interested in Economic Assessment & Strategy, Labour market statistics, Hidden economy and Unpaid activities.

Belgium and Estonia financed their TUS fully from their own governmental budget. Romania financed the survey by the PHARE National Statistical Programme.

Household sample and non-response

Eurostat recommends that all members of the household are included in the sample. However, the individual is the most common unit of study. Some countries do not use the household as a sample unit, but one or more of its members.

In Norway and Sweden a sample consisting of individuals was drawn from the population register. Some sub-samples with both spouses were included. In Portugal one or two members of the household were chosen to be surveyed. In Romania all households living in the same dwelling were interviewed.

According to the recommendations, all persons aged 10 and more are included in the sample. If that recommendation cannot be followed, the minimum age limit is 15 years. The lower age limit has varied from 6 in Portugal to 20 in Sweden. In France all persons aged 15 and more were interviewed in 1998 instead of individuals as in the previous survey.

The fieldwork is usually carried out by the statistical office, except in the UK where the tender was won by a private research company Ipsos-RSL.

Response rate is difficult to calculate in a situation where the first step is to contact a household. Countries without a population register do not have information about the total number of members belonging to the households not contacted. In France 79 per cent of the households belonging to the sample were interviewed. 94 per cent of the members in these households filled in a diary. Exact data on response

rate on the individual level is missing. In Slovenia 64 per cent of the households of one season were interviewed.

Most difficulties were encountered in Belgium where the TUS was combined with the Household Budget Survey. In Belgium households received a letter from the statistical office asking whether they would be interested in participating in the HBS. 15 per cent positive responses were obtained. Of these households 90 per cent took part in the TUS as well.

In Finland a relatively low response rate was the outcome of using the household sample. 64 per cent of the households were interviewed, 61 per cent of the individuals were interviewed and as many as 15 per cent of the interviewed persons did not keep a diary. The diary response rate was 52 per cent among household members. The figures were 82 and 75 per cent in the previous surveys applying individual samples. Handling a whole household created problems in a Northern European country with traditions of individual samples. In Norway non-response tends to increase at the same rate as in Finland.

Allocation of diary days[1]

Eurostat recommends using two diary days, one weekday and one weekend day. The use of only one diary day is also acceptable. Some countries deviated; e.g. Belgium, France and Portugal gave one diary day to the respondents.
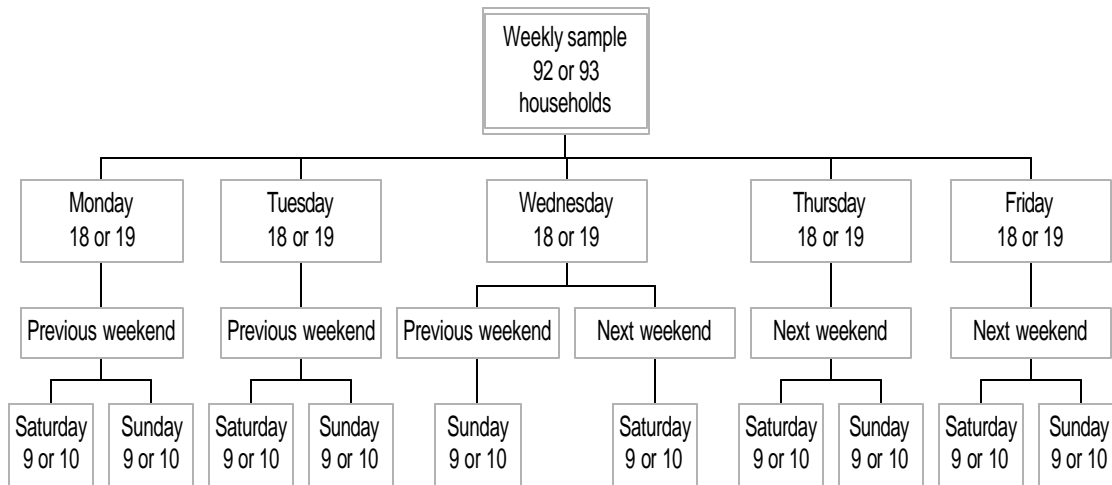
The whole year was proposed to be covered. Portugal and Romania diverged here; Portugal carried out the fieldwork in October and November 1999 and Romania in August and September 2000.

The annual sample of the Finnish Time Use Survey could offer a suitable way for allocating diaries evenly for all weekdays and all weekend days of the year when one weekday and one weekend day were chosen for diary keeping. Based on 4,800 households, the weekly sample consisted of 92 or 93 households (Figure 1). The sample was evenly distributed to five weekdays from Monday to Friday and the daily sample was 18 or 19 households.

Saturdays and Sundays were divided equally for each weekday. Weekdays were linked to a weekend day selected from the nearest weekend. According to this principle, the previous weekend was chosen for Monday and Tuesday and the following weekend for Thursday and Friday. Wednesday was combined with the previous Sunday or the following Saturday.

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[1] This section refers to Paavo Väisänen: The Estimation Procedure of the Harmonised Time Use Survey in Finland. Preliminary report. Statistics Finland. Statistical Research and Development Unit. Helsinki February 2000.

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Figure 1 Partition of the sample to weekdays and weekends (numbers are the daily sizes of the household sample)
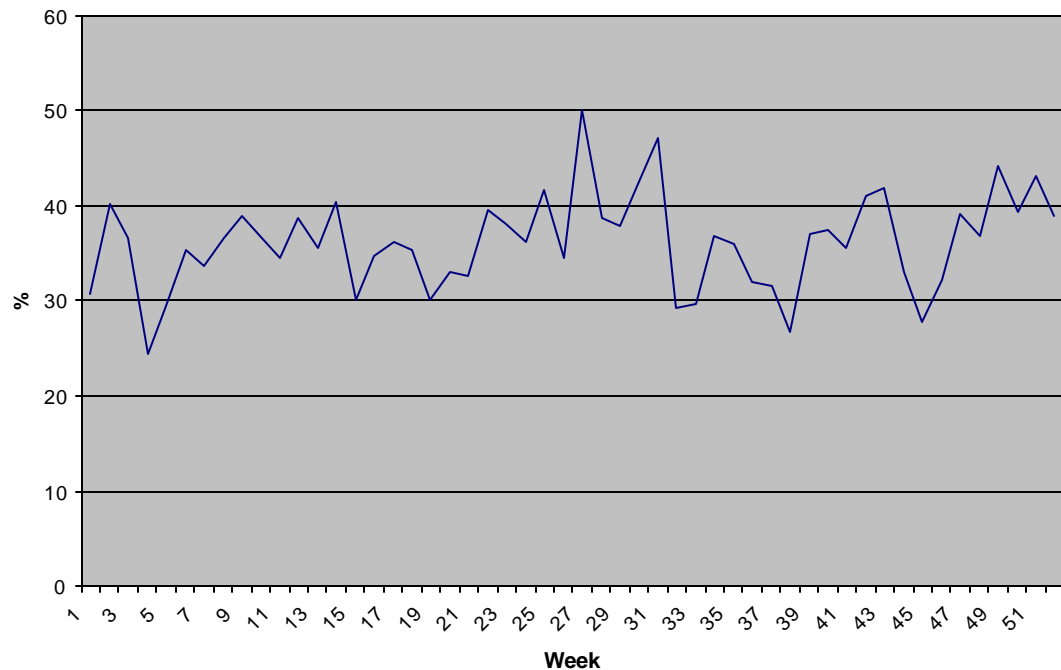

Weights are needed for diary data. Depending on the allocation of the diary days, different weights are needed for weekdays and weekend days. When a diary weight is marked with w_d then

$$w_d = \begin{cases} 5/7 & \text{when d is a weekday, and} \\ 2/7 & \text{when d is a weekend day.} \end{cases}$$

Combination of diary days and estimating the duration of episodes may need special weights that are the functions of these diary weights and household weights.

Non-response varied in Finland heavily according to the season, being almost 50 per cent of the households during holiday season and less than 30 per cent during some weeks in the autumn after additional interviewer training (Figure 2).

Figure 2. Non-response in the household interview

Questionnaires

Even if harmonised questionnaires were produced, the countries are allowed and even advised to apply their own questions, especially those used in the Labour Force Survey. The outcome must be comparable with the other countries, defined in a unique way. Us ing own familiar questions is most important from the national point of view, because the interviewers know the exact meanings and ways of asking standardised questions. This will improve data quality.

The countries using register data instead of asking about earnings, for example, are allowed to do so. This is the situation especially in Northern European countries. For example, Statistics Finland links tax register data from the previous calendar year to databases once a year.

Almost all countries seem to include additional questions based on national needs. Portugal had extra questions on TV and computing. Estonia incorporated several questions on leisure activities. Slovenia asked about telephone issues. Finland made several questions regarding information technology and leisure activities. The UK added questions on ethnic origin, use of Internet and vehicles. Despite these new questions, details were added to the recommended questions.

Diary

The diary format was proposed to be kept uniform. Based mainly on special interests of the customers, the UK included a separate column for location ("Where were you?"). This will improve the quality of the variable. Some clarifications were added to the column "With whom".

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Several countries also give to the respondent a week diary measuring weekly working hours and in the UK full time education as well. The week diary was tested in the pilot survey but was not recommended to be included in the main survey. There was deviance between these two measurement techniques.

Activity classification and coding

From the national perspective a difficult task was connected with adapting the harmonised activity classification system to the national classification. Comparability to previous surveys has to be maintained at the same time as all ETUS codes had to be applied.

In the countries the solution depends on the decision on which detail it is necessary to maintain time series. In Finland this was a classification of 26 activities, on which level changes between the two previous surveys had been mainly analysed. In addition, some interesting, very detailed codes have been maintained, e.g. knitting and needlework.

The Finnish fieldwork was of help in testing the ETUS coding list. Some minor problems in the logical structure of the classification were observed and changes were made to the final list. In addition, some distinctions between activities could not be detected because of lack of information in the written responses.

For the countries harmonised coding is the most demanding task of the survey. Uniform understanding of the common classification is not self-evident. The logic behind the hierarchy and the closest codes should be realised. The concrete content of daily activities varies from country to country and examples on the national level must be added to the Eurostat code index. The national pilots were made only during one season, leading to lack of activities taken in summer time or mid-winter, for example.

Centralised coding with proper training and continuous supervision is necessary in order to achieve good data quality. When a new activity type appears, coding supervisors must decide where it should be placed and then update it to the code instructions.

In France, automatic codification (SICORE) has been used and 90 per cent of the activities have been successfully coded. Consequently, the French coding list is sometimes more aggregated than the European list, particularly on the transport codes and supplementary variables have been integrated in the diary for each activity (location and for whom).

ETUS help desk

In order to confirm uniform coding, the 1999 ETUS task force meeting in Helsinki decided to introduce a help desk service for the countries involved. Statistics Finland offered to start this service. The countries are invited to send questions about coding and they will be replied as soon as possible. Some countries have been using this opportunity for consultation. The most frequent problems are connected to defining the purpose of the trip.

Questions and answers have also been sent to Eurostat with the task of informing other countries about the topics discussed.

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The biases of non-response will be corrected with four weights (See Eurostat Guidelines Appendix IX):

1. The general weight is given for the respondents. This weight is the same for all the individuals of a household and does not contain non-response and over-coverage. The weight includes non-response adjustments and calibration with auxiliary information.

2. The inclusion probability weight is given for all households and individuals. The weight is given for the sample including non-response and excluding over-coverage.

3. The diary weight is given for all diaries. It may include non-response adjustment for missing diaries. This weight refers to the day of the week and the week of the year.

4. The additional weight will be used in the individual level post-stratification of a household sample.

Missing household members create a problem for intra-household analyses. In other surveys a common method is to use **imputation** for missing household members. In time use surveys it seems difficult to build up good imputation, and the unit imputation may disturb the analysis of time use activities. Imputation could be applied to item non-response for some missing activities. Experiments in imputation of partly filled-in diaries using donor technique will be made by Statistics Finland.

Using unspecified codes for missing activities of long duration will destroy the daily time-use pattern. Imagine that only the first half of the day has been reported and the second half is unspecified time use. This will influence the total time spent sleeping, for example. Sleep between 4 and 7 a.m. is only a part of the total time spent sleeping during 24 hours. Even if this information is true for the morning it is not true for the whole day.

In France two weights where calculated in three steps, for two populations:

1) Household non-response

In the French sample some characteristics of the dwellings and the probability of a non-responding household can be calculated, according to these characteristics. Two populations of households are defined
- the complete households, in which all the persons of 15 years and older have filled in a diary (7,949 households), and
- the diary households, in which at least one diary has been filled in (7,460).
Naturally, the first population is included in the second. For each population a weight is calculated correcting the household non-response PC1 et PD1.

2) Individual non-response inside a diary household

Then, an individual weight is calculated for the persons having filled in a diary in these diary households (15,441 persons), representing individual non-response (by definition, there is no individual non-response in a complete household). In the French survey, the individual socio-demographic variables (age, sex, profession, etc.) are in the household questionnaire and not in the individual one (contrary to the European survey), and are known to all the persons of the household, whether they have filled in a diary or not. The individual weight is calculated according to these demographic individual characteristics, and also with household characteristics (type of household, type of dwelling, day of filling in the diary, etc.). Consequently, within a household, each person has a different weight PD2.

3) Post-stratification

Finally, for each population, the third weight (PC3 and PD3) was calculated by post-stratification in order to have the correct structure in 1998 (individual and households).

The definitive weights will be PCOMP=PC1*PC3 for the first population and POICAR= PD1*PD2*PD3 for the second. According to the subject studied using the survey, the first or the second population was used. For example, a study of interactions within the household concerns the first one and a study of individual activities the second.

Cross-national comparisons

A harmonised microdata set is a task to be carried out in the future. Eurostat announced a grant for this activity to be applied by the EU Member States and EFTA countries.

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