

**UNITED NATIONS
STATISTICAL COMMISSION and
ECONOMIC COMMISSION FOR
EUROPE**

**INTERNATIONAL RESEARCH AND
TRAINING INSTITUTE FOR THE
ADVANCEMENT OF WOMEN
(INSTRAW)**

**CONFERENCE OF EUROPEAN
STATISTICIANS**

**Joint ECE/INSTRAW/UNSD Work
Session on Gender Statistics**
(Geneva, 20-22 April 1998)

Working Paper No. 8

**PROGRESS REPORT ON THE IMPLEMENTATION
OF PILOT SURVEYS ON TIME USE**

**Paper prepared jointly by
Klas Rydenstam of Statistics Sweden and Karen Blanke of Eurostat**

1. Background

1. Eurostat is taking a major step in harmonising national time use surveys since the *Multinational Comparative Time-Budget Research Project* was carried out in the late 1960s. Urgent needs for increased comparability between national time use surveys were noticed by Eurostat in the early-90s. In March 1992 the *Working Party on Social Indicators* discussed the potential applications of time use surveys. *Workshops*, representing EU and EFTA countries with experience on national time use surveys have been arranged. Comments from international organisations (ILO, OECD, UNESCO, FAO, UN/INSTRAW and UN/Statistical Office) as well as from time-use researchers around the world have been taken into account. Interest in time use data has been shown by the relevant policy partners (DGs) of the European Commission.

2. After a favourable conclusion for the proposal of harmonised time use surveys at the SPC in December 1994, pretests were carried out, followed by pilot surveys in 1996/1997 in 18 countries (Finland, Sweden, Luxembourg, Ireland, Italy, Spain, Portugal, Greece, United Kingdom, Albania, Bulgaria, Hungary, Poland, Slovenia, Lithuania, Estonia, Latvia and FYROM).

3. The final pilot survey design has been developed in partnership with Statistics Sweden (responsible for the final pilot survey design and for evaluation of the pilot surveys) and Statistics Finland (responsible for the development of European guidelines on Satellite System on household production, based on time use data.). Both parties were financed by the EU.

4. At present the evaluation of the Pilot Surveys is in progress. Some preliminary results are presented in this paper. A final report on the evaluation of the pilot surveys is scheduled for summer 1998. A recommendation on the development of a European Satellite Account on household production will be available in summer 1998.

2. Pilot survey design and objectives

5. The pilot survey design is basically a sort of common denominator of time use surveys previously carried out in a number of EU and EFTA countries. Thus a certain comparability with the past and future harmonisation of time use surveys is the ultimate aim. The pros and cons of the different approaches in the past have been weighed against the sufficient state of the art in the field and core survey objectives. In a follow-up of expert meetings, task forces and working groups the design was discussed and tested by three pretests. As a consequence the following design was implemented:

<i>Unit of inquiry:</i>	household
<i>Sample size:</i>	appr. 190 household (each country)
<i>Survey forms:</i>	household questionnaire, individual questionnaire and two-day diary for each household member 10 years and older, weekly schedule for respondents with employment
<i>Interview method:</i>	face-to-face interview of the household questionnaire, individual questionnaire (preferred method face-to-face, other method possible such as phone interview, self-completion, proxy-interview, self-completed two-day diary
<i>Design of the diary:</i>	two designated days (one week- and one weekend day), fixed ten-minute time slots, description of activities in own words, primary and secondary activity, "help-question" and "with whom" questions, location/travel coding
<i>Coding of activities:</i>	Hierarchical, mainly 3-digit coding system, subdivided into 10 main groups

6. While there are positive experiences with each part of the design, it is less obvious how they work in combination and in different countries. For instance, the obstacle on the combination of household as unit of inquiry, randomly selected, designated days (for all household members the same days) and the complex diary or the activity coding. Consequently Pilot Surveys were carried out to test the feasibility of the survey design.

3. The pilot surveys - preliminary evaluation¹

7. Although the evaluation has not been completed because not all data sets were available, the results so far support the general conclusion that harmonised time use surveys are feasible. Around 1600 households, covering 4200 respondents (10 years and older) delivering 7400 diaries were the subject of micro data analyses. Subsequent analyses will serve as a basis for reshaping the design in the details that proved problematic.

8. National reports from all countries provided additional information (see DOC.E2/TU/PILOT/13.1/97). The impression from the national reports is that the pilot surveys came out reasonably well, and that the basic qualities of the survey design did not suffer from serious deficiencies.

9. However, a number of design elements gave rise to criticism and more or less serious problems for one or more countries, and in some cases alternative solutions were suggested. These design elements

¹ The first report (DOC.E2/TU/PILOT/13.1/97) is a compilation of all National reports on the pilot surveys, submitted by (member states) Finland, Greece, Ireland, Italy, Luxembourg, Portugal, Spain, Sweden, United Kingdom and (non member states) Albania, Bulgaria, Estonia, FYROM, Lithuania, Latvia, Poland, Hungary and Slovenia. The second report is an interim report (DOC.E2/TU/PILOT/13.2/97) based on the pilot survey data from 8 countries - Finland, Greece, Luxembourg, Sweden, Albania, Bulgaria, Latvia, and Slovenia (see at the beginning delays of sending data). Data from additional participating countries will become available later and are therefore not yet included in the data base.

include, for example, households as the unit of study and aspects of the diary layout. Bearing in mind that the design is to some extent the result of compromises between different perspectives, representing different national traditions and experiences in the field of time use surveys, a certain degree of criticism is natural and expected. It is unlikely that there is a design that would be approved in all its details by all Member States and that would still produce internationally comparable data of high quality.

3.1 Preliminary results - data sets

10. There were roughly 190 households in each national pilot, with the exception of Sweden with fewer than 100, giving approximately 3400 households. These are the achieved sample sizes and represent a general response rate of 60-65 percent (see DOC.E2/TU/PILOT/13.1/97). A main survey is expected to produce a higher response rate than a pilot survey, especially as the estimation of non-response rates is not a principal objective of the pilots.

11. In addition to object non-response, there are other kinds of non-response and other divergences that might influence data quality.

12. As stated earlier, the survey design was built on a potentially problematic combination of components (see pilot survey design and objectives). One is the combination of the household as a unit of inquiry with randomly selected diary days and a data collection instrument (the diary) which requires a certain minimum level of skill to be filled in properly. Another presumably problematic element is the constraints on the interviewers work and the organisation of the field work caused by the randomly selected diary days.

13. A complete set of data from a household should consist of

- a completed household questionnaire
- one completed individual questionnaire for each household member aged 10 or over
- two completed diaries for each household member aged 10 or over. The diaries should be filled in for the designated diary days.
- one week diary for each household member aged 10 or over in employment (will be disregarded below)

14. Any divergence from this indicates incompleteness in the data. Therefore it was most important to test its interrelation. For instance, it might not be each questionnaire itself which is complicated and demanding, but the combination and amount of forms.

5.2.1 Completeness of achieved data

15. Completeness at the *individual level* means that there is an individual questionnaire and two diaries representing the designated days. Disregarding Slovenia, the proportion ranges from 72 to 85 percent, where all data from individuals were available as requested (see Table 1). Individual questionnaires are missing for 0 to 10 percent of the household members, on average 5 percent, excluding the week diaries.

16. Completeness at the *household level* means that the data are complete for all household members aged 10 or over (see Table 2). For obvious reasons, the proportions of incomplete data are higher than for the individuals. They vary substantially between countries, from 5 to 33 percent if postponed diaries are accepted. Further analysis is required before any conclusions can be drawn, particularly in cases of high proportions of incompleteness. If, for example, the analysis concerns division of labour between spouses, missing or incomplete data for children are of less importance.

Availability and postponement of designated days

17. Two diary days, a weekday and a weekend day, were selected in a random-like procedure. Neither the interviewers nor the respondents were supposed to have any influence on which days to select for keeping a diary. This sort of procedure is very demanding for the organisation of the field work, a problem that has been discussed frequently within the time use project.

18. To what extent did the respondents in fact fill in diaries for the designated days, and to what extent were the days postponed? Postponement of diary days was permitted according to a set of rules.

19. Both diaries are missing for 5 to 7 percent (exceptions for Albania and Slovenia). Only a few cases were found where only one diary was missing (see Table 4). In Finland about 14 percent of the diary days were postponed, less in other countries (on average 5 %). Thus the general conclusion is that postponement of diary days was not a major problem and that the results exceed the expectations.

20. The design of filling in the diary on the same days for all household members was highly accepted (see Table 5). On average, about 95 % of the household's diaries were filled in on the same days, which gave good evidence for the feasibility of using the household as the unit of inquiry in terms of achieved household members (this does not say anything about quality).

5.2.2 Aspects of data quality in the diary data

Episodes

21. A commonly accepted, indirect, general measure of quality in time use data is average number of *episodes*² registered in the diaries. The average number of episodes can be seen as an indicator of quality of the survey, with an average around 25 episodes seen as a "good" level when counting all episodes (see Table 6). Women are expected to have a higher number of episodes than men. Based on all episodes in the pilot surveys, the average number of episodes for women is 27 and for men 23. Using only the primary activities, women have on average 24 episodes and men 20 episodes. The data collected in the pilot surveys thus give the expected level of episodes.

Respondents' reactions

22. In general, relatively few respondents expressed problems in connection with filling in the diaries. Up to 10 percent, in most countries significantly fewer, answered "yes" as to having problems filling in the diary. Men were more reluctant to fill in the diaries than women; some parents felt their children might be overburdened. In some cases older people needed some help.

Coding the activities

23. The activity code system was designed in a hierarchical way and should also reflect the different kinds of problem in the reporting/classification process in the pilot survey. Specific codes were developed to handle unwanted, but to some extent expected, cases.

24. Ideally, all activity episodes should be coded in as detailed a fashion as possible. One, two, three or four-digit coding were offered. On average, more than 95 % of the activities could be coded at the 3-digit-level (see Table 7). In all countries, it is just a fraction of the total time which could not be coded in a

² An episode is a time slot with the same information which can vary in its duration. As soon as one information changes, a new episode starts. E.g. Eating cooking a meal without and with watching TV children.

way that reflects the use of time. Empty lines without any clue are not frequent in the diaries and will therefore only influence the overall picture marginally. These results far exceed expectations.

25. The inclusion in the diary of a section for secondary activity did not cause real problems. Some groups of respondents rarely report secondary activities. This may prove to be good grounds for eliminating the column as a way of facilitating the completion of diaries. However, secondary or parallel activities serve not only to actually measure the time spent on these activities but also, very importantly, to make it easier for the respondents to fill in the diary and to avoid multiple main activities, which cause problems in coding the diaries. It is therefore strongly recommended to include secondary activities in the diary, regardless of the data quality.

Help question

26. The help question “ Was this helping somebody outside the household?” in the diary seems to be a weak point. In the National reports it was criticised by many countries. Analyses of the data also indicate that there were problems. Exclusion, or at least revision of the help question would seem to be necessary. The importance of the help question in the diary should also be judged against the fact that the same topic is covered in both the individual and household questionnaires. These appear to have worked out better.

4. Conclusions

27. At this stage in the evaluation process the following preliminary conclusions can be drawn:

- the general survey design seems reasonable and practicable, and is not associated with any major problems,
- a few modifications appear to be necessary,
- despite apparent differences between countries, a harmonised design seems feasible.

28. Even though evaluation of the pilot survey concept is still ongoing, it is almost probable that final guidelines on Harmonised European Guidelines will mainly be based on the pilot survey design, as it proved good evidence. However, budget constraints may cause difficulties in the launch of full Time Use Surveys in all countries during next years. Furthermore The Statistical Programme Committee (SPC) has rated the project as low priority in the context of the 5-year Working Programme (1998-2002) and the Working Programme 1998, although some Member States opposed this decision. Therefore the future of the project will be subject of further consultation with the Member States. If countries wish to continue the project Eurostat may release final documents by the end of 1998.

REFERENCES AND DOCUMENTS

- [1] Szalai A. (1972): The Use of Time. Daily activities of urban and suburban populations in twelve countries. The Hague.
- [2] Harvey A. (1993): Guidelines for Time Use Data Collection. *Social Indicators Research*. Vol 30, Nos. 2-3.
- [3] DOC E3/IS/5/92: Time Budget Research in Europe, prepared by J. Gershuny
- [4] DOC E3/IS/3/93 :Draft Proposal for the Methodology of the European Time Use Survey, prepared by J. Gershuny
- [5] SPC/94/15/8: Time Use Survey
- [6] Doc E2/TU//2/95: Italian and Swedish Pretests, mainly prepared by K. Rydenstam (SCB)
- [7] Doc E2/TU/3/95: Alternative solutions of carrying out the pilot survey, prepared by K. Rydenstam (SCB)
- [8] Doc E2/TU/Pilot/2/96: Guidelines on the Survey Design, prepared by K. Rydenstam (SCB)
- [9] Doc E2/TU/Pilot/3/96: Household Questionnaire
- [10] Doc E2/TU/Pilot/4/96: Individual Questionnaire

- [11] Doc E2/TU/Pilot/5/96: Diary (day/ week diary), prepared by K. Rydenstam (SCB)
- [12] Doc E2/TU/Pilot/6/96: Instructions on Survey Forms
- [13] Doc E2/TU/Pilot/7/96: Variable list and Microdata files
- [14] Doc E2/TU/Pilot/8/96: Data entry and Data Processing
- [15] Doc E2/TU/Pilot/9/96: Monitoring the Pilot Survey, prepared by K. Rydenstam (SCB)
- [16] Doc E2/TU/Pilot/10/96: Documents on Training Seminar
- [17] Doc E2/TU/Pilot/11+1296: Coding list and Coding diary
- [18] Doc E2/TU/Pilot/13.1/13.2/96: Evaluation of the Pilot Survey part I and part II (part II prepared by K. Rydenstam (SCB))
- [19] Doc E2/TU/Pilot/14/96: Diskettes and Installation Guidelines for the Data Entry Application
- [20] Doc E2/TU/Pilot/15/96: Application's User Manual
- [21] Doc E2/TU/Pilot/16/96: Newsletter
- [22] Doc E2/TU/Pilot/17/96: Towards a Harmonised European Time Use Survey - Brief description

Appendix: Preliminary results, including 8 countries

Table 1 Complete set of forms, by country. Individual level.
Frequencies, percent.

		Complete	2 diaries, other dates	Other deviations	Total
Albania	Num.	599	80	147	826
	%	73	10	18	100
Bulgaria	Num.	401	77	30	508
	%	79	15	6	100
Finland	Num.	344	69	65	478
	%	72	14	14	100
Greece	Num.	0	607	16	623
	%	0	97	3	100
Lithuania	Num.	433	54	30	517
	%	84	10	6	100
Luxemb.	Num.	373	32	33	438
	%	85	7	8	100
Slovenia	Num.	305	125	141	571
	%	53	22	25	100
Sweden	Num.	169	27	7	203
	%	83	13	3	100
All Countries	Num.	2624	1071	469	4164
	%	63	26	11	100

Table 2 Complete set of forms, by country. Household level.
Frequencies, percent.

		Complete	2 diaries, other dates	Other deviations	Total
Albania	Num.	144	23	81	248
	%	58	9	33	100
Bulgaria	Num.	143	39	24	206
	%	69	19	12	100
Finland	Num.	121	26	39	186
	%	65	14	21	100
Greece	Num.	0	226	12	238
	%	0	95	5	100
Lithuania	Num.	151	25	22	198
	%	76	13	11	100
Luxemb.	Num.	160	16	24	200
	%	80	8	12	100
Slovenia	Num.	89	38	72	199
	%	45	19	36	100
Sweden	Num.	62	10	6	78
	%	79	13	8	100
All countries	Num.	870	403	280	1553
	%	56	26	18	100

Table 3 Same or different diary days within households. Households with multiple diarists. Frequencies, percent

	Same days		Different days		Total Number
	Number	%	Number	&	
Greece	236	99	3	1	239
Luxembourg	194	97	6	3	200
Sweden	77	100	.	.	77
Albania	230	97	7	3	237
Bulgaria	180	87	26	13	206
Lithuania	192	97	6	3	198
Slovenia	160	88	22	12	182
All countries	453	95	72	5	1525