



Statistical Indicators on the Labour Market in the eEconomy (STILE)

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Agenda

1. Presentation of the pilot test results
2. Presentation of the recommendations for the introduction of an ad hoc module on telework in the LFS
3. Critical review of the work
4. Presentation of the Austrian experiences with the LFS module on telework
5. Discussion on the recommendations
6. Discussion on the dissemination of results

1. Presentation of the pilot results (Francesca della Ratta-IRES)

The aim of WP5 consists in the identification of comparable indicators, useful to measure and monitor the development of telework practices in employee surveys. The US-experience with piggybacking a limited module to an existing questionnaire has been the starting point of the work. The consortium had put forward the objective to develop a module that would make it possible to define teleworkers. As there is no consensus on a definition and because new forms may emerge thanks to contemporary technologic evolutions, the consortium opted for a deductive approach of telework. In general the module should make it possible to gain statistical information on:

Work that has become possible using a new technologies, which takes place outside the traditional workplace, and which is carried out with a certain intensity.

The first step of WP5 STILE was to discuss a set of indicators to be inserted within the statistical inquiries on European labour forces. Given that there might only be very few questions added to the questionnaires, the partners' decision is that the output of the work package will be a list of indicators - **core indicators**, indispensable to detect teleworkers, and **additional indicators**, useful to describe teleworkers and work environment.

On the basis of these indicators, a questionnaire was put together which was tested on 718 workers in four European countries (Belgium, Italy, Hungary and Great Britain) during the pilot inquiry. When putting together the sample, an attempt was made to ensure the typological representation of the population under analysis (workers and teleworkers), and to include a sufficient number of teleworkers to allow the functioning of specific questions on telework to be tested.

The pilot testing of the telework module was carried out in different participating countries (Belgium, Hungary, Italy and United Kingdom). In these countries 718 questionnaires were collected. The shape of the pilot testing differs from country to country, depending on the national opportunities. In Hungary, the pilot survey was carried out as an ad hoc module of the quarterly Labour Force Survey in the period July-September. In Ireland, the STILE partners (CTC and CSO) inserted a limited and slightly adapted version of the UK LFS questions on telework which were to be included in the third quarter of 2002.

Given that the objective of the project is not to measure the extension of telework but to identify the indicators that allow it to be measured, the sample wasn't a random one. Therefore, it is impossible to assess the statistic significance of the results. The analysis of the pilot results was focused on

the assessment of the feasibility of the developed module to measure telework by the piggybacking method.

Through the work it was ascertained that the following telework indicators and questions are useful to detect and characterise teleworkers.

Indicators useful to pinpoint teleworker are:

- a) place of work;
- b) time spent working at a distance;
- c) use of ICT.

These indicators were at the basis of the core questions in the test surveys. The experiences have taught us that it is better to deduce various telework definitions on the basis of three indicators. This method is better than the inductive method in which respondents are asked whether they are a teleworker in one question only (referring to a specific definition).

The pilot experience has taught that combinations of these indicators make constructions of various typologies of telework possible. In the work one typology is developed. The workplaces were grouped according to four general categories: traditional workplaces (e.g. offices), exclusively remote work locations (e.g. worker's home), exclusively mobile work locations and mixed work locations (home, office or mobile).

The most important result that emerged from the inquiry is that telework from mixed work locations (multilocal eWorker) is the most common. The use of technology allowed the simple home-workers to be pinpointed whereas the time spent working at a distance allowed a distinction to be drawn between regular teleworkers and occasional ones.

On the whole, the typology of telework found in the 4 countries has the following breakdown:

Type of teleworker	Percentage
Non-teleworker	34
Multilocal eWorker	47
Telehomeworker	9
Mobile eWorker	1
Occasional telehomeworker	2
Occasional multilocal eWorker	7

Source: Data of the STILE pilot test 2002, Belgium, Italy, UK and Hungary, processed by IRES

In conclusion, apart from the increasing importance of multilocal work, it is important to stress the efficacy of the approach that allows the individuation of teleworkers through the combination of several variables.

Because there is no overall agreement on the definition of telework, we recommend the collection of data in objective terms. This strategy allows defining teleworkers in different ways that correspond to various policy questions, which could involve labour issues, transportation, diffusion of technology or others.

2. Presentation of the recommendations – Giovanna Altieri (IRES)

The pilot testing allowed the feasibility of the telework questions proposed for workpackage 5 to be analysed. In the analysis of the results the focus was mainly on the relevance, the completeness and the usability of the indicators. The most important lessons that could be drawn up on the basis of the pilot testings are listed below.

- The experience has taught that extending questions on telework also to the second job is believed to be of little use. Surveying technological equipment in detail also proved to be burdensome and ineffectual.
- The best results on the place of work were obtained by presenting the non traditional workplaces first to the respondents (home, mobile station) then the traditional ones.
- The utility of having information on ICT use for all the population interviewed has become clear.

The remarks on the original module have been translated into the following proposal for the telework module. This module must be able to estimate the number of teleworkers for each country and to sketch a picture of the teleworkers based on their telework modalities.

The essential questions that could be used are the following:

- a1. **Do you use a computer for your work?** (yes/no question) [FILTER QUESTION]
- a2. **Do you use the Internet or email for your main job?** (yes/no question)
- b. **In the last four weeks (reference week and 3 weeks before) have you carried out work at any of the following places?** (multiple answer)
 1. In your own home
 2. At locations belonging to a third party (as customer premises)
 3. On the move (while travelling)
 4. In more than one location belonging to customers or clients
 5. Other places different from traditional workplaces (hotels, conferences, etc.)
(Specify: _____)
 6. In more than one location belonging to your employer
[no teleworker - stop questionnaire]
 7. At just one location belonging to your employer
[no teleworker - stop questionnaire]
 8. Other traditional workplaces (specify: _____)
- c. **In the last 4 weeks (reference weeks and 3 weeks before), approximately how many hours a week, on average, did you spend working at a distance (from your employers' location)?**
- d. **Would it be possible to work in this way without the technology?** (yes/no question)

The only thorny question concerns the order of the A and B question. The discussion in the European usergroup focused on this question. In preparation to this discussion the consortium made an inventory of the pros and cons for taking the ICT indicator as the first indicator. On the one hand, asking all respondents if they use ICT technologies can provide an interesting result, on the other hand, the filtering power of this question is rather low and is destined to diminish in the future due to the increasing diffusion of computer use in the workplace. Moreover it is not clear whether the respondent uses the technologies to work at a distance. However, it is suggested that it is important to mention that the definitive order of the questions depends on the whole context of the questionnaire (questions, target group, research question, etc.) to which the module is attached.

3. Critical review of the work – Joanne Pratt (Joanne H. Pratt Associates)

The aim of the project is to identify indicators to monitor telework in employee surveys.

There was a full trial on Irish LFS – 39,000 interviewed; the general results on eWork are consistent with USA and SIBIS findings. Teleworkers are non-farm, well educated, managers and professionals who telework on a regular or occasional basis. Women with young children are most likely to work at home.

In the STILE questionnaire the objective questions (place of work and equipment) worked well but subjective questions as judgements on intensity of telework (such as 'regularly', 'frequently', 'possibly') were problematic.

The STILE experience demonstrated that it is better to obtain definitions derived from several indicators so as to allow the various users to concentrate on data considered to be more relevant for their interests. As highlighted by the results of the Irish survey, combining several indicators can give various definitions of telework responding to diverse user requirements.

Telework is evolving so that it is important to know more about mobility, ways of accessing Internet and Internet access from mobile phones. There is a need to consider the evolving trends in technology and this to be reflected in questionnaires. For example there has been an increase of 20 million Internet users in one year and also broadband is becoming popular more for leisure as well as work.

To analyse the telework phenomenon in the LFS can supply the counts and employment details, other surveys can give more details through additional indicators.

Final cautions:

1. derive telework definitions so data can be compared;
2. piggybacked questions must fit context and sequence of surveys;
3. reports of data must include sample, filters used and routing of questions to avoid misinterpretations.

4. Presentation of the Austrian experiences with the LFS module on telework - Mr. Hammer (Statistic Austria)

Telework is a new work model developed in the 90s that is not only a statistical issue. Decision-makers were invited to discuss the first proposal of the questionnaire on telework in Austria. As with STILE there was much discussion on the definition of telework and strategies to detect this phenomenon. It was decided to have flexibility to adapt questions, with no focus only on employees.

The main dimensions used to detect telework were as follows: use of computer, place of work, method of transfer of work and time spent working at a distance. The questions were simple and asked one to one. They were inserted in the 1997 and 2000 LFS. The telework questions were asked to all respondents who indicated having used a computer in their main occupation. The general outline of the questions were as follows:

1. Do you use the device exclusively at your workplace?
2. In which place do you use a computer for professional purposes?
3. How do you transfer work results? Email, in person, etc.
4. How many hours per week do you use the computer at home?

Extra questions:

1. Is there a formal agreement with your employer?
2. Do you or your employer cover expenses for the equipment?

In 2000 question 2 was adapted: the most important difference is whether they worked at home and if so do they also work from other places? The answer was almost nihil. In 2000 the telework

questions were also asked for the second job. The results were the same as the STILE results; there were no teleworkers for second job.

The results of the questions on time dedicated to telework and how work results are transferred led to three variations for telework to be drawn up:

- variation 1: work is carried out on the computer at home, equivalent to at least one working day (8 hours); transfer of work results by dataline, telephone, fax;
- variation 2: work carried out at home for at least one hour; transfer of work results exclusively by dataline;
- variation 3: same as variation two; in addition transfer is possible also by telephone and fax. results by phone, fax.

From the experience of the 2000 survey, it can be ascertained that too many additional questions can load the survey in general.

5. Discussion on the recommendations

The discussion was focused on 4 main issues:

1. PC-usage question and the core module as a whole;
2. composition of the module;
3. implementation strategies;
4. impact measurement.

5.1 PC-usage question and the core module as a whole

Background information on the reason for including the question on the PC-usage for work in general is given. The question that was central to the discussion was: 'What is the filtering power of this question?' The most important conclusions are:

- The question can filter out people at the moment (only 40% uses a PC for work). This may be not possible anymore in the future when PC is generally used for work.
- Insight into PC usage for work is of general interest, not as a filter.
- The question offers opportunities for cross tabulations with place indicator. These cross tabulations can be useful to define various work forms. The decision on the question whether the variable should function as a filter depends on the research question.
- The order of questions is dependent on the research question and the carrier.
- Problem: the question on ICT usage when working at a distance remains unanswered.

This discussion led to the question on the best method to gain information on ICT usage when working at a distance. The discussion revealed various alternatives to indicate the ICT usage when working at a distance:

1. importance of technologies to work at a distance;
2. methods to transfer work that is carried out at a distance;
3. equipment used when working at a distance;
4. intensity of using a PC – being online when working at a distance

The pros and cons of these alternatives were subject of discussion.

- Alternative 1: importance of technologies to work at a distance.
 - This is a subjective measure. Nevertheless, experience in the UK and in Ireland has taught that the question works.
 - The complex formulation makes it difficult to translate the indicator into an equivalent question in other languages.
- Alternatives 2 and 3: method of transfer and equipment used.
 - The indicator is not applicable to all teleworkers (not all teleworkers transfer work).
 - The pitfall of starting from a clear definition from the STILE consortium should be avoided. The consortium can not decide whether the usage of ICT when working at a distance is a

prerequisite to be filtered out as a teleworker. This decision depends on the specific research question.

- These indicators offer opportunities for various combinations, thus allowing computing various typologies.
- Alternative 4: intensity of PC and internet usage at a distance.
 - The difficulty to measure intensity of Internet usage is emphasised (New technologies allow permanent connection.). A possible solution to this problem that is suggested in the discussion is to include the answering category; 'I am an ADSL-user'.
 - The question on the intensity of PC usage when working at a distance did not work very well in the pilot test.
 - The indicator is important, especially for the group of multilocational workers, which is an important group.

There is no consensus whether it is relevant or not to include the intensity of PC/internet usage, neither on the way this indicator is to be surveyed. The discussion resulted in the proposal to conceive the indicator a 'nested question', i.e. an extension of the PC and Internet usage at a distance.

Interim conclusion on the core module

- The module should be presented as a list of indicators and variables, rather than a list of questions. The indicators can eventually eventually illustrate with questions (because the concrete wordings of the questions depend on the carrier questionnaire).
- The final composition of the telework module depends on the carrier and on the research question. The context determines which nested and additional questions should be included.
- The choice of variables that are to be included in a cross tabulation to define telework or that need to function as a filter, depends on the specific research question.
- The essential indicators and questions that could be used are the following:
 - a1. **Use of computer for main work** - Do you use a computer for your work? (yes/no question- to be asked to all respondents)
 - a2. **Use of Internet and email for main work** - Do you use the Internet or email for your main job? (yes/no question- to be asked to all respondent)
 - a3. **Place of work** - In the last four weeks (reference week and 3 weeks before) have you carried out work at any of the following places? (multiple answer- to be asked to all respondents)
 1. In your own home
 2. At locations belonging to a third party (*as customer premises*)
 3. On the move (*while travelling*)
 4. In more than one location belonging to customers or clients
 5. Other places different from traditional workplaces (*specify: _____*)
 6. In more than one location belonging to your employer
[no teleworker - stop questionnaire]
 7. At just one location belonging to your employer
[no teleworker - stop questionnaire]
 8. Other traditional workplaces (*specify: _____*)
 - a4. **Time spent working at a distance** - In the last 4 weeks (reference weeks and 3 weeks before), approximately how many hours a week, on average, did you spend working at a distance (from your employers' location)?
 - a5. **Use of computer when working at a distance** - Do you use a computer for your work? (yes/no question)
 - a6. **Use of Internet or email when working at a distance** - Do you use the internet or email for your main job? (yes/no question)

5.2 Composition of the module

In the discussion on the composition of the module focused on the question whether the module is complete and whether there are superfluous indicators.

Lacking indicators

Suggestions that were made with respect to this are:

- It will be important adding a question on regularity of telework (in addition to the question on the intensity during the reference period, it is important to know whether this happens regularly).
- The indicator on the provision of ICT needs to differentiate between the responsibility for infra-structural (equipment) costs and usage cost (e.g. phone and subscription costs).
- An indicator on the voluntary nature of the arrangement is believed to be lacking. This question is however partly answered by the indicators on the initiator of the arrangement and that on the reversibility of the arrangement.
- The content of work is mentioned as an important indicator that is left untouched in the STILE work.
 - In this respect the activity question allows to find out whether core activities are carried out at a distance or whether only preparatory or administrative tasks can be carried out at a distance. In Belgium it was even asked whether one uses an ICT link to carry out these tasks. It is however important to mention that the experience is that the question (open question) that asked for the activity carried out at a distance is too complex and is often answered by a general 'job description'.
 - Alternatives to the activity indicator as an indicator to the content of work are:
 - offering general categories (using a 'layman' description of preparatory-core-administrative and organisational tasks) instead of an open question (see Belgian suggestion in final report);
 - various activities that ICT are used for. (see the Eurostat internet module).
 - Nevertheless, the content of work is not relevant to be asked in the context of the LFS, it is a question that can be interesting in other questionnaires.

In addition to core indicators, the consortium selected several additional indicators on the 'work environment' of telework in order to get a more detailed description of the features of telework, which respond to the requirements raised in the discussion. The additional questions that are assessed by the European usergroup to be included in the module are:

- b1.intensity of connection with the company or the customer when working at a distance;
- b2.means used to transfer results of work (personally, post courier, fax, telephone, email, internet, software for remote collaboration, other);
- b3.equipment used when working at a distance (computer, email, telephone, fax, internet, intranet, software for remote collaboration, other);
- b4.who initiated the arrangement (employer, worker, both);
- b5.whether formal or informal arrangement;
- b6.reversibility (to have the choice of ceasing to telework – or to continue teleworking);
- b7.assessment of changes in work pressure after starting to telework;

Superfluous indicators

- Motivation question:
 - This is conceived to be too complicated for an LFS-telephonic interview. Especially the fact that proxies may be asked to give the answers causes problems. But, as motivation is an important indicator, it is relevant in the context of other questionnaires.
 - If this indicator is translated to a specific question, it is important to offer multiple answering opportunities.
 - It is important to include supply and demand side motives as well as 'nature of the job'.
- Assessment of the impact on work pressure:
 - The importance of this indicator is discussed, but it is concluded that it is important one from a policy point-of-view.

- The translation into a specific question caused the problem of wording. It is discussed whether work-pressure or stress is the best. The usergroup concluded that work pressure is preferable.
- Importance of a question on the impact on the work-life balance is emphasised.

5.3 Implementation strategies

The European usergroup also discussed on the implementation strategies for the telework module.

- It is generally agreed that the LFS is not the only possible carrier for ad hoc module. However, the LFS lends itself very good to attach a module. The fact that it forms a collection of all relevant indicators offers a lot of opportunities to gain information on telework in an efficient way. The pilot test indeed illustrated that various cross tabulations with a limited set of telework indicators can offer a lot of relevant information.
- The problems with using the LFS as a carrier are also discussed. The most important ones are; competition of various subjects of ad hoc modules, the need for simple questions, the limited number of questions allowed in a module.

5.4 Impact measurement

The importance of impact measurement recognised. Impact on work-family balance emphasised (cf. 5.2: Composition of the module).

5.5 General conclusion

- The module should be an overview of variables that are useful to measure telework (core-additional- nested questions – other interesting variables). These variables should be illustrated with concrete questions.
- Choices for the variables should be justified by pilot test experiences.
- This way future users can play with variables in order to find an answer to the specific research question, taking into account the characteristics of the carrier (content, existing variables, method of data collection, etc.).

6. Planning for dissemination

The planning for the dissemination of the work was the latest point of attention for the European usergroup. The following suggestions were made:

- Special issue of the newsletter in which the conclusions of the workpackage on the telework module (WP5) and on the various national LFSs (WP2) are presented.
- Efforts addressed at:
 - Eurostat (Labour market statistics);
 - OECD;
 - Foundation for working conditions;
 - Eurobarometer.
- Pay attention not only to the question on 'How to measure' telework, but also on 'Why to measure telework' (= raising awareness of the importance).