TIME USE SURVEY 2013-2014

Quality Report (ESQRS)

Hellenic Statistical Authority (ELSTAT)
Reference Year 2013

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1 Contact

1.1 Contact organization	Hellenic Statistical Authority (ELSTAT)
Contact organisation unit	Population and Labour Market Statistics Division Special Household Surveys Section (G53)
1.3 Contact name	1. Giorgos Ntouros 2. Ilias Lagos 3. Amalia Andrikopoulou
1.4 Contact person function	1. Head of Section 2. Responsible person for organizing and supervising the survey/ questionnaires design/ variables' and coding index definitions/ interviewers training/ recommendations for logical and computerized checks and coding process/ data base operation/ quality report /data dissemination etc. 3. Responsible person for organizing and supervising the survey/ questionnaires design/ translation and writing recommendations for interviewers/ organizing the interviewers training/ data base operation/ data
1.5 Address	18510, Pireos 46 and Eponiton str, PIRAEUS, GREECE
1.6 Contact email address	1. g.ntouros@statistics.gr 2. i.lagos@statistics.gr 3. a.andrikopoulou@statistics.gr
1.7 Contact phone number	(+30) 213 - 135 - 2174 (Giorgos Ntouros) (+30) 213 - 135 - 2900 (Ilias lagos) (+30) 213 - 135 - 2188 (Amalia Andrikopoulou)
1.8 Contact fax number	(+30) 213 135 2906

2 Introduction

The production of quality reports is part of the implementation of the TUS instrument. In order to assess the quality of data at national level and to make a comparison among countries, the National Statistics Institutes give detailed information mainly on: the entire statistical Process, sampling and non-sampling errors, and potential deviations from standard definition and concepts.

This document follows the ESS standard for quality reports structure (ESQRS), which is the main report structure for reference metadata related to data quality in the European Statistical System. It is a metadata template, based on 13 main concepts, which can be used across several statistical domains with the purpose of a better harmonization of the quality reporting requirements in the ESS.

The Time Use Survey (TUS) is a national survey collecting information from a representative sample of households, on households' composition, living conditions, members' employment status and health, and mainly, focusing on the way members spend their time during a whole weekday or a weekend day, i.e. the use of their whole daytime by main activity (work, domestic work, care-giving, travel, leisure time, etc), by second/parallel activity etc.

The TUS is the most appropriate source in order to:

- Estimate as possible unpaid work and non-market production (hidden economy)
- Estimate the working time spent in eligible types of work (part-time jobs, work during the weekend, etc)
- Estimate women' unpaid work and its contribution to the time spent with their family members
- Make exclusions on how households members spend their time.

TUS data about the domestic output in connection with the unpaid domestic activities may add to the satellite accounts of household production.

Gender analysis is recognized as an essential component of TUS design, analysis and aggregated outputs.

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3 Quality management – assessment

In order to improve the comparability of the survey results among all the Member-states of the EU, the data quality of the Time Use Survey is ensured and achieved on one hand because it is in compliance with the Statistical principles in the European Statistics Code of Practice and on the other hand by using a common standard questionnaire. Quality assessment of the survey is accomplished by EL.STAT and Eurostat.

The sample size corresponds to high accuracy results. Consequently, the sample size was representative of the reference population for the survey while also all the appropriate measures were taken into account in order to minimise the errors during the survey conduct. On the basis of the all the pre-mentioned above, ELSTAT achieved total high quality for the statistical products of the survey.

4 Relevance

The main purpose of the survey is to collect information regarding time use of each member of the household (over 10 years) 24 hours a day, by activity, so it can be used to fill the gaps in the available information of social statistics. Moreover, the TUS is the most appropriate source in order to:

- The completion of existing statistical data used to investigate the extent of the differences between gender,
- The conclusions for policy-especially gender issues relating to the reconciliation of work and family life and the sharing of time between paid and unpaid work,
- The most accurate estimate of GDP
- The as possible estimate of the true size of the 'hidden' economy,
- The estimate of the hours, especially people who are engaged in flexible forms of employment (part-time, contract work, weekend work, etc.),
- The conclusions regarding how have household members of their time.

The main user of the survey is Eurostat as well users coming from:

- Ministries and public administrations, that use the data for economic and social policy planning purposes
- Universities (teachers/graduate and post graduate students), research organizations, e.t.c.
- Private firms
- The public that often gets the information via mass media in publications made by the statistical offices

4.2 Relevance - User Satisfaction

In general, there are steps taken to promote data use. These are:

- Consultation from data users

ELSTAT is collecting formal and informal feedback from HBS' data main users.

- Dissemination of aggregated HBS data accomplished in several ways:
  - Electronic publication of tables
  - Print-out tables
  - Dissemination of tables and metadata (statistical and methodological contents, questionnaires, etc.) via internet ("www.statistics.gr")
  - Press releases in different topics
- Promotion of users' microdata base

A users' microdata base has been constructed, using the anonymisation criteria adopted also in the EU-SILC project. This base is available to anyone interested for free. The database includes all existing in the questionnaires variables while the expenditure and income have been transformed on a monthly basis. Another microdata base has also been constructed containing the list of all Eurostat proposed Variables.

4.3 Completeness

The variables and data coming from the survey have been judged as having completeness and analysis in a high quality grade.

4.3.1 Data completeness - rate– (%)

5 Accuracy and reliability

The concept of accuracy refers to the precision of estimates computed from a sample rather than from the entire population. Accuracy depends on sample size, sampling design effects and structure of the population under study. In addition to that, sampling errors and non-sampling errors need to be taken into account. Sampling error refers to the variability that occurs at random because of the use of a sample rather than a census and non-sampling errors are errors that occur in all phases of the data collection and production process.

5.1 Accuracy - overall

Because of the fact that the Time Use Survey is a sampling survey, we have sampling and non-sampling errors. For 2013/2014 the initial sample size was 3.737 households (sampling fraction 0,08%) equally distributed within the year, so as to have four (4) equally dependent samples, corresponding to the four quarters of the year. The total number of Prefectures and Communes selected amounted to 337 and the number of settlements to 360, while the number of sampling areas to 619. The achieved sample size was 3.371 households. The number of household members that responded in the survey amounted to 7.137 of which 379 belong to age category 10-14 years old while the rest 6.802 belong to age category 15+ years old. Individuals in age category 20-74 amounted to 5.361, and 2.240 of them were employed.
More details are presented in the following tables.

Table 1. Response rate (R%)

TUS 2013	Achieved net sample (n)	Response rate (R%)
EL	3.371	60,9

Table 2. Dwelling and Households sample

Dwelling Sample

1. Total ………………………...…………….………..… 3.737

α) Inhabited dwellings

no substitution …..…………….………..… 2.275

β) Inhabited dwellings

with substitution …...………..………… 1.096

due to:

i) Temporary absence of the household, incapacity, etc....………………..… 567

ii) refusal for cooperation …...........................….……………………..……..…. 529

2. Excluded for several reasons ….……..……………………………………………… 336

Total sample of dwellings …...............................………..……………...………. 3.737

Households' sample

Dwellings with 1 household.........……..…. 3.371 Households …….…….. 3.371

Dwellings with 2 or more households... 0 Households ....……… 0

Total households to be surveyed ….....…..........................…............................….. 3.371

Subtracting:

Unsuitable households ……................…………….............................……………... 0

Households which interrupted the survey before end …....…..…………….…...….... 0

..

Total households not being surveyed..…..…………………………………..………… 0

Households finally surveyed...........…………………............………..….……..... **3.371**

Table 3. Number of households for which an interview is accepted for the database. Quarter breakdown and total

Quarter	Households	%
1	825	24,5
2	871	25,8
3	849	25,2
4	826	24,5
Total	**3.371**	**100,0**

Table 4. Number of persons who are members of the households for which the interview is accepted for the database. Quarter group breakdown and total

Quarter group	Households' members	%
1	1.965	24,3
2	2.076	25,7
3	2.055	25,4
4	1.989	24,6
Total	**8.085**	**100.0**

Table 5. Quarter group Households' members %

Quarter group	%
1	75,5
2	73,1
3	69,6
4	51,3
Total	**67,5**

Table 6. Completed diaries per month

Completed diaries per month	
Monday	1.363
Tuesday	1.592
Wednesday	1.441
Thursday	1.416
Friday	1.347
Saturday	3.609
Sunday	3.506

Table 7. Completed diaries per day

Completed diaries per day	
March 2013	986
April 2013	1.384
May 2013	1.142
June 2013	1.155
July 2013	1.119
August 2013	1.091
September 2013	181
October 2013	809
November 2013	439
December 2013	3.188
January 2014	1.196
February 2014	1.584

5.2 Δειγματοληπτικά Σφάλματα

Standard errors and coefficients of variation calculated for the average time use for certain activities and subpopulations. These are presented in the following tables. For an estimate, the coefficient of variation is defined as follows:

$$CV\left(\hat{R}\right) = \frac{\sqrt{V\left(\hat{R}\right)}}{\hat{R}} *100$$

Detailed information on the sampling design and estimation procedure presented in Section 12. The average values and coefficients of variation for the 10 main categories of activity are presented in Tables 8, 9a and 9b below .

Table 8. Mean Time Use per Activity category

Activity	Mean Time Use (in min)	St. Error	CV	Deff
Personal care	705,0	3,2	0,4%	5,5
Employment	121,0	3,2	2,7%	2,1
Study	42,5	2,9	6,8%	3,6
Household care	167,6	2,3	1,4%	1,5
Voluntary work and meetings	11,7	0,6	5,5%	2,0
Social life and entertainment	86,7	2,0	2,4%	5,5
Sports and outdoor activities	25,2	1,5	6,1%	7,1
Arts, Hobbies, Computing and games	48,5	1,8	3,8%	3,9
Mass Media	172,3	2,7	1,6%	4,0
Travel	62,5	1,2	1,9%	4,9

Table 9a. Mean Time Use per Activity category and gender

Activity	Mean Time Use (in min)	St. Error	CV	Deff	Activity
Men	Personal care	708,2	3,5	0,5%	3,1
	Employment	161,7	5,0	3,1%	1,9
	Study	43,8	3,5	8,0%	2,5
	Household care	83,3	2,3	2,7%	1,9
	Voluntary work and meetings	8,6	0,7	8,0%	1,5
	Social life and entertainment	88,1	2,4	2,7%	3,2
	Sports and outdoor activities	31,7	1,8	5,6%	3,6
	Arts, Hobbies, Computing and games	63,2	2,7	4,2%	3,2
	Mass Media	185,6	3,3	1,8%	2,6
	Travel	69,9	1,4	1,9%	3,2
Women	Personal care	701,9	3,4	0,5%	3,4
	Employment	82,8	3,4	4,1%	1,7
	Study	41,2	3,5	8,5%	2,9
	Household care	246,5	3,6	1,4%	1,7
	Voluntary work and meetings	14,6	0,9	6,1%	1,7
	Social life and entertainment	85,3	2,2	2,5%	3,5
	Sports and outdoor activities	19,2	1,5	7,9%	5,0
	Arts, Hobbies, Computing and games	34,7	1,8	5,2%	2,9
	Mass Media	159,9	2,9	1,8%	2,7
	Travel	55,5	1,3	2,4%	3,4

Table 9b. Mean Time Use per Activity category and Age class

Activity	Mean Time Use (in min)	St. Error	CV	Deff	Activity
10-14	Personal care	704,3	8,3	1,2%	3,6
	Employment	1,7	1,2	71,6%	1,1
	Study	319,5	16,6	5,2%	3,2
	Household care	21,8	3,2	14,5%	3,0
	Voluntary work and meetings	2,0	0,5	27,5%	1,5
	Socal life and entertainment	47,8	3,6	7,5%	2,5
	Sports and outdoor activities	52,7	6,4	12,1%	3,3
	Arts, Hobbies, Computing and games	113,7	9,3	8,2%	3,5
	Mass Media	125,3	7,8	6,2%	2,7
	Travel	56,3	2,3	4,1%	2,2
15-19	Personal care	686,1	6,4	0,9%	1,9
	Employment	24,6	6,2	25,2%	1,6
	Study	288,6	23,0	8,0%	3,3
	Household care	36,9	4,2	11,4%	2,1
	Voluntary work and meetings	5,1	2,4	47,0%	3,9
	Social life and entertainment	78,1	7,2	9,2%	3,6
	Sports and outdoor activities	44,2	4,7	10,7%	1,8
	Arts, Hobbies, Computing and games	106,5	7,7	7,3%	2,2
	Mass Media	112,2	7,0	6,2%	2,2
	Travel	71,5	3,7	5,2%	2,8
20-24	Personal care	701,7	8,4	1,2%	3,1
	Employment	72,0	10,2	14,1%	2,0
	Study	111,2	12,8	11,5%	2,7
	Household care	79,0	8,0	10,1%	2,0
	Voluntary work and meetings	8,7	2,7	31,1%	2,3
	Social life and entertainment	89,5	6,4	7,1%	2,9
	Sports and outdoor activities	40,6	7,8	19,1%	4,8
	Arts, Hobbies, Computing and games	123,4	9,4	7,6%	3,0
	Mass Media	134,3	8,0	6,0%	2,6
	Travel	81,0	4,1	5,0%	2,4
25-34	Personal care	677,7	6,1	0,9%	3,4
	Employment	194,2	8,7	4,5%	1,9
	Study	13,2	2,9	22,2%	2,2
	Household care	152,6	8,0	5,2%	2,4
	Voluntary work and meetings	5,7	1,1	20,0%	2,3
	Social life and entertainment	81,9	3,7	4,5%	2,8
	Sports and outdoor activities	30,8	3,3	10,6%	4,3
	Arts, Hobbies, Computing and games	67,1	3,9	5,8%	2,3
	Mass Media	144,7	5,8	4,0%	3,2
	Travel	74,1	2,6	3,5%	3,8
35-44	Personal care	660,4	4,8	0,7%	2,5
	Employment	234,3	8,1	3,5%	1,7
	Study	1,9	0,8	39,5%	1,5
	Household care	205,1	6,1	3,0%	1,4
	Voluntary work and meetings	7,0	1,1	15,0%	1,2
	Social life and entertainment	71,9	2,8	3,9%	2,2
	Sports and outdoor activities	18,4	1,3	7,2%	1,8
	Arts, Hobbies, Computing and games	35,9	2,5	7,1%	2,2
	Mass Media	140,8	4,0	2,8%	2,0
	Travel	70,3	1,8	2,5%	2,0

Table 9b. Mean Time Use per Activity category and Age class (continued)

Activity	Mean Time Use (in min)	St. Error	CV	Deff	Activity
45-54	Personal care	670,4	5,6	0,8%	3,3
	Employment	209,4	8,3	4,0%	1,8
	Study	1,2	0,5	44,6%	1,8
	Household care	190,5	4,5	2,3%	1,0
	Voluntary work and meetings	9,4	1,2	12,3%	1,6
	Socal life and entertainment	78,2	3,2	4,1%	2,6
	Sports and outdoor activities	19,9	2,0	9,9%	2,2
	Arts, Hobbies, Computing and games	36,3	3,9	10,7%	3,7
	Mass Media	163,0	4,3	2,6%	2,0
	Travel	62,9	1,9	3,0%	2,3
55-64	Personal care	719,3	4,5	0,6%	1,7
	Employment	96,5	7,4	7,7%	1,6
	Study	0,2	0,1	70,3%	1,0
	Household care	209,5	5,5	2,6%	1,3
	Voluntary work and meetings	20,6	1,8	8,8%	1,1
	Socal life and entertainment	93,3	3,7	4,0%	2,2
	Sports and outdoor activities	20,3	1,8	8,7%	1,9
	Arts, Hobbies, Computing and games	25,8	2,0	7,8%	1,4
	Mass Media	196,0	4,7	2,4%	1,7
	Travel	58,5	2,1	3,5%	2,0
65-74	Personal care	751,4	4,7	0,6%	1,7
	Employment	12,3	2,3	19,0%	0,8
	Study	0,3	0,3	90,9%	0,9
	Household care	223,4	5,0	2,2%	0,9
	Voluntary work and meetings	24,3	2,0	8,0%	1,0
	Socal life and entertainment	103,6	3,5	3,4%	1,8
	Sports and outdoor activities	20,7	1,6	7,7%	1,2
	Arts, Hobbies, Computing and games	22,3	1,8	8,0%	1,2
	Mass Media	229,4	5,5	2,4%	1,7
	Travel	52,5	2,0	3,9%	1,5
75+	Personal care	802,6	4,8	0,6%	1,2
	Employment	1,9	0,7	36,7%	0,8
	Study	0,0	0,0		
	Household care	175,7	4,7	2,7%	1,0
	Voluntary work and meetings	16,0	1,4	8,5%	1,1
	Socal life and entertainment	124,0	3,7	3,0%	1,5
	Sports and outdoor activities	15,2	1,4	8,9%	1,1
	Arts, Hobbies, Computing and games	13,7	1,7	12,2%	1,3
	Mass Media	255,2	4,9	1,9%	1,3
	Travel	38,8	1,7	4,5%	1,5

5.3 Non sampling errors

The non-sampling errors can be divided into the following categories:

- Non response errors
- Elaboration errors
- Measurement errors

Non-response errors

In order to decrease the percentage of non-response, the following were implemented:

- An introductory / informative letter was sent almost one month before the survey launch in order to inform the households that they had been selected for the survey and asking for their cooperation and reliable information provision as well.
- Whenever the interviewer couldn't find, during the visit, the surveyed household, he/she left the particular letter with the date of the next visit or his/her telephone number for contact (at least three visits at the surveyed household).

Elaboration errors
Quality and quantity checks were made on the data base for the elaboration errors correction

Measurement errors
These errors were faced with the following ways:

- Provision of appropriate guidelines
- Training
- Checks made by ELSTAT and by EUROSTAT as well (logical/completeness/flow etc)

5.3.1 Coverage error

HBS is a household survey carried out by applying the two-stage stratified sampling with Primary Sampling Unit (PSU) the area (one or more building blocks) and final unit the household. Thus, there are two frames used, which are:

- the frame containing the PSUs (areas) and
- the frame of households within the selected PSUs.

The frame of PSUs is updated every ten (10) years through the general population census. Concerning the frame of households, within each selected PSU this is updated before the selection of the sampling households used for data collection.

Therefore, possible coverage errors may arise mainly due to the frame of the surface units. However, such errors are corrected using auxiliary variables (calibration process) in calculating the weights, as described in the relevant paragraph.

5.3.1.1 Over-coverage - rate – (%)

5.3.2 Measurement error

Measurement errors can occur because of the questionnaire, researchers and their training, the surveyed, the flow, the skills of researchers (checked before the start of the survey).

1-Questionnaire
For the design of individual questionnaires and the questionnaire household used all mandatory social variables and variables from several guidelines EUROSTAT (GUIDELINES ON HARMONISED EUROPEAN TIME USE SURVEYS, Annex II, Annex III, HETUS 2008). Diaries and weekly schedule of working hours were designed exactly as described by the guidelines of EUROSTAT (Annex IV, Annex VI, HETUS 2008).
Also, in order to finalize the questionnaires, taken into account all the observations related to questionnaires of other countries and experience from similar surveys and suggestions of key users of research data.

2-The interviewers and their training

All interviewers recruited had experience in household Family Budget Survey. The interviewers attended a training course before starting the fieldwork .
A manual was distributed and presented during the training. A "general guidelines' manual" containing information about the objectives of the survey, the organization of it, legal and administrative aspects related with it, fieldwork aspects (how to contact the household, how to introduce oneself, who answers which questions, time delays, e.t.c.) and the content and correct completion of the questionnaires.

Successful fieldwork calls for careful planning of the interviewer's work. The crucial aim is to capture time-use data for the designated days. A well-planned schedule for the fieldwork is essential in order to achieve this goal. Such a schedule is suggested below, where the necessary fieldwork activities and their proposed timing in relation to the diary days are listed. The schedule should be seen as an example of how to organise the fieldwork. The purpose is to maximise the likelihood of reaching the households in time. The schedule presupposes that the sampled households have telephones at their disposal. If not, the schedule needs to be adjusted and contacts made in alternative ways.

3-The respondents
The Respondent in some cases (mainly older people) did not complete the diaries, namely primary and secondary activities in sufficient detail or with great difficulty (because of problems eg writing, language, health, etc.). In some cases, a phone call or a text message from the interviewer was needed. One recommended alternative is to leave a special reminder card with the actual diary dates.

Guidelines for respondents on filling in the diaries

- It is important to read the instructions and examples before diary keeping, as this will make it easier to fill in the diary.
- Main activity
  - Write down in as much detail as possible what you did during every 10 minute slot, not just 'Was with a friend', 'Was outdoors' (especially children)
  - Write only one main activity on each line
  - Do not leave any empty lines in the first column
  - Mark the duration of activities clearly with equals signs, arrows, etc.
  - Do not forget to separate the travel from the activity and also record the location and mode of transport in the appropriate column
  - Mention help given to another household, also when this is at the same time for the respondent's own household.
  - Do not forget to indicate the use of a computer or internet.
- Record the secondary activity when something is done simultaneously with the main activity. Do not forget to indicate the use of a computer or internet.
- Record whether the time is spent alone or together with people you know. You need not necessarily be doing the same thing as these other people.
- Do not forget to answer the questions at the end of the diary, in order to give necessary background information on the type of day.
- Check your diary using the checklist at the end of the diary.

4- No errors in the routing were made.
No errors in the routing were made.

5-Skills tested before starting the fieldwork
Interviewers were both personnel of the Hellenic Statistical Authority and external collaborators, all experienced with other household surveys carried out by ELSTAT. More specifically, all the researchers recruited had experience at least the household Family Budget Survey.

5.3.3 Non-response errors are

Non-response errors are errors due to an unsuccessful attempt to obtain the desired information from an eligible unit. Two main types of non-response errors are considered, unit non-response and item non-response.

5.3.3.1 Unit non-response - rate (%)

In paragraph 5.1 above unit response rates are presented, so the respective non-response rates are depicted here. Households non-response rate was 39,1% initially, while after the substitutions it was 9.0% (connected with par. 12.5.2). The household non-response rate (before substitutions per quarter on the achieved sample size was the following.

Table 10. Initial household non-response rate per quarter and total
(on the achieved sample size, before substitutions)

Quarter group	% non respose
1	24,5
2	26,9
3	30,4
4	48,7
Total	**32,5**

5.3.3.2 Item non-response – rate

5.3.3.2.1 Item non-response rate by indicator

5.3.4 Processing error

Concerning Data Processing we mention the following:

1- Checking errors
The questionnaires were checked in two stages, for their completeness and logical consistency of data collected, and for their correct data entry. More specifically, the officials in charge of the checks, in accordance with the interviewers' guidelines and taking into account other objective facts, checked the data among the different questionnaires and also correlated them with data of households living in the same region, in order to verify the correctness of the answers. Mistakes were corrected and any unclear answers were clarified in cooperation with the interviewer or the interviewee.
After that, data entry was done and massive computer checks were made, while using appropriate computer programs tables with survey's data were drawn up.
During all stages of fieldwork the interviewers were under the continuous supervision of skilled employees of the Unit in charge of ELSTAT

2- Coding
The nomenclature used for the survey were the Codes Activity, Location, Transportation based ACL2008 (Activity Coding List for Harmonized European TUS) HETUS 2008 (see. Annex 5). The codification of questions relating to occupation (ISCO), economic activity of the local unit (NACE) and nationality was done by experienced personnel, according to ISCO-88, ISCO-08 (double codification) and NACE rev.2.

3- Other checks and problems
Several plausibility checks have been made. During the data processing of raw data ACCESS- 2000, SPSS and Oracle (golden 32) were used.

After entering the data and compiling lists the daily average hours and minutes for sleep was 9:22 minutes. The final result (8:38, i.e. a 40 min):
The steps followed were:
1. Correction:
- errors in data entry
- Calendars with hours of sleep over 14 (communication with Investigational - replacing sleeping with other activities usually did)
- coding errors
  - Code 011 (sleep) instead of code 012 (patient in bed)
  - Code 011 (sleep) instead of code 531 (rest, relaxation)

2. Replacement quarters with another activity after contacting at least 10 households. More specifically identified investigational with many hours of sleep, over 10 hours, which were:
- Internet connection - without any corresponding activity
- Pet - without care or walk with the dog
- TV - without watching TV
- Garden- without care
- Children under 9 years without any housework

With many households contacted in each of these cases had a positive answer, ie there were many hours of sleep and had at least a quarter of the above activities. Then we changed sleeping quarters with the above activities using information from other households and their members with approximately the same characteristics.

5.3.4.1 Imputation - rate
5.3.4.2 Common units - proportion
5.3.5 Model assumption error
5.3.6 Data revision

5.3.6.1 Data revision - policy
The revision policy concerns either the survey data or the survey itself (i.e. the questionnaire, the sample etc), and takes place having into consideration the users' needs for any further statistical information.

5.3.6.2 Data revision prctice
Since all current users' needs have been recognized, in order to achieve longitudinal comparability for the survey among the Member- States, all the national questionnaires are being re-designed carefully.
In conclusion, the data revision takes place after implementing checks materialized either by Eurostat or by EL.STAT and after correcting data inconsistencies within either the same period or longitudinal as well.

5.3.6.3 Data revision - average size

5.3.7 Seasonal adjustment

6 Timeliness and punctuality

6.1 Timeliness
TUS cross-sectional data are available in the form of tables, usually, 200 days after the end of the data collection period.

6.1.1 Time lag - firtst result

6.1.2 Time lag - final result

6.2 Punctuality
No time lag between the actual date of data provision and the initial defined as target-date (date in which the data should have been produced)

6.2.1 Punctuality - delivery and publication

7 Accessibility and clarity

7.1 Dissemination format - News release	The press release is published on 11/12/2014. http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/PressReleases/A0804_SFA30_DT_DC_00_2013_01_F_EN.pdf While the press Time Use of employed persons published on 27/2/2015. http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/PressReleases/A0804_SFA30_DT_DC_00_2013_02_F_EN.pdf
7.2 Dissemination format - Publications None	None
7.3 Dissemination format - online	None
7.3.1 Data tables - consultations	
7.4 Dissemination format - microdata access	The micro data files are provided to the users after submitting their application form in the competent section. In particular, they must be addressed to the Statistical Information and Publications Division in the following e-mail data.dissem@statistics.gr We mention also that the users are being informed for survey data announcement through the EL.STAT website. Statistics must be developed, produced and disseminated in a neutral manner so that all users are given equal treatment, in conformity with the statistical principles as set out and further elaborated in the European statistics Code of Practice.
7 7.5 Documentation on methodology	The present ESQRS is uploaded on ELSTAT's official website together with all relevant information. Also technical documentation on HBS is available on ELSTAT's web site. More specifically: • A short methodological report oriented to the users • A metadata report in Euro-SDMX metadata structure requested by Eurostat. Classification and codification Activities, Places, Transportation, Household Characteristics and Housing, Services and Occupations.
7.5.1 Metadata completeness	
7.5.2 Metadata	
7.6 Quality management - documentation	Everything relevant is included in the present report.
7.7 Dissemination format - other	

8 Comparability

8.1 Comparability - geographical

Since common variables definitions and data production methods have been implemented not only in all geographical regions of the country but also among all EU countries, no geographical comparability problems have been caused.

8.1.1 Asymmetry for mirror flow statistics - coefficient

8.1.2 Reference population

Reference population	Private household definition	Household membership
The reference population is all citizens officially living in Greek territory (population de facto). The source of our sample is the Population Census. This Census includes all private households and their current members residing in the territory independently of any socio-economic characteristics they may have. Persons living in collective households and in institutions are excluded from the target population as well as households with diplomatic missioners as members.	The recommended by Eurostat household definition is used. Household is defined as a person living alone or a group of people who live together in the same dwelling and share expenditures including the joint provision of the essential of living.	All household members at the time of the interview are selected for a personal interview. Subject to the further and specific conditions shown below, the following persons must, if they share household expenses, be regarded as household members: 1. Persons usually resident. Related to other members 2. Persons usually resident. Not related to other Members 3. Persons usually resident. Related to other members 4. Persons usually resident. Not related to other members 5. Resident boarders, lodgers, Tenants 6. Visitors 7. Live-in domestic servants. au-pairs 8. Persons usually resident but temporarily absent (because of holidays, work, studies, e.t.c.) 9. Children of the household being educated away from home 10. Persons absent for long periods. but having household ties like persons working away from home 11. Persons temporarily absent but having household ties like persons in hospital or other institutions Further conditions for inclusion as household members are as follows: (a) Categories 3, 4 and 5: Such persons must currently have no private address elsewhere; or their actual or intended duration of stay must be six months or more. (b) Category 6: Such persons must currently have no private address elsewhere and the actual or intended duration of their absence from the household must be less than six months. (c) Category 7 and 8: Irrespective of the actual or intended duration of absence, such persons must currently have no private address elsewhere, be the partner or child of a household member, continue to retain close ties with the household and consider this address as their main residence. (d) Category 9: Such persons must have clear financial ties to the household and be actually or prospectively absent from the household for less than six months.

8.1.3 Reference period

As Reference periods are considered the time intervals having a specific starting and ending date.
Used two diary days, i.e. one weekday (Monday-Friday) and one weekend-day (Saturday or Sunday).
The diary days/dates be allocated to households/individuals by a controlled random procedure. The survey fieldwork should be spread over 12 consecutive months, as average time use over a year is estimated for very different activities, and there are probably different seasonal patterns for many of the activities on which people spend time.
The survey days/dates are representative of, and cover a full 12-month period, i.e. 365 consecutive days, preferably including potentially problematic days and periods like Christmas and New Year.

8.1.4 Statistical concepts and definitions

As dwellings were considered:

- A detached, semi-detached or terraced dwelling, an apartment or flat in a block of flats,
- An occupied room or number of rooms inhabited by the household.
- A warehouse, shanty, trailer or any other covered place, which was used for habitation (as main dwelling) during the survey.

As dwellings were not considered:
The places intended for habitation but during the survey were used exclusively for other purposes (professional residences, etc.), i.e. apartments used as laboratories, infirmaries, etc.

Regular room
As regular room was considered any private place within the dwelling having at least an area of 4 squared meters and 2 meters height, shape such as for a normal bed to fit in and having direct day-light through a window or glass door.
As regular rooms were considered:
The dining rooms, drawing rooms, living rooms, bedrooms, domestic servants' rooms and attics, kitchens, domestic warehouses, corridors and halls complying with the regular room's definition.
As regular rooms were not considered:
Bathrooms, toilets, laundry rooms, balconies and garages, kitchens of any size, storage rooms, corridors and anterooms when they didn't fulfill the conditions of the regular room.

Household
Household is the unit of survey and analysis. As a household is considered one person living alone (single-person household) in a dwelling, or a group of persons, related or not (multi-person household) occupying the same dwelling, providing from common budget their feeding and all things being necessary for living (common housekeeping).
Persons living in the same dwelling but with no common housekeeping and not eating together were deemed to be separate households, provided that each person had the exclusive use of one room. In the opposite case they consisted one household. More specifically:
Single-person households were considered:
One person living in the dwelling or in a room of a dwelling, obtaining alone all needed for living (e.g. student, unmarried man/woman, etc.), two or more persons, related or not, residing in a dwelling but not obtaining from common budget all needed for living, each one having the exclusive use of one room and not sharing any common place (sitting room, office, excluding hall, etc.).
Multi-person households were considered:
A couple alone or parents with their children or one parent with his/her children, a couple with or without children, the couple's parents and the domestic servant (living in the dwelling) if she/he plans to stay for more than 6 months, two or more persons –not necessarily related, residing in a dwelling and providing from common budget all needed for living, a family with one to five lodgers
Household Members
As members of the household were considered all persons constituting it. They were persons, usually residing in the dwelling or being temporarily absent.
Persons, usually residing in the dwelling, were considered those having spent, during the last 6 months, most hours of the day and night in the specific dwelling.
Persons, temporarily absent, being in another private household or in a collective one (e.g. hospital, elderly home, etc.), were considered and registered as household members, according to the following conditions:

- **Persons usually resident, related to other members** (unmarried / married children, parents of household's head, grandchildren, other relatives, etc.) sharing expenditure or benefiting from them as not having income (children, persons with no income, etc.).
- **Persons usually resident, not related to other members** (partners, etc.) sharing expenditure or benefiting from them as not having income (children, persons with no income, etc.).
- **Resident boarders, lodgers, tenants** (up to 5) sharing expenditure or benefiting from them as not having income (children, persons with no income, etc.) and either didn't have during the survey conduction any other private address elsewhere or intended to stay in the household for more than six months.
- **Visitors**, related or not, sharing expenditure or benefiting from them as not having income (children, persons with no income, etc.). and either didn't have during the survey conduction any other private address elsewhere or intended to stay in the household for more than six months. Visitors not intended to stay for more than six months having another private address elsewhere as main dwelling, were not considered household members and haven't been interviewed.
- **Live-in domestic servants,** residing and sharing expenditure or benefiting from them and either didn't have during the survey conduction any other private address elsewhere or intended to stay in the household for more than six months. External domestic servants were not considered household members and haven't been interviewed.

- **Persons temporarily absent** from the dwelling (for reasons of holiday travel, work, education or similar) sharing expenditure or benefiting from them as not having income (children, persons with no income, etc.) that didn't have during the survey conduction private address elsewhere and their actual or intended duration of absence from the household was less than six months.
- **Children** of the household **being educated away from home,** residing in dormitories and **children in military service** sharing expenditure or benefiting from them as not having income, irrespective of the actual or intended duration of absence, not having during the survey conduction private address elsewhere, being partner or child of a household member and should continue to retain close ties with the household and consider this address to be their main residence. Students being educated away from home residing in another private dwelling irrespective of their intention to retain close ties with the household, considering this other address to be their main residence, were not considered as household members
- **Relatives absent for long periods** (sailors, employees in railways, intercity buses, public servants working away from office, etc.) sharing expenditure or benefiting from them as not having income, irrespective of the actual or intended duration of absence, not having private address elsewhere, being partner or child of a household member and should continue to retain close ties with the household and consider this address to be their main residence.
- **Persons temporarily absent but having household ties,** in hospital, elderly home, etc. sharing expenditure or benefiting from them as not having income, having financial ties to the household being expected to return to the household in less than 6 months.

Head of household
As head of the household was considered the person being approved by the other household members, in the sense that this person has the responsibility for the decision making concerning the household's management, in general.
As head of the household were considered:

- The father, in most of the cases of households consisting from parents and children (either married or unmarried).
- For households consisted from related or not persons, the older working member (man or woman) or, in case nobody was working,
- the oldest member.

Economically active members
As economically active members were considered:
The members 14 years old and over, which during the week before the survey conduction had a job or didn't have but were seeking for one (working and unemployed).

Reference person
As reference person was considered:

- The head of the household, if he/she was economically active (having or searching for a job). When the head of the household was
- neither working nor searching for a job, in order him/her to be considered as reference person, there shouldn't be any other
- economically active person in the household.
    - The spouse or partner of the head if he/she was working or searching for a job in case that the person declared as head was not
- economically active.
    - The oldest member of the household, being economically active, if the head/s spouse/partner was not economically active.
- The head of the household if no one else in the household was economically active.

Income
As household income as the sum of earnings in cash or in kind of household members from work or other sources. Revenues are considered wages, pensions, earnings from agriculture, livestock, trade etc. Business, revenue from rental real estate, interest and dividends, social benefits, regular transfers between households etc.
In the household questionnaire recorded the total monthly net income of the household member questionnaire while the monthly net income from employment and income from self-employment.

Concepts and definitions of diary

What were you doing?
In the "What were you doing?" column we would like you to record your activities for every 10-minute period. The diary starts at 04.00 (am) and covers 24 hours, three hours a page. The example on the following pages will give you an idea of the level of the detail we want. If you did more than one thing at the same time, please write the one you regard as the *main* activity. Don't record more than one main activity on each line. If you did one thing after another within a 10-minute interval, record the activity that took most time. If you were doing something you feel is too private to record, please write "personal". Indicate whether you used a PC or the internet to do the activity.

Gainful employment. You neither need to record what you were doing during working time. Register what you do during breaks; for example "Lunch break, had lunch", and "Lunch break, went for a walk". Also mention work brought home and done at home.

Studies. Write if you study at home or attend classes/lectures. Record the type of study: secondary school, university, etc. If the studies are part of paid work, please say so.

Travel. Separate the travelling itself from the activity that is the reason for travelling; for example "Walked to the bus stop" - "Went by bus to shop" - "Bought food" - "Went back home". Record the mode of transport in the "Where were you" column

House work and childcare. Record what you were really doing; for example “Cooked supper”, “Set the table”, “Washed the dishes”, “Put my child to bed”, “Mowed the lawn”, “Cleaned the car”, “Cleaned the dwelling”.

Reading (except studies). Record *what* you read; for example “Read a newspaper”, “Read a novel”, “Read a magazine”, “Read non-fiction”.

Help to other households. If the main activity was help of some kind - totally or in part - given to somebody outside your own household then report this in the diary. For example, if you helped your friends repairing their house, record the activity as “Helped friends repairing their house”. Similarly, you report if you helped a neighbour or relative by buying food for them. Report on the help even if you bought food for your own household as well.

What else were you doing?
If you were doing more than one thing at the same time, record the second activity in the “What else were you doing” column. Suppose you were taking care of your child (main activity) and watching television at the same time, then record “watching television” as parallel activity. *You* decide which is the main and which is the secondary activity. Please remember to mark the duration of parallel activities, which might differ from the duration of the main activity.

Where were you?

Write in where you were at that time. E.g. "Home", "At friends' home" or if travelling "in a car", "on a bus, "on a train", "on a bicycle" or "on foot".

Were you alone or together with somebody you know?
For each 10-minute period, please tick one or more boxes to show if you were alone or together with somebody you know. To be together does not necessarily mean that you actually do things together but rather that somebody else is on hand (e.g. at home). You could have put more than one “x”on each line, and this number of “x’s” may change during an activity that covers more than one 10-minute interval if a person leaves or arrives. You don’t have to answer this question for sleeping time.

8.2 Comparability - over time

The TUS is carried out for the first time in Greece.

8.2.1 Length of comparable time series

8.3 Comparability – domain

9. Coherence
The coherence of two or more statistical outputs refers to the degree to which the statistical processes, by which they were generated, used the same concepts and harmonized methods.
Comparison of the Time Use Survey 2013 – 2014 with the corresponding results of other surveys ELSTAT are presented below.

9.1 Coherence - cross domain
The health status of household members derived from the Time Use Survey 2013 - 2014, and other important figures of the survey, compared with the corresponding figures obtained from the Survey on Income and Living Conditions (EU-SILC) 2013 and the Household Budget Survey 2013. Also comparisons were made with the results of the Labour Force Survey. No significant differences in the results, as shown in the tables in the following paragraphs.

Also note that when comparing the results of Research slots with HBS and EU-SILC for example, should bear in mind the differences in concepts and methodologies used and very likely due to the fact that investigations serve different purposes. The HBS research aims to study of household expenditure, while the EU-SILC in their income.

9.1.1 Coherence - sub annual and annual statistics –SILC (health status)

Table 11: General health : 2013 EU-SILC – TUS %

General health	2013 – 2014 TUS	2013 EU-SILC
Very good	52,3	46,0
Good	28,9	28,1
Fair	12,6	15,5
Bad	4,4	7,5
Very bad	1,7	2,9

Table 12: Suffer from any chronic illness or condition: 2013 EU-SILC – TUS %

Suffer from any chronic illness or condition	2013 – 2014 TUS	2013 EU-SILC
Yes	81,7	83,0
No	18,3	17,0

Table 13: Limitation in activities because of health problem: 2013 EU-SILC – TUS %

Limitation in activities because of health problem	2013 – 2014 TUS	2013 EU-SILC
Yes, strongly limited	43,9	49,0
Yes, limited	46,9	46,2
No, not limited	9,2	4,8

9.1.2 Coherence - sub annual and annual statistics _SILC -HBS

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Table 14: HH021: "Tenure status" %

Tenure status	2013 – 2014 TUS	2013 HBS	2013 EU-SILC
Owner	80,6	81,4	78,3
Tenant	19,4	18,6	21,7

Table 15: HH010: "Dwelling type" %

Dwelling type	2013 – 2014 TUS	2013 HBS	2013 EU-SILC
Detached house	42,7	43,6	41,2
Apartment	56,5	55,5	58,8
Other	0,8	0,9	0,1

9.1.3 Coherence - sub annual and annual statistics _SILC -HBS -LFS

Table 16: PL031: "Self defined current economic status" %

Self defined current economic status	2013 – 2014 TUS	2013 HBS	2013 EU-SILC	2013 LFS
At work (Full + Part time)	36,6	38,3	37,0	37,6
Unemployed	13,8	14,5	15,7	15,5
Non economically active	49,6	47,2	47,3	46,9

Table 17: PE040: "Highest ISCED level attained".% n

Highest ISCED level attained	2013 – 2014 TUS	2013 HBS	2013 EU-SILC	2013 LFS
Never attended any level of education	8,9	6,0	5,9	5,0
Primary education	20,7	20,0	21,8	25,3
Lower secondary education	12,6	12,4	11,7	11,6
Upper secondary education	31,1	32,8	32,4	31,3
Post secondary non tertiary education	6,8	7,0	6,2	6,4
First stage of tertiary education	17,7	21,5	21,6	20,1
Second stage of tertiary education	2,1	0,3	0,5	0,4

Table 18: Household type %

Household type	2013 – 2014 TUS	2013 HBS	2013 EU-SILC	2013 LFS
One person household	25,7	25,7	25,7	28,6
Two persons household	29,5	29,5	29,5	30,2
Three persons household	19,8	19,8	19,8	18,5
Four persons household	17,6	15,5	15,5	16,9
Five persons household	5,4	5,4	6,9	4,3
More than six persons household	2,1	4,2	2,7	1,1

Table 19: PL140: " Type of contract " %

Type of contract	2013 – 2014 TUS	2013 HBS	2013 EU-SILC	2013 LFS
Permanent job / work contract of unlimited duration	74,6	90,4	78,0	90,1
Temporary job/work contract of limited duration	25,4	9,6	22,0	9,9

Coherence – internal

10 Cost and Burden

The burden concerns the required time, which must be spent for data provision on behalf of interviewer. Nevertheless, there is not possibility for any further time relief.

11 Confidentiality

11.1 Confidentiality - policy

The issues concerning the observance of statistical confidentiality by the Hellenic Statistical Authority (ELSTAT) are arranged by articles 6, 7 and 8 of the Law 3832/2010, as amended by article 90 paragraph 8 of Law 3842/2010 and by article 10 of Law 3899/2010, as well as by article 8 of Law 2392/1996, which was brought back into force, in accordance with article 90 paragraph 8 of Law 3842/2010.
Furthermore, ELSTAT disseminates the statistics in compliance with the statistical principles of the European Statistics Code of Practice and in particular with the principle of statistical confidentiality.

11.2 Confidentiality - data treatment

- ELSTAT protects and does not disseminate data it has obtained or it has access to that could enable the direct or indirect identification of the statistical units that have provided them by the disclosure of individual information directly received for statistical purposes or indirectly supplied from administrative or other sources.
ELSTAT takes all appropriate preventive measures so as to render impossible the identification of individual statistical units by technical or other means that might reasonably be used by a third party. Statistical data that could potentially enable the identification of the statistical unit are disseminated by ELSTAT if and only if:
a) These data have been treated, as it is specifically set out in the Regulation on Statistical Obligations of the agencies of the Hellenic Statistical System (ELSS), in such a way that their dissemination does not prejudice statistical confidentiality or
b) The statistical unit has given its consent, without any reservations, for the disclosure of data.

– The confidential data that are transmitted by ELSS agencies to ELSTAT are used exclusively for statistical purposes and the only persons who have the right to have access to these data are the personnel engaged in this task and appointed by an act of the President of ELSTAT.

– The Statistical Confidentiality Committee (SCC) operating in ELSTAT, examines issues referring to the observance of statistical confidentiality. Within its competence is to recommend on:

- The level of detail at which statistical data can be disseminated, so as the identification, either directly or indirectly, of the surveyed statistical unit is not possible;
- The anonymization criteria for the micro data provided to users;
- The granting to researchers access to confidential data for scientific purposes.

12 Statistical processing

Detailed information concerning sampling frame, sampling design, sampling units, sampling size, weights and mode of data collection can be found in this section. Such information is mainly used for the computation of the accuracy measures.

12.1 Source data The survey covers all the private households throughout the country, irrespective of their size or socio-economic characteristics. The following were excluded from the survey:

- Institutional households of all types (boarding houses, elderly homes, hospitals, prisons, rehabilitation centers, camps, etc.)
- Households with more than five lodgers and
- Households with foreigners serving in diplomatic missions.

12.1.1 Sample design

1.1 Type of sample design and sampling units

The two-stage area sampling was applied for the Time Use Survey 2013. The sample of private households was selected in two stages and the individuals of the household who were above the age of 10 years old were surveyed. The primary units are the areas (one or more unified building blocks) and the ultimate sampling units selected in each sampling area are the households.

1.2 Stratification and sub-stratification criteria

There are two levels of area stratification in the sampling design. The first level is the geographical stratification based on the partition of the total country area into thirteen (13) Regions corresponding to the European NUTS 2 level. The two former major city agglomerations of Greater Athens and Greater Thessaloniki constitute separate major geographical strata. So, the number of geographical strata in the first level is 15.

The second level of stratification entails grouping municipal and local communities within each NUTS 2 Region by degree of urbanization, i.e., according to their population size. The scaling of urbanization was finally designed in three groups:

Table 20: Stratum- Degree of urbanization

Urban	Municipal or Local Communities with 10.000 inhabitants or more
Semi-urban	Municipal or Local Communities with 2.000 to 9.999 inhabitants
Rural	Local Communities up to 1.999 inhabitants

The number of the final strata in the thirteen (13) Regions of the Country (except Greater Athens Area & Greater Thessaloniki Area) is 39. These were derived from the crossing of Region by the degree of urbanization. Additionally, the Greater Athens Area was divided into 31 strata of about equal size (equal number of households) on the basis of the lists of city blocks of the Municipalities that constitute it and taking into consideration socio-economic criteria. Similarly, the Greater Thessaloniki Area was divided into 9 equally sized strata. Thus, the total number of strata of the survey is 79. The two Major City Agglomerations account for about 37% of total population and for even larger percentages in certain socio-economic variables.

The initial sample size was 3.636 households (sampling fraction $\frac{1}{\lambda} \cong$ 0,09%). This fraction was the same in each Region.

Sample selection schemes

1st stage of sampling

In this stage, from any final stratum, say stratum $\boldsymbol{h}$, $\boldsymbol{n_h}$ primary units (areas) were drawn. The number $\boldsymbol{n_h}$ of draws was approximately proportional to the population size $\boldsymbol{X_h}$ of the stratum. The population size $\boldsymbol{X_h}$ of the stratum is defined by the number of households according to the population census of the year 2001 for the first 3 quarters and the population census of the year 2011 for the fourth quarter.

In each final stratum attention was paid so as the primary units drawn, to be a multiple of four. Thus, the sample of primary units can be divided in 4 sub-samples of equal size. The reference period for the time use data of each one of the 4 sub-samples corresponds to each one of the 4 quarters of the year, in order to allow for full representativeness of the individuals activities time use.

Each area unit (primary sampling unit) of the stratum had a selection probability proportional to its size. So, if $\boldsymbol{X_{hi}}$ was the number of households, according to the 2001 census population for the first 3 quarters and to the 2011 census population for the fourth quarter, of the area of order $\boldsymbol{i}$ in the sample, then the selection probability of the unit was:

$$P_{hi} = \frac{X_{hi}}{X_h} \quad (1)$$

The total number of the primary sampling units is 619. Due to non-response, the actual total number of primary sampling units is 591.

2**^{nd}* ***stage of sampling

In this stage from each primary sampling unit (selected area) the sample of ultimate units (households) is selected. Actually, in the second stage we draw a sample of dwellings. However, in most cases, there is one to one relation between household and dwelling. If the selected dwelling consists of one or more households then all of them are interviewed.

Let M_{hi} be the number of households during the survey period in the selected area *i* of stratum h. Out of them a systematic sample of m_{hi} households is selected with equal probabilities. Each of the m_{hi} households has the same chance to be included in the survey, equal to: $\frac{m_{hi}}{M_{hi}}$

In every selected primary unit, remains the determination of the sample size m_{hi}. The total number of individuals' households to be interviewed of the n_h selected primary sampling units will be

$$m_h = \sum_{i=1}^{n_h} m_{hi} \tag{2}$$

i.e. finally by applying the two stage sampling procedure, the sampling rate of households in stratum h is $\frac{m_h}{M_h}$, where $M_h = \sum_{i=1}^{n_h} M_{hi}$.

In repeated sampling, the numerator of this fraction will vary from sample to sample; to be more specific the fraction $\frac{m_h}{M_h}$ is a random variable. Within each primary sampling unit the calculation of the sampling interval $\delta_{hi} = \frac{M_{hi}}{m_{hi}}$ is carried out, so that the following two desired conditions are satisfied.

a) The expected result $\frac{m_h}{M_h}$ is the predetermined over sampling fraction $\frac{1}{\lambda}$ in each Region (NUTS 2): $E\left(\frac{m_h}{M_h}\right) = \frac{1}{\lambda}$

b) The estimator of the stratum total Y_h (for any characteristic) should be self-weighting. In other words, the calculated estimator is the result derived from the sum of the values of the characteristic over the m_h sample households by the overall raising factor λ, which is the same in each Region.

The conditions (a) and (b) are satisfied when:

$$\frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \frac{M_{hi}}{m_{hi}} = \lambda \quad \Rightarrow \tag{3}$$

$$\frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \delta_{hi} = \lambda \Rightarrow$$

$$\delta_{hi} = \frac{M_{hi}}{m_{hi}} = \lambda \cdot n_h \cdot P_{hi} \tag{4}$$

12.1.2 Sampling units	Households and household members
12.1.3 Sampling rate and sampling size	All relevant information has already been presented in the previous paragraphs of this chapter as well in paragraph 5.1 related with overall accuracy of the sampling design.
12.2 Frequency of data collection	Every 10 years

12.3 Data collection

The method of data collection is the Paper-Assisted Personal Interview (PAPI).

Questionnaires

The following separate questionnaires are used:

a) Household questionnaire –*(TUS:1)*

b) Individual questionnaire for members aged 15 and more –*(TUS:2)*

c) Individual questionnaire for members aged 10 to 14 years old –*(TUS:3)*

d) Time Use Diary for members aged 10 and more –*(TUS:4)*

e) Weekly Schedule of working time for jobholders only–*(TUS:5)*

In order to have the survey conducted as best as possible, auxiliary documents are used (i.e The map of the sampling areas and the Sampling Frames (constructed and updated)/ An advanced letter coming from the Central Service informing the household that it has been selected for the survey asking for its cooperation/ Completed diary given to all members (adults and children) as an example to help them filling in their own/ Activity, location and transport coding list, etc.

Way of Questionnaires' Completion

The aim of Time Use Survey is to collect data on time use for each household member aged 10 years and older. People living at the same address, sharing meals and sharing household budget are considered as members of the same household. A person is regarded as household member if he or she usually lives or is (temporarily) absent from his/her household and if he or she has stayed during the last 6 months into the specific household. Each household member aged 10 years and older shall fill in the personal questionnaire and the Time Use diaries.

- *The Household questionnaire (TUS:1)* shall be used in a face-to-face interview with a person familiar to the circumstances of the household. Recommendations for the interviewer are given under each question. There are also titles to indicate the sub- theme.

- *The Individual questionnaire for members aged 15 and more –(TUS:2)* is intended to be used in a face-to-face interview, for members aged 15 and more. For members of the household not present on the day of the interview it could be completed either in a telephone interview, or in a proxy interview. Recommendations for the interviewer are given under each question There are also titles to indicate the sub- theme.

- *The Individual questionnaire for members aged 10 to 14 years –(TUS:3)* is intended to be used in a face-to-face interview, for members aged 15 and more. For members of the household not present on the day of the interview it could be completed either in a telephone interview, or in a proxy interview. Recommendations for the interviewer are given under each question. There are also titles to indicate the sub- theme.

- *The Time Use Diary for members aged 10 and more –(TUS:4*) is a "leave behind" questionnaire for which the interviewer should give brief instructions. Assuming that not all members are present at the interview, written instructions must be given in the diary. They should not be too long and should be easy to read and understand. Completed diaries are given to all members (adults and children) as an example to help them filling in their own. Each respondent gets two diaries to complete: one on a weekday and one on a weekend day. The designated days are written on the cover of the diaries. The respondent is not allowed to change the diary days.

- *The weekly schedule of working time –(TUS:5*) (one sheet) should be filled in by all jobholders in the household aged 15 and more. The first day of the sheet should be the same as the first diary day, no matter whether this is a weekday or a weekend day.

12.4 Data validation

Data validation is done by conducting qualitative and quantitative tests based on:

- Longitudinal checks on raw data (checks with data of previous years)
- Comparisons of key variables with variables / data of other statistical sources

Calculation of sampling errors is also used as a criterion for the final validation of data.

12.5 Data compilation

Please find below a description of the weighting, estimation and imputation process.

12.5.1 Weightings

Let w_{hij} (>0) stand for the survey weight attached to the sample ultimate unit (household) of order j ($j = 1,..., m_{hi}$), belonging to the selected area of order i , of stratum h . The w_{hij} is the product of three factors: a) the inversion of the inclusion probabilities of the ultimate sampling units, b) the inversion of the response rate r_h in stratum h and c) a factor t_{hij} , which makes weighted sample estimates to conform to external total values (values from known totals from censuses, administrative sources, population projections etc). The weight w_{hij} is defined as follows:

$$w_{hij} = p_{hij}^{-1} \cdot r_h^{-1} \cdot t_{hij}$$

where:

p_{hij} : Inclusion probability of the hij ultimate unit

r_h : Response rate of the ultimate units in stratum h

t_{hij} : Factor that adjusts the total of households and individuals to external data

Inclusion probabilities of households

A two-stage sampling scheme was applied, according to which in the final strata the areas were selected with probabilities proportional to their sizes and within the selected areas the households were selected with equal probabilities. Then the inclusion probabilities of households are defined, as follows:

$$p_{hij} = n_h \cdot P_{hi} \cdot \frac{m_{hi}}{M_{hi}} \Rightarrow p_{hij}^{-1} = \frac{1}{n_h} \cdot \frac{1}{P_{hi}} \cdot \frac{M_{hi}}{m_{hi}} \qquad (5)$$

where:

$P_{hi} = \frac{X_{hi}}{X_h}$: Selection probability of the hi area

X_{hi} : The number of households that belong to the hi area, according to the population census of 2001 (quarters 1-3) or 2011 (quarter 4)

X_h : The number of households that belong to stratum h , according to the population census of 2001 (quarters 1-3) or 2011 (quarter 4)

M_{hi} : The number of households in the hi area that are recorded in the updated sampling frame

m_{hi} : The initial sample size of households in the hi area that were selected from the M_{hi} units

Non-response adjustments

Within each final stratum non-response adjustment of the responding households was carried out by the inverse of the response rate, so as to adjust for non-responding cases in that stratum.

Adjustment to external data

The adjustment to external data was conducted. This involves the calibration of the household weights in conjunction with external sources. It enables the distribution of auxiliary variables at both household and individual level to coincide with the corresponding population distribution of the external data. The auxiliary variables used at household level are the household size and at individual level the gender and age (ten years age groups).

By applying calibration: a) the estimated households by size conform to the estimated number of households of the reference period resulting from the estimated population in the reference period, the projection of the trend observed between the population censuses of 2001 and 2011 and the results of 2011 population censuses b) the estimated population by gender and age conforms to the population projections for the reference period. These projections come from vital statistics (population census, births, deaths, migration, and population trend).

12.5.2. Estimation of survey characteristics

Let y_{hij} be the value of the characteristic **y** of the sampling household of order j, in the hi primary sampling unit (area). Moreover, Y_h stands for the stratum total, which results when adding the characteristic y for all households or household members included in stratum h.

The form of the estimator on the basis of the two-stage design is:

$$\hat{Y}_h = \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij} \cdot y_{hij}$$

Where w_{hij} is the final (adjusted) weight of the household

For estimating the characteristic **y** at country level, all stratum estimates $\hat{Y}_h$ should be added, as follows:

$$\hat{Y} = \sum_h \widehat{Y}_h$$

Estimation of a Ratio

The estimation of the number of households X_h in stratum h is calculated using the formula:

$$\hat{X}_h = \sum_{i=1}^{n_h} \sum_{j=1}^{m_{hi}} w_{hij}$$

while the estimation of the relevant characteristic in country level is calculated by adding all strata estimations, that is:

$$\hat{X} = \sum_h \hat{X}_h$$

The form of the estimator $\hat{R}$ (mean time use) on the basis of the two-stage design is:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}} = \frac{\sum_{h=1}^{H}\sum_{i=1}^{n_h}\sum_{j=1}^{m_{hi}} w_{hij} \cdot y_{hij}}{\sum_{h=1}^{H}\sum_{i=1}^{n_h}\sum_{j=1}^{m_{hi}} w_{hij}}$$

Variance Estimation

In order to estimate the variances of the required characteristics (mean time use for the various categories of activities), the following steps should be applied.

a. For every selected PSU i of the stratum h, we calculate the quantities T_{hi} and F_{hi} using the following formulas:

$$T_{hi} = n_h \cdot \sum_{j=1}^{m_{hi}} w_{hij} \cdot y_{hij}$$

$$F_{hi} = n_h \cdot \sum_{j=1}^{m_{hi}} w_{hij}$$

b. After having calculated T_{hi} and F_{hi} for every PSU i ($i = 1,2,..., n_h$) of stratum h, then :

$V\left(\hat{Y}_h\right)$ is calculated as:

$$V\left(\hat{Y}_h\right) = \frac{1}{n_h \cdot (n_h - 1)} \cdot \left[\sum_{i=1}^{n_h} T_{hi}^2 - \frac{1}{n_h} \cdot \left(\sum_{i=1}^{n_h} T_{hi} \right)^2 \right]$$

and

$V\left(\hat{Y}\right)$ (country level) is calculated by adding $V\left(\hat{Y}_h\right)$ for all strata h, that is:

$$V\left(\hat{Y}\right) = \sum_h V\left(\hat{Y}_h\right)$$

Correspondingly, $V\left(\hat{X}_h\right)$ is given by:

$$V\left(\hat{X}_h\right) = \frac{1}{n_{h}\cdot(n_h - 1)} \cdot \left[\sum_{i=1}^{n_h} F_{hi}^2 - \frac{1}{n_h} \cdot \left(\sum_{i=1}^{n_h} F_{hi} \right)^2 \right]$$

and

$V\left(\hat{X}\right)$ (country level) is calculated by adding $V\left(\hat{X}_h\right)$ for all strata h, that is:

$$V\left(\hat{X}\right) = \sum_h V\left(\hat{X}_h\right)$$

The variance of $\hat{R}$ can be calculated using the formula below

$$V\left(\hat{R}\right) = \frac{V\left(\hat{Y}\right) + \hat{R}^2 \cdot V\left(\hat{X}\right) - 2 \cdot \hat{R} \cdot Cov\left(\hat{Y}, \hat{X}\right)}{\hat{X}^2}$$

where

$$Cov\left(\hat{Y}_h, \hat{X}_h\right) = \frac{1}{n_{h}\cdot(n_h - 1)} \cdot \left[\sum_{i=1}^{n_h} T_{hi} \cdot F_{hi} - \frac{1}{n_h} \cdot \left(\sum_{i=1}^{n_h} T_{hi} \right) \left(\sum_{i=1}^{n_h} F_{hi} \right) \right]$$

and

$$Cov(\hat{Y}, \hat{X}) = \sum_h Cov\left(\hat{Y}_h, \hat{X}_h\right)$$

In order to estimate the variances for mean time use for certain population subsets, the same procedure described above is followed. For that case, we also defined domain indicator variables in order to represent the specific population subsets (domains) required, (e.g. sex and age class)

Let,

- the specific population subset (the domain) be denoted U_d, where $U_d \subset U$ (whole population)
- the size of U_d be denoted N_d

then the value for the j unit (household reference person) in the selected area i of the final stratum h of the domain indicator variable is denoted as:

$$y_{hij} = \begin{cases} y_{hij} & if \quad i \in U_d \\ 0 & otherwise \end{cases}$$

$$w_{hij} = \begin{cases} w_{hij} & if \quad i \in U_d \\ 0 & otherwise \end{cases}$$

With the use of the domain indicators above and the procedure and formulas already described we estimated the characteristics and the

With the use of the domain indicators above and the procedure and formulas already described we estimated the characteristics and the sampling errors of the mean time use per activity of the specific subpopulations.

Concerning **Substitution** we can mention the following

- ***Dwellings being substituted***

Main dwellings being occupied were substituted if the cooperation with the household became impossible due to any of the following reasons:

  - Incapacity of the interviewee
  - Refusal
  - Temporary absence
  - Other reasons

Dwellings with which contact was not possible due to objective incapacity (ill, deaf mute, etc.) or due to temporary absence were substituted. In the cases of refusal any possible effort should be made in order to persuade the household to cooperate. In case the interviewers did not succeed in this, the dwelling was substituted. Finally in the cases of temporary absence the interviewee should visit the households at least three times.

- ***Dwellings not being substituted***

The dwellings that have been selected for the survey and have not substituted, are:

  - Empty dwellings
  - Secondary or country dwellings, whether occupied or not
  - Dwellings with members in diplomatic missions (e.g. ambassadors,
  - other countries' armed forces personnel, etc.)

- ***Way of substitution***

The substitution of households not co-operating should be as less arbitrary as possible. The interviewee should substitute the non-responding households with other having similar basic characteristics, e.g. similar synthesis, same type of ownership, same household are head profession. That is, each non-responding household should be substituted with the next household, from the list, having as much as possible, similar characteristics, except for the last household in the list. The way of substitution was checked by "TUS:7".

The response rate after substitutions was 91,0% while substitutions by quarter group are presented in the following table.

Table 21. Substitutions, by quarter group and total

Quarter group	%
1	24,5
2	26,9
3	30,4
4	48,7
Total	*100.0*

12.6 Adjustment

13 Comments

Annexes

Annex 1. Press releases

http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/PressReleases/A0804_SFA30_DT_DC_00_2013_01_F_EN.pdf
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/PressReleases/A0804_SFA30_DT_DC_00_2013_02_F_EN.pdf

Annex 2. Questionnaires (5)

http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_QS_DC_00_2013_00_2099_01_F_EN.pdf
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_QS_DC_00_2013_00_2099_02_F_EN.pdf
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_QS_DC_00_2013_00_2099_03_F_EN.pdf
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_QS_DC_00_2013_00_2099_04_F_EN.pdf
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_QS_DC_00_2013_00_2099_05_F_EN.pdf

Annex 3. Metadata (SDMX)
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_MT_AN_00_2013_00_2013_01_F_EN.pdf

Annex 4. Coding list for activities, location, transport mode, household's and dwelling's characteristics, countries and occupation
http://www.statistics.gr/portal/page/portal/ESYE/BUCKET/A0804/Other/A0804_SFA30_MT_DC_00_2013_00_2099_02_F_EN.pdf

Annex 5. Tables
http://www.statistics.gr/portal/page/portal/ESYE/PAGE-themes?p_param=A0804&r_param=SFA30&y_param=2013_00&mytabs=0

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