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Community Survey on ICT usage in households and by individuals 2019

Quality report

Please read this first!!!

General guidelines on using this template

- *In the title line of this page, please delete the non-applicable term (Metadata / Quality Report).*

- *Fill in the required information in the space (box) foreseen next to or below the item heading, if a box is irrelevant for your national survey, indicate 'non-applicable' to avoid we have to come back to you on this item. An increase of the box' size after inserting several lines or paragraphs is no problem. However, when reporting several pages for one item, we kindly ask you to give a short summary and refer to the full text in an annex.*

- *Keep the numbering of the chapters and items. Additional comments can be given at the end of the report.*

- *This template is designed to serve both the requirements for the <u>Metadata</u> as well as the <u>Quality</u> report.* ***Chapters 1 to 6 shall be completed for the metadata report (deadline for submission: before 31/05/2019), chapters 7 to 10 can be postponed until the Quality report (deadline for submission: not later than 05/11/2019).*** *However, where provisional information for the Quality Report topics is already available, we invite you to provide us with this data in the Metadata report (and update it in the Quality Report).*
- *Please submit the national questionnaire used (in national language and if available in English) annexed to the metadata report.*
- *Please replace in the header field the code 'EU' with your country code.*

- ***All information provided in this report on coverage of questions/items, net sample sizes, number of respondents, proportions, etc. should be in line with the transmitted data file(s).***

We kindly thank you for respecting these guidelines.

1. Cover information

1.1	**Country**	GREECE
1.2	**Organisation responsible for the survey** *Please also indicate the organisation <u>running</u> the survey if different from the organisation responsible (e.g. because of sub-contracting).*	HELLENIC STATISTICAL AUTHORITY
1.3	**Contact person(s)** (name, unit, e-mail, phone, fax)	1. CHALKIADAKI MARIA UNIT OF HOUSEHOLD SURVEYS TEL. 0030 –213-135 2896 FAX. 0030 -213-135 2906 E-MAIL: m.chalkiadaki@statistics.gr 2. VOULGARIS KONSTANTINOS METHODOLOGY, ANALYSIS & SURVEYS UNIT TEL. 0030 –213-135 2195 E-MAIL: k.voulgaris@statistics.gr

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HELLENIC STATISTICAL AUTHORITY

1.4	**Name of the collection** The name of the survey in its original language(s) and in English (e.g. name used in the statistical office's English website).	Survey on the use of information and communication technologies from households and individuals. Έρευνα χρήσης τεχνολογιών πληροφόρησης και επικοινωνίας από νοικοκυριά και άτομα.
1.5	**Date / Last update of this report** Please indicate the date of the last update of this report, for the case we have several versions (i.e. use different dates for the metadata report and the quality report).	15/11/2019

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

2. General methodological information

2.1	**Reference period(s)**
	The main reference period for the ICT variables as well as the background variables, e.g. *first quarter of the year* or *last three months before the interview* (with an indication of the respective months), or a specific date.
	31rst of March 2019 for educational level completed G5 - Day of the survey conduct for socio demographic characteristics (activity status, employment situation, country of citizenship, legal marital status, etc.), A1, A2, A3, F4, G1, G2, G3, G4, G6, G7, G8, G9, G10, G11, G12, G13, G14. - First three months of 2019 for questions B2, B2.1, B3, B4, B5, B6, B7, B8, D5, D6. - Last 12 months (April 2017-March 2017) for B9, B10, B10.1, C1, C2, D2, D3, D4, D7, D8, D9, E1, E2, F1, F2, F3.

2.2	**Survey period**
	The beginning and end date – if already known – of the data collection period.
	Survey has already started since April 2019 and is estimated to finish by the end of June 2019.

2.3	**Survey vehicle**
	Stand-alone or embedded in another survey. If embedded, give a short description of the survey the ICT modules are inserted in.
	ICT is a stand-alone survey.

2.4	**Survey type**
	Short description of the survey type (face-to-face interview, self-administered mail survey, telephone interview, combination of techniques, other; etc.).
	If a combination of techniques was applied, please indicate the proportion of each technique related to the total number of achieved interviews.
	Telephone interview.

2.5	**Survey participation**
	Please indicate whether the survey is mandatory or voluntary.
	Participation is mandatory according to Greek law.

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

2.6	**Main methodological differences compared to previous survey(s)**
	If any, indicate the changes in methodology that may have an impact on the (comparability over time of the) results delivered to Eurostat, e.g. survey type, change in reference period, new reference sampling frame, different scope, different grossing-up method, different treatment of non-response, etc. No need for giving detailed technical analyses, a bullet point overview of the main differences and the expected impact is sufficient.

The sample of households for the ICT survey of the year **2019** consisted of the samples used in the European Survey on Income and Living Conditions (EU-SILC) of the years 2016 - 2018. The EU-SILC is an annual rotating household survey covering the target population of the ICT survey. The EU-SILC is a multistage stratified sample survey with primary sampling unit the area (one or more unified blocks) and final unit the household. The sample design of the EU-SILC was based on data coming from the General Population Census of the year 2011.

For the ICT, primary units are the areas (one or more unified blocks) and secondary units the households with members that belong to the target population. The final unit is one person randomly selected among the household members 16-74 years old.

The sample design involves two levels of area stratification: (i) the first level is geographical stratification based on the partition of the whole Country into thirteen standard 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. (ii) The second level of stratification involves grouping municipal and local communes within each NUTS 2 Region by degree of urbanization, i.e., according to their population size, into four categories. These categories are defined by population size intervals 0-999, 1000-4999, 5000-29999, 30000 and over. The number of final strata in the thirteen Regions was 50. The two former major city agglomerations were further partitioned into 31 and 9 substrata respectively, on the basis of the city blocks of the municipalities that constitute them. Thus, the total number of strata for this survey was 90.

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3. Statistical unit(s), scope and target population

3.1	**Statistical unit**

Please indicate whether the statistical unit follows recommendations
by ticking *Yes* or *No* (and specify the deviations, if any):

	Yes	**No** (please specify the deviations)
Module A and questions G8-G14 in the Eurostat model questionnaire: households with at least one member aged 16 to 74	**X**	
Modules B to F and questions G1 to G7 in the Eurostat model questionnaire: individuals aged 16 to 74	**X**	

3.2	**Age groups covered**

Please indicate the age scope (in the *Yes* column), or tick *No* if not applicable

	Yes		**No**
Individuals younger than 16 ?	☐	If ticked, please specify (e.g. 12-15):	☒
Individuals aged 16 to 74 ?	**X** (compulsory)		
Individuals older than 74 ?	☐	If ticked, please specify (e.g. 75-80):	☒

3.3	**Territorial coverage**

If applicable, indicate the parts of the country that are not included as well as an estimate of the resulting percentage of under-coverage (non-covered population compared to total country population).

	Universe	*Households*	*Individuals*
3.4	**Target population** The number of *households* and *individuals* in the target population (scope, universe). Please restrict the numbers to the *Eurostat scope* (if additional age groups are covered in the national survey, these can be reported separately between brackets). If not directly available, please provide an estimate (e.g. based on other social surveys). If not applicable, please indicate why.	**3.578.325**	**7.678.149**

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

3.5	**Non-target population** The approximate number of *households* and *individuals* outside the general scope of the survey (e.g. _individuals younger than 16 or older than 74; households with all members over 74 years old_), i.e. the difference between the total population (in terms of households or individuals) in the country and the target population). If not applicable, please indicate why.	**466.919**	**2.771.470**

4. Questionnaire

4.1	**Adoption of *MANDATORY* questions and items from the Eurostat model questionnaire 2019** The questions listed below and its items reflect the required coverage of subjects and characteristics of Annex 2 of the **Commission Regulation (EU) 2018/1798 of 21 November 2018**. Please indicate in the table possible comments on the question/item coverage in your national questionnaire, e.g. insertion of additional items, different reporting periods, deviations in the routing of ordering of the questions and/or items (see also §4.4), differences in definitions or classifications, alternative sources used (esp. in the background characteristics). Where applicable, please report on the coverage of the questions for age groups beyond the standard scope, i.e. for respondents younger than 16 or for respondents older than 74. Possible comments on this issue can be added to the general column on deviations.

	Question	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
			<16	**>74**
	Module A : Access to selected ICTs		→ *if not applicable, please leave blank*	
A1	Do you or anyone in your household have access to internet at home?			
A2	What types of internet connections are used at home? (mandatory variables)			
A3	What are the reasons for not having access to the internet at home?			
	Module B : Use of the Internet		→ *if not applicable, please leave blank*	
B1	When did you last use the internet?			
B2	How often on average did you use the internet in the last 3 months?			
B2.1	Did you use the internet several times during the day?			
B3	Did you use any of the following mobile devices to access the internet away from home or work in the last 3 months?			

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

	Question	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
			<16	>74
B4	For which of the following activities did you use the internet in the last 3 months for private purposes? (13 mandatory items)			
B6	Did you use storage space on the internet (cloud computing) to save documents, pictures, music, video or other files for private purposes in the last 3 months (e.g. Google Drive, Dropbox, Microsoft OneDrive, iCloud, Amazon Drive)?			
B7	Have you conducted any of the following learning activities over the internet for educational, professional or private purposes in the last 3 months?			
B8	Have you used any website or app to arrange an accommodation (a room, apartment, house, holiday cottage, etc.) from another private individual in the last 12 months?			
B9	Have you used any website or app to arrange a transport service (e.g. by car) from another private individual in the last 12 months?			
B10/ B10.1	Have you obtained paid work by using an intermediary website or apps (e.g. Upwork, TaskRabbit, Freelancer, Amazon Mechanical Turk) in the last 12 months? Could you please specify if the income of this work is: the main source of your income/an additional source of income			
	Module C : Use of e-Government			
C1	Did you contact or interact with public authorities or public services over the internet for private purposes in the last 12 months for the following activities?			
C2	What were the reasons for not submitting completed forms to public authorities' websites or apps for private purposes in the last 12 months?			
	Module D : Use of e-Commerce		→ *if not applicable, please leave blank*	
D1	When did you last buy or order goods or services for private use over the internet?			
D2	What types of goods or services did you buy or order over the internet for private use in the last 12 months?			

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

	Question	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
			<16	**>74**
D3	Where any of the following products that you bought or ordered over the internet for private use downloaded or accessed from websites or apps in the last 3 months?			
D4	From whom did you buy or order goods or services for private use over the internet in the last 12 months?			
D5	How many times did you order or buy goods or services over the internet for private use in the last 3 months?			
D6	How much as an estimate did you spend buying or ordering goods or services over the internet (excluding shares or other financial services) for private use in the last 3 months?			
D7	Did you encounter any of the following problems when buying or ordering goods or services over the internet in the last 12 months?			
D8	Did you carry out any of the following financial activities over the internet (excluding e-mail) for private purposes in the last 12 months?			
D9	What were the reasons for not buying or ordering any goods or services for your own private use over the internet in the last 12 months?			
	Module E: E-skills		→ *if not applicable, please leave blank*	
E1	Which of the following computer or mobile device related activities have you carried out in the last 12 months?			
E2	Which of the following software related activities have you carried out in the last 12 months?			
	Module F: Internet security		→ *if not applicable, please leave blank*	
F1	Have you experienced any of the following security related problems through using the internet for private purposes in the last 12 months?			
F2	Have you experienced financial loss, in the last 12 months, resulting from identity theft, receiving fraudulent messages or being redirected to fake websites?			
F3	Have security concerns limited or prevented you from doing the following activities via the internet for private purposes in the last 12 months?			

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

	Question	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
			<16	>74
F4	Do you make back-up copies of your files (documents, pictures etc.) on any external storage device or to internet storage space (cloud services) for private purposes?			
	Socio-demographic background variables		→ *if not applicable, please leave blank*	
G1	Age			
G2	Sex			
G3	Country of birth			
G4	Country of citizenship			
G5	Educational level (according to ISCED 2011)			
G6	Employment situation – mandatory variables			
G7	Occupation (according to ISCO, 4 variables)			
G8	Region of Residence, NUTS 1			
G10	Geographical location: «less developed region«, «transition region«, «more developed region«			
G11	Degree of urbanisation			
G12	Number of members in the household – mandatory variable -			
G13	*of which,* number of children under 16 – mandatory variable -			

4.2	**Adoption of *OPTIONAL* questions and items from the Eurostat model questionnaire 2018**
	Please indicate in the table below if and which optional variables and questions were included in the national questionnaire.
	For each question or item, an "x" in the column named Question included means that it was included in the national questionnaire. Where applicable, please report also on the coverage of the questions for age groups beyond the standard scope, i.e. for respondents younger than 16 or for respondents older than 74.

	Question / Item	Question included ?	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
				<16	>74
A2c	Dial-up access over normal telephone line or ISDN	☒			
A2d	Mobile narrowband connection (less than 3G)	☒			
B4 l	Listening to music (e.g. web radio, music streaming)	☒			

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

	Question / Item	Question included ?	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
				<16	>74
B5	Did you interact via the internet with household equipment or appliances (such as thermostat, light bulb, robot vacuum or security system) in the last 3 months?	☒			
B7 d	Other learning activities over the internet for educational, professional or private purposes in the last 3 months than those mentioned in points B7 a)-c)	☒			
D3 e	None of the above were downloaded or accessed online	☒			
D9 g	Foreign retailer did not sell to my country	☒			
D9 h	Someone did it on my behalf	☒			
F1 h	Children accessing inappropriate websites	☒			
F3 g	Other activities via the internet for private purposes in the 12 months prior to the survey in which the respondent has been limited or prevented from due to security concerns.	☒			
G6	Full time employment	☒			
G6	Part time employment	☒			
G6	Employee	☒			
G6	Employee, permanent	☒			
G6	Employee, temporary	☒			
G6	Self-employed (incl. family workers)	☒			
G6	Economic sector (10 items)	☒			
G6	Details on status for other, not in the labour force (5 items)	☒			
G7	Coverage of all ISCO-08 2-digit categories	☒			
G9	Region of Residence, NUTS 2	☐			
-	Region of Residence, NUTS 3 for production of new regional breakdowns (rural/intermediate/urban)	☐			
G12	Number of persons aged 16-24	☒			
G12	Number of students aged 16-24	☒			
G12	Number of persons aged 25-64	☒			
G12	Number of persons aged more than or equal to 65	☒			
G13	Number of children aged from 14 to 15	☒			

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

	Question / Item	Question included ?	Any deviations from question / items in Model Questionnaire	Covered for other age groups?	
				<16	>74
G13	Number of children aged from 5 to 13	☒			
G13	Number of children aged less than or equal to 4	☒			
G14	Household income in quartiles	☒			
G14	Household income (equivalised) in quintiles	☐			

4.3	Additional questions introduced in the national questionnaire, if any

4.4	Effects of deviations from the routing used in the Eurostat model questionnaire, if any

5. Sampling frame

5.1	Name and short description of the sampling frame or register used
	Please mention the frame population and the units listed therein (e.g. districts, municipalities, addresses, households, persons, telephone numbers, etc.).
	If the sample is selected from a sample of another survey, from a micro-census or from a master sample (in the case of multi-phase sampling designs), then please mention the frame population used for the other survey/the micro-census/the master sample.
	If more than one sampling frame are used e.g. one sampling frame for each sampling stage or one sampling frame for each national region, then please mention all of them.
	Please describe if different frames are used to draw the sample and to gross up.
	Please mention if RDD (Random Digit Dialling) is used.

HELLENIC STATISTICAL AUTHORITY

The sample of households for the ICT survey of the year **2019** consisted of a sub-sample of the sample that was used in EU-SILC survey of the years 2016-2018.

The multi-stage stratified area sampling was adopted for the survey. The primary sampling units are the areas (one or more unified city blocks) participating in the EU-SILC survey of the years 2016-2018.

The secondary sampling units are the households of the sample of the EU-SILC survey with individuals aged 16-74 years old that belong to the selected primary sampling units.

The final sampling unit is one person randomly selected among the household members 16-74 years old.

		Yes	No
5.2	**Is the sample drawn from another survey sample, master sample or micro-census?** If yes, please, name the survey: EU-SILC 2016-2018 If yes, then the sampling stages used to select the other survey sample have to be further included in the description of sampling design. If yes, then we have a case of multi-phase sampling.	☒	☐
5.3	**Known shortcomings of the sampling frame, if any** Shortcomings in terms of timeliness (e.g. time lag between last update of the sampling frame and the moment of the actual sampling), geographical coverage, coverage of different subpopulations, etc.		
	Only the private households participate in the survey. Individuals who permanently reside in collective houses (as hospitals, hotels, asylums, houses of old people, orphanages etc) are not covered by the survey. These individuals are - as a rule - members of institutional households. If however we subtract from this population the conscripts and the imprisoned, the actual percentage not covered by the survey procedure, accounts for 1.29% (Census 2011) of the total population, and in its major part concerns economically non-active persons.		

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

6. Sampling design

6.1	**Is the sampling design a probability design?**	Yes	No
	A probability sampling design ensures known probabilities for units selected. In practice, non-response generally makes samples depart from the probability ones. However, the point here is to report on whether or not the gross sample (net sample plus non-respondents) has been selected in a probability way.	☒	☐

6.2	**What is the number of sampling stages?**		
	If the survey sample is selected from a sample of another survey, from the micro-census or from the master sample, then please include the number of sampling stages from all sampling phases into the total number of sampling stages.		
	If there are differences in the same country with regard to the number of sampling stages for different population groups, e.g. one-stage sampling in urban areas and two-stage sampling in rural areas, then report the number of sampling stages for each of the population groups.		
	Two Stages for households and three stages for individuals are implemented.		
	The multi-stage stratified area sampling was adopted for the survey. The primary sampling units are the areas (one or more unified city blocks) participating in the EU-SILC of the years 2016 - 2018, while the secondary sampling units are the households of the EU-SILC containing members belonging to the target population (individuals aged 16-74 years old). The final sampling unit is one person randomly selected among the household members 16-74 years old.		

6.3	**Is there (explicit) stratification at the first stage?**	Yes	No
	If there are differences as regards stratification at stage 1 between population groups (e.g. rural/urban, etc.), then please answer separately for each case.	☒	☐

Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

6.4	**What are the stratification variables at the first stage?**

Examples:

-region/ province/ county/ district/ code of administrative territories;
-size/ population density/ degree of urbanisation;
-type of municipality/ settlement;
-type of residence: urban/ rural;
-age, gender, etc.

The stratification variables of the survey are the:

    a.   Region (NUTS 2)

    b.   Degree of urbanization.

In each Region (NUTS 2), the stratification of primary units was conducted by allocating the Municipal and Local Communities according to the degree of urbanization. Except for the former two Major City Agglomerations (Athens and Thessaloniki), the created strata according to the degree of urbanization are:

1	Municipal Communities with 30.000 inhabitants or more
2	Municipal Communities with 5.000 to 29999 inhabitants
3	Municipal or Local Communities with 1.000 to 4.999 inhabitants
4	Local Communities up to 999 inhabitants

The former 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 former Greater Thessaloniki Area was divided into 9 equally sized strata. Thus, the total number of strata of the survey was 90, that is the 'final strata'. The two former Major City Agglomerations account for about 37% (Census 2011) of total population and for even larger percentages in certain socio-economic variables.

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6.5	**What is the sampling method at the first stage?**

The sampling method (for the sampling units) refers to the way the sample is selected. For example, the sampling method can be a simple random sampling, whereby all samples are given the same probability of selection. Other possible methods include systematic sampling with equal or unequal probabilities, other proportional-to-size sampling (πps), etc.

Please mention if the systematic sampling has stratification effect (gives rise to implicit stratification). If there are differences as regards the sampling design at stage 1 between population groups (e.g. rural/urban, etc.), then please answer separately for each case.

☐ Exhaustive selection

☐ Simple random sampling

☐ Systematic sampling with equal probabilities

  ☐ With stratification effect,
  please mention the related auxiliary variable: Insert Text

  ☐ Without stratification effect

☒ Systematic sampling with probabilities proportional-to-size

  ☒ With stratification effect,
  please mention the related auxiliary variable: Department (Prefecture)

  ☐ Without stratification effect

☐ Other proportional-to-size (πps) sampling,
please indicate: Insert Text

☐ Other,
please indicate: Insert text

For stage 1 it is important to know if there are self-representing primary sampling units (with probability of selection equal to 1). Please mention if this is the case:

Insert text

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

6.6	**What is the sampling unit at the first stage (PSU)?**

Examples: census enumeration areas, sections, municipalities, communes, villages, settlements, households, individuals, etc.

If there are differences in the same country with regard to the type of primary sampling units (PSUs), e.g. households as PSUs in urban area and villages as PSUs (and households as SSUs) in rural areas, then report the relevant sampling unit at stage 1 for each of the population groups. Please do this also for the sampling units at further stages at the next questions.

The primary sampling units are the areas (one or more unified city blocks) participating in the EU-SILC of the years 2016 – 2018.

1st stage of sampling

In this stage, for any ultimate stratum ('final strata'), say stratum h, a_h primary units were drawn with probabilities proportional to their sizes. The number a_h of draws is approximately proportional to the population stratum size N_h, as defined above.

The primary unit of order i in stratum h has probability of being drawn proportional to the population size as follows:

$$P_{hi} = \frac{N_{hi}}{N_h} \text{ (1)}$$

where:

N_{hi}: the updated (from the EU-SILC) target population of households in the hi primary unit

6.7	**Are the sampling units at the first stage self-representing?**	Yes	No
	In case of **self-representing primary sampling units** i.e. of PSUs purposefully included in the sample (selected with probability of one), these are treated as primary strata and their secondary sampling units are treated as primary sampling units.	☐	☒

6.8	**If yes to 6.7**

What is the sampling unit at the second stage (SSU)?

Examples: dwellings, households, individuals, etc.

In case of **self-representing primary sampling units,** the **secondary sampling units** are treated as primary sampling units.

Insert text

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

| 6.9 | **What is the sampling unit at the ultimate stage?** |

Examples: dwellings, households, individuals, etc.

The secondary sampling units are the households of the EU-SILC containing members belonging to the target population (individuals aged 16-74 years old). The third –and final- sampling unit is one person randomly selected among the household members of 16-74 years old.

In more detail:

2nd stage of sampling

In the hi primary unit, a sample of n_{hi} out of N_{hi} households was selected with equal probabilities. Each one of the n_{hi} households had the same chance to be selected, equal to:

$$\frac{n_{hi}}{N_{hi}} \quad (2)$$

The total number of households to be interviewed of the a_h sampling primary units is:

$$n_h = \sum_{i=1}^{a_h} n_{hi}$$

Within each primary sampling unit the calculation of the sampling interval $\delta_{hi} = \frac{N_{hi}}{n_{hi}}$ was carried out, so that the following two desired conditions to be satisfied.

a) The expectation of the fraction $\frac{n_h}{N_h}$ was constant in each stratum. That is:

$E\left(\frac{N_h}{n_h}\right) = \frac{1}{\lambda} = 2,2‰$ (3) and

b) The estimator of the stratum total Y_h (for any characteristic) will be self-weighting. In other words, the estimate of the survey characteristics is derived as product of the sum of the values of the characteristics over the n_h sample households by the overall raising factor λ, which is equal in each stratum.
The conditions (a) and (b) are satisfied when:

$$\frac{1}{a_h} \cdot \frac{1}{P_{hi}} \cdot \frac{N_{hi}}{n_{hi}} = \lambda \quad (4) \Rightarrow \frac{1}{a_h} \cdot \frac{1}{P_{hi}} \cdot \delta_{hi} = \lambda \Rightarrow \delta_{hi} = \frac{N_{hi}}{n_{hi}} = \lambda \cdot a_h \cdot P_{hi} \quad (5)$$

From the relations (1) and (5) $\Rightarrow$

$$\frac{N_{hi}}{n_{hi}} = \lambda \cdot a_h \cdot \frac{N_{hi}}{N_h} \Rightarrow n_{hi} = \frac{N_{hi} \cdot N_h}{\lambda \cdot a_h \cdot N_{hi}} \Rightarrow n_{hi} = \frac{N_h}{\lambda \cdot a_h} \quad (6)$$

HELLENIC STATISTICAL AUTHORITY

From the relation (3), it is deducted that: $\dfrac{1}{\lambda} = \dfrac{n_h}{N_h} \Rightarrow \lambda = \dfrac{N_h}{n_h}$ (7)

From the relations (6) and (7), we have: $n_{hi} = \dfrac{n_h}{a_h}$ (8)

3rd stage of sampling

In this stage from each household one individual (member of household belonging to the target population) was selected with equal probabilities.

Let p_{hij} is the selection probability of the hij individual, which belongs to the hi household. As one individual was selected with equal probabilities out of m_{hi} members belonging to target population, the p_{hij} was defined as: $p_{hij} = \dfrac{1}{m_{hi}}$

			One or some	All
6.10	**How many individuals are interviewed in the household?**		☒	☐
	Interviewed units are units from which data are collected. The interviewed unit can be different from the ultimate sampling unit.			
	For instance, the sampling unit at an ultimate stage can be a household and the interviewed unit can be an individual (all eligible individuals in the household are interviewed — this is a cluster sampling).			
	Furthermore, the sampling unit at the ultimate stage can also be an individual and the interviewed unit can be all eligible individuals in the same household. This is an indirect cluster sampling.			

		Yes	No
6.11	**Does the survey have a longitudinal component?**	☐	☒
	The survey collects data from the same sample elements on multiple occasions over time.		

6.12	**If yes to 6.11, please provide additional information!**
	If the survey sample is based on rotation groups, please specify the number of rotation groups.
	Are the rotation groups of equal sizes?
	What is the frequency of rotation of groups?
	How are new rotation groups selected?
	If the survey sample is drawn from another survey sample/micro-census/master sample, then does the rotation take place at the level of the other survey sample/micro-census/master sample?
	Insert text

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

6.13	**Please provide any additional information on the sampling design.**
	The sampling fraction in each of the 90 strata (Stratum= Region x Degree of urbanization) is $f = \dfrac{1}{\lambda} = \dfrac{n}{N} \cong 0.002$, where n =7,501 is the total sample size of households and N=**3,578,325** is the estimated total number of households belonging to the target population.
	The number of the sampling households in each of the 90 strata (let h) was defined by applying the proportional allocation as follows:
	$$n_h = n \cdot \frac{N_h}{N}$$
	where:
	N_h: the population size of the stratum h

	Sample size	**Households**	**Individuals** *(aged 16 to 74)*	**Individuals** *(younger than 16)*	**Individuals** *(older than 74)*
6.14	**Gross sample size** The number of households/individuals initially selected from the sampling frame (if not applicable, please indicate why). Please restrict the numbers in the first two columns to the *Eurostat scope* (if additional age groups are covered, these can be reported separately in the last two columns).	**7,501**	**7,501**	→ *if not applicable, please leave blank*	
6.15	**Net sample size** The number of households/individuals that can be used in the final database (if not applicable, please indicate why).	**To be filled in under §7.C (final report)**			

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households and by individuals 2019

HELLENIC **STATISTICAL AUTHORITY**

7. Response and non-response

(quality report)

Note: *This chapter only deals with non-response error. Other non-sampling error such as frame errors, measurement and processing errors or model assumption errors are discussed elsewhere or outside the scope of this methodological report.*

UNIT NON-RESPONSE

Unit non-response occurs when not all elements (households and/or individuals) of the gross sample (i.e. the initial sample drawn from the reference sampling frame) participate in the survey and are thus not included in the net sample.

However, not all types of non-response are taken into account when calculating the response rate (in §7.D) as they can be rather related to the quality of e.g. the sampling frame than to the quality of the survey data.

Note: In this report - for reasons of comparability across countries - all non-contacts are considered to be *non-response of eligible cases* (where in reality some of the non-contacts may concern ineligible cases).

If additional age groups were covered, please report separately for individuals in the general scope (16-74), and any additional age groups covered (see the last two columns).

If no additional age groups were covered (see also §3.2 and §4.1), the last two columns can be left blank.

		Number of households	Number of individuals (aged 16-74)	Number of individuals (<16)	Number of individuals (>74)
7.A	**Gross sample size** The number of households/individuals initially selected from the sampling frame (if not applicable, please indicate why).	7501	7501	→ *if not applicable, please leave as is*	
				-1	-1

	Type of unit non-response (ineligible cases)	Number of households	Number of individuals (aged 16-74)	Number of individuals (<16)	Number of individuals (>74)
7.1	**Ineligible: out-of-scope** E.g. selected household is not in the target population because all members are over 75 years old.	7	7	→ *if not applicable, please leave as is*	
				-1	-1
7.2	**Other ineligible** E.g. no dwelling exists at the selected address or selected individual has died between the reference data of the sampling frame (cf. §5.2) and the moment of the interview.	-1	-1	-1	-1

		Number of households	Number of individuals (aged 16-74)	Number of individuals (<16)	Number of individuals (>74)
7.B	**Number of eligible elements** I.e. the gross sample size corrected for the ineligible cases. ► [§7.B] = [§7.A] – [§7.1] – [§7.2]	7494	7494	-1	-1

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	Type of unit non-response (eligible cases)	*Number of households*	*Number of individuals (aged 16-74)*	*Number of individuals (<16)*	*Number of individuals (>74)*
7.3	**Non-contact** E.g. no one was home or postal survey was never sent back.	1717	1717	→ *if not applicable, please leave as is* -1	-1
7.4	**Refusal** E.g. selected household or individual was contacted but refused to take part in the survey.	773	773	-1	-1
7.5	**Inability to respond** E.g. selected household or individual was unable to participate due to language barriers or cognitive or physical incapacity to respond.	-1	-1	-1	-1
7.6	**Rejected interviews** E.g. the selected household/individual did take part but the survey form cannot be used (poor quality - e.g. strong inconsistencies; unacceptable item-response – e.g. individual left most of the questions unanswered; survey form got lost and interview cannot be repeated; etc.).	-1	-1	-1	-1
7.7	**Other non-response** Please specify the other types of non-response encountered. <u>Note</u>: please add the other non-response related to ineligibility of the selected elements under §7.2. Insert text	-1	-1	-1	-1

7.C	**Net sample size** The number of households/individuals that can be used in the final database (if not applicable, please indicate why). This notion corresponds to the *final sample* in the Tabulation Scheme. ▶ **[§7.C] = [§7.B] – [§7.3] – [§7.4] – [§7.5] – [§7.6] – [§7.7]**	5004	5004	-1	-1

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

		Households	*Individuals (aged 16-74)*	*Individuals (<16)*	*Individuals (>74)*
7.D	**Unit response rate** The unit response rate is the **ratio** of the *number of in-scope respondents* (= the number of achieved interviews or the net sample size, see §7.C) to the *number of eligible elements* selected from the sampling frame (see §7.B). The number of eligible elements equals *the gross sample size* (see §7.A) *minus the ineligible cases* (see §7.1 and §7.2). ► **[§7.D] = [§7.C] / [§7.B]**	66.77	66.77	→ *if not applicable, please leave as is*	
				-1	-1

7.8	**Comments on the unit response rate, if any**
	Insert text

7.9	**Methods used for minimizing unit non-response** Where applicable, give a description of measures taken to reduce the unit non-response: • advance notification in the form of a letter or phone call; • system of reminders, number of visits, number of attempts for phone calls, etc. • showing respondents how the data they are providing are being used; • etc.
	Insert text

7.10	**Methods used for dealing with unit non-response** Indicate whether imputations are made for unit non-response and give a short description of the methods used (e.g. correction factor in the weighting procedure, imputation based on background characteristics known from the sampling frame, etc.).
	In each stratum h, the inverse of the initial inclusion probabilities of the respondents are multiplied by the inverse of the response rate r_h of the stratum h. Consequently, the extrapolation factor takes into account not only the selection probability of the sampling units but also the inverse of response rate in each stratum.

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households and by individuals 2019

HELLENIC **STATISTICAL AUTHORITY**

7.11	**Has substitution been used?**	Yes	No
	Please indicate whether the instructions to interviewers allow for proxy interviews (another person in the household than the one who was randomly selected can answer the questions). If yes, please give an estimate of the percentage of proxy interviews (compared to the total number of interviews). **Substitution rate (%)**　　0% **On which criterion has the selection of the substituted units been based?**	☐	☐

ITEM NON-RESPONSE

Item non-response occurs when a respondent provides some, but not all, of the requested information, or if the reported information is not useable (note that entirely non-useable questionnaire are already counted in the *unit* non-response, see §7.6).

It may occur for a variety of reasons. Items may be missing because the respondent broke off the interview after partially completing it (but enough data were provided so that the questionnaire is not classified as a unit non-response). Items may be missing because the respondent inadvertently skipped an item, a module or a page (especially in self-administered mail surveys). Or a respondent may simply not have the information on the question (and no don't know option is foreseen) or refuse to give the requested information.

As item non-response usually goes hand-in-hand with systematic bias (e.g. the proportion of *No* answers may be higher among people with item non-response compared to those who did answer on a specific item), it is useful to assess the degree and impact of this type of non-response.

7.12	**Questions or items with item response rates below 90%**
	If any, identify the items with low response rates (the cut-off value to be used is 0.90) and indicate their respective response rates. The item non-response rate should of course be calculated taking into account the routing and filtering in the questionnaire.
	Insert text

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

7.13	**What imputation methods have been used?**

Indicate whether imputations are made for item non-response and give a short description of the methods used (e.g. nearest-neighbour imputation, hot deck imputation, mode imputations within classes, etc.).

(Multiple choices possible)

☐ **None**

☐ **Deductive imputation**

An exact value can be derived as a known function of certain characteristics (e.g. the value received for a family allowance is a known function of certain characteristics like income class, age of children, etc. As soon as those characteristics are known, it becomes possible to calculate the value of a family allowance without error.)

Deterministic imputation

Deterministic imputation leads to estimators with no random component, that is, if the imputation were to be re-conducted, the outcome would be the same.

☐ Mean/Median

☐ Mean/Median by class

☐ Regression-based

☐ Donor

☐ Other (please specify): Insert Text

Random imputation

Random imputation leads to estimators with a random component, that is, if the imputation were re-conducted, it would lead to a different result.

☐ Hot-deck

☐ Cold-deck

☐ Simulated residuals

☐ Other (please specify): Insert text

☐ **Multiple imputation**

Multiple imputation methods offer the possibility of deriving variance estimators by taking imputation into account. In multiple imputation each missing value is replaced (instead of a single value) with a set of plausible values that represent the uncertainty of the right value to impute. The incorporation of imputation variance can be easily achieved based on the variability of estimates among the multiply imputed data sets.

7.14	**What was the overall imputation rate for the main indicators?**

For each of the target indicators below, please report the proportion of observations that are imputed values. Moreover, if applicable, please report the share of the estimate that is contributed by the imputed values.

Main target indicator	Imp. Rate (% of observations)	Imp. Rate (share of estimate)
Proportion of households having access to the Internet at home ('Yes' in question A1 of the 2019 model questionnaire)	0%	0%
Proportion of households using a broadband connection ('Yes' on options 'a' or 'b' in question A2 of the 2019 model questionnaire)	0%	0%

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC **STATISTICAL AUTHORITY**

Proportion of individuals regularly using the Internet: overall (individuals who ticked option 'a' or 'b' in question B2 of the 2019 model questionnaire)	0%	0%

7.15	**Other comments relating to the item non-response** If any, please use this box to inform on additional issues on the non-response calculation (e.g. method used in national publications, etc.).
	Insert text

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

8. Grossing-up procedures
(quality report)

Please give a description of the extrapolation or weighting procedures used to gross up the *households (§8.1)* and the *individuals (§8.2)* in the net sample to the (target) population, discussing the different steps taken or factors applied to the design weighting to take into account the (post)stratification, balancing for unit non-response, etc.

In case similar methods are used for grossing-up the net samples of households and individuals, the discussion can be integrated under one heading.

> How were the design weights calculated?
>
> Was balanced sampling used and what are the balancing variables?
>
> Has re-weighting for units non-response been performed?
>
> Has adjustment to external data sources been performed?
>
> Is the sample self-weighted?

Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

8.1 | **Grossing-up procedures for households**

Let h be one of the final strata of households (Final stratum = Region x Degree of Urbanization), then this will take the following values: $h = 1,2,..., H$ (where $H = 90$). In each of the final strata (let h), if statistical information was selected from a sample of n'_h households, the extrapolation factor of the household of order j belonging to the PSU of order i was defined as:

$$w_{hij} = \frac{N_h}{a_h \cdot N_{hi}} \cdot \frac{N_{hi}}{n_{hi}} \cdot \frac{1}{r_h} t_{hij} = \frac{N_h}{a_h \cdot n_{hi}} \cdot \frac{1}{r_h} t_{hij} \quad (9)$$

From relations (8) in paragraph 6.1 and (9), we have:

$$w_{hij} = \frac{N_h}{a_h \cdot \dfrac{n_h}{a_h}} \cdot \frac{1}{r_h} t_{hij} \Rightarrow w_{hij} = \frac{N_h}{n_h} \cdot \frac{1}{r_h} t_{hij} \quad (10)$$

where:

N_h: the target population size in the h stratum according to Population census 2011 and data from population projections based on vital statistics.

n_h : the initial sample size in the h stratum

$\dfrac{N_h}{n_h}$: the inverse of the initial inclusion selection probability of the sampling households in the the h stratum, as the the estimator of the stratum total Y_h (for any characteristic) is self-weighting,

$r_h = \dfrac{n'_h}{n_h}$ is the response rate in the h stratum

t_{hij}: Factor, which adjusts the sample weights of households so that the sample totals conform to the population totals on a cell-by-cell basis (Population Weighting Adjustment). The auxiliary variable used at household level is the household size (1,2,3,4 or 5+ members) for the definition of cells or classes.

The distribution of households by size class per NUTSI is estimated using population projections. These projections are based on vital statistics (population census, births, deaths, migration) and the Population Census 2011.

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Community Survey on ICT usage in
households and by individuals 2019

HELLENIC STATISTICAL AUTHORITY

8.2 Grossing-up procedures for individuals

In each of the final strata of households (let h), if statistical information was selected from a sample of m_h individuals, the extrapolation factor of the individual of order k belonging to the hij household is defined as follows:

$$w_{hijk} = w_{hij} \cdot \frac{1}{p_{hijk}} \cdot g_{hijk} \quad (8.2)$$

where:

w_{hijk} : The extrapolation factor of the hij household in which the $hijk$ individual belongs

p_{hijk} : The selection probability of the $hijk$ individual, which belongs to the hij household. As one individual was selected with equal probabilities out of m_{hij} members belonging to the target population, the p_{hijk} is defined as: $p_{hijk} = \frac{1}{m_{hij}}$

g_{hijk} : Factor, which adjusts the sample weights of individuals, so that the sample distribution conform to the population distribution across a set of classes. The classes are 24, which are defined by crossing sex by age groups (2 sex categories × 12 age groups). The age groups are defined by the year intervals: 16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59,60-64, 65-69 and 70-74.

The population distribution of individuals by sex and age groups NUTSI is estimated using population projections. These projections are based on vital statistics (population census, births, deaths, migration) and the Population Census 2011.

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households and by individuals 2019

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9. Sampling error (quality report)

Standard error (for a selection of indicators)

The sampling error reflects the fact that only a particular sample was surveyed rather than the entire population. It is estimated by the standard error and can be expressed by the square root of the estimate of the sampling variance ($\hat{\sigma}_{(\hat{\theta})}$). The estimation of the sampling variance should ideally take into account the sampling design (e.g. the stratification).

Please comment on the approach for calculating sampling errors in §9.6. In case the standard errors are derived using the variance formula for simple random sampling and incorporating a factor which reflects the multi-stage, clustered nature of the sampling design, please provide more detailed information in §9.6 d and e.

Please indicate below the number of respondents (absolute value for *Yes* answers), the estimated value of the proportion (in %) as well as the respective *standard error (in percentage points)* for the indicators and sub-indicators mentioned.

Please note that the accuracy measure used, i.e. the STANDARD DEVIATION, was also addressed in the 2006-2014 report templates but differs from the 2004 and 2005 report templates (where the *coefficient of variation* was used).

The section 9.7 should be completed with comments on reliability and representativeness of results and completeness of dataset. The two questions should be left blank if not applicable, i.e. if standard errors found were adequate or if subgroups of the population had always a sufficient number of respondents.

	Indicator or sub-indicator *- on households and individuals in the general scope (16-74) and related subgroups -*	*Number of respondents*	*Estimated proportion (%)*	*Standard error (% points)*
9.1	**Proportion of households having access to the Internet at home** ('Yes' in question A1 of the 2019 model questionnaire)	2.810.424	78.54%	0.62%
9.2	**Proportion of households using a broadband connection** ('Yes' on options 'a' or '*b*' in question A2 of the 2019 model questionnaire)	2.793.404	78.06%	0.63%
9.3	**Proportion of individuals regularly using the Internet: overall** (indiv. who ticked options 'a' or 'b' in question B2 of the 2019 model questionnaire)	5.658.229	73.69%	0.76%
9.3.1	Proportion of ind. regularly using the Internet: **males** (as % of all men)	2.791.878	75.42%	1.06%
9.3.2	Proportion of ind. regularly using the Internet: **females** (as % of all women)	2.866.351	72.08%	1.03%
9.3.3	Proportion of ind. regularly using the Internet: **age group 16-24 years** (as % of all individuals aged 16-24 years)	889.481	98.82%	0.67%
9.3.4	Proportion of ind. regularly using the Internet: **age group 25-34 years** (as % of all individuals aged 25-34 years)	1.064.139	95.82%	1.14%
9.3.5	Proportion of ind. regularly using the Internet: **age group 35-44 years** (as % of all individuals aged 35-44 years)	1.404.237	91.14%	1.22%
9.3.6	Proportion of ind. regularly using the Internet: **age group 45-54 years** (as % of all individuals aged 45-54 years)	1.225.683	77.78%	1.68%
9.3.7	Proportion of ind. regularly using the Internet: **age group 55-64 years** (as % of all individuals aged 55-64 years)	771.220	55.76%	1.81%
9.3.8	Proportion of ind. regularly using the Internet: **age group 65-74 years** (as % of all individuals aged 65-74 years)	303.470	25.99%	1.57%
9.3.9	Proportion of ind. regularly using the Internet: **low educational level** (as % of all individuals with low education)	959.901	41.62%	1.56%

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households and by individuals 2019

HELLENIC **STATISTICAL AUTHORITY**

9.3.10	Proportion of ind. regularly using the Internet: **medium educational level** (as % of all individuals with medium education)	2.577.005	82.34%	0.98%
9.3.11	Proportion of ind. regularly using the Internet: **high educational level** (as % of all individuals with high education)	2.121.322	94.61%	0.64%
9.3.12	Proportion of ind. regularly using the Internet: **students** (as % of all students)	642.353	99.40%	0.47%
9.3.13	Proportion of ind. regularly using the Internet: **employees or self-employed** (as % of all employees or self-employed)	3.140.282	87.55%	0.88%
9.3.14	Proportion of ind. regularly using the Internet: **unemployed** (as % of all unemployed)	867.871	80.38%	1.95%
9.3.15	Proportion of ind. regularly using the Internet: **retired, other inactive** (as % of all retired and other inactive)	1.007.723	42.60%	1.42%
9.4	**Proportion of individuals having submitted completed forms in the last 12 months** (individuals who ticked item 'c' in question C1 of the 2019 model questionnaire)	2.142.825	27.91%	0.93%
9.5	**Proportion of individuals having ordered goods or services for private use over the internet in the last 12 months** (individuals who ticked 'within the last 3 months' or 'between 3 months and a year ago' in question D1 of the 2019 model questionnaire)	2.988.725	38.93%	0.91%

9.6	**Calculation of the standard error**
	There exist different methods by which the standard error of an estimated proportion can be assessed based on the distribution in the sample. Please, describe below the approach which you have followed. This information will help Eurostat to evaluate the comparability of the standard errors supplied in the previous section by the different statistical institutes participating in the survey.
	a) Name and brief description of the applied estimation approach
	☒ Analytic Method

Linearization Method

    ☐ Taylor linearization

    ☐ Linearization based on influence functions

    ☒ Other, please specify: Other, please specify: The variance estimation is based on the assumption that the PSU's were selected according to a PPS with replacement scheme. As the clusters (one or more unified city blocks) are used as primary sampling units (PSUs) in the sample design, the variance procedure estimates the variance from the variation among the PSUs.

Replication Methods

    ☐ Jackknife

    ☐ Bootstrap

    ☐ Balanced repeated Replication / Balanced half-samples

    ☐ Random Groups

    ☐ Other, please specify: Insert Text

☐ Other, please specify: Insert Text |
| | **b) Basic formula** |

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households and by individuals 2019
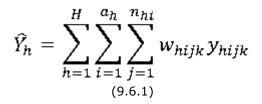
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Let w_{hijk} (>0) stand for the survey weight attached to the sample individual k ($k=1$, as one individual is surveyed, in each sampling household) belonging to the sampling household of order j ($j=1,...,n_{hi}$), belonging to the selected cluster of order i, of the stratum h.

Estimation of survey characteristics

Let y_{hijk} be the value of the characteristic y of the ultimate unit (individual) of the household of order j, belonging to the hi primary sampling unit (cluster). Moreover, Y stands for the total population, which is derived by adding the characteristic y of all ultimate units included in all strata h. The form of the estimator on the basis of the two-stage design is:

$$\hat{Y}_h = \sum_{h=1}^{H} \sum_{i=1}^{a_h} \sum_{j=1}^{n_{hi}} w_{hijk} y_{hijk}$$

(9.6.1)

Estimation of a ratio

Let x_{hijk} be the value of the characteristic x of the ultimate unit of the household of order j, belonging to the hi primary sampling unit (cluster). Moreover, X stands for the total population, which is derived by adding the characteristic x of all ultimate units included in all strata h. The form of the estimator $\hat{R}$ on the basis of the two-stage design is:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}} = \frac{\sum_{h=1}^{H} \sum_{i=1}^{a_h} \sum_{j=1}^{n_{hi}} w_{hijk} y_{hijk}}{\sum_{h=1}^{H} \sum_{i=1}^{a_h} \sum_{j=1}^{n_{hi}} w_{hijk} x_{hijk}}$$

(9.6.2)

Variance estimation

In order to calculate the variance of the estimated characteristics, the following steps should be followed:

a) For every selected primary sampling unit (cluster) i of the stratum h, we calculate the quantity T_{hi} using the following formula:

$$T_{hi} = a_h \sum_{j=1}^{n_{hi}} w_{hijk} y_{hijk}$$

(9.6.3)

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b) Since T_{hi} has been calculated for every primary sampling unit (cluster) i $(i = 1, ..., a_h)$ of the stratum h, then $V(\hat{Y})$ is calculated as (Rao, 1988):

$$V(\hat{Y}) = \sum_{h=1}^{H} \frac{1}{a_h(a_h - 1)} \left[\sum_{i=1}^{a_h} T_{hi}^2 - \frac{1}{a_h} \left(\sum_{i=1}^{a_h} T_{hi} \right)^2 \right]$$

(9.6.4)

For the estimation of the variance and the coefficient of variation of a ratio $\hat{R} = \dfrac{\hat{Y}}{\hat{X}}$ additional steps should be followed, below:

a) For every selected primary sampling unit (cluster) i of the stratum h, we calculate the quantity F_{hi} using the following formula:

$$F_{hi} = a_h \sum_{j=1}^{n_{hi}} W_{hijk} X_{hijk}$$

(9.6.5)

b) Since T_{hi} and F_{hi} have been calculated for every primary sampling unit (cluster) i $(i = 1, 2, ..., a_h)$ of the stratum h, then $V(\hat{X})$ is calculated as:

$$V(\hat{X}) = \sum_{h=1}^{H} \frac{1}{a_h(a_h - 1)} \left[\sum_{i=1}^{a_h} F_{hi}^2 - \frac{1}{a_h} \left(\sum_{i=1}^{a_h} F_{hi} \right)^2 \right]$$
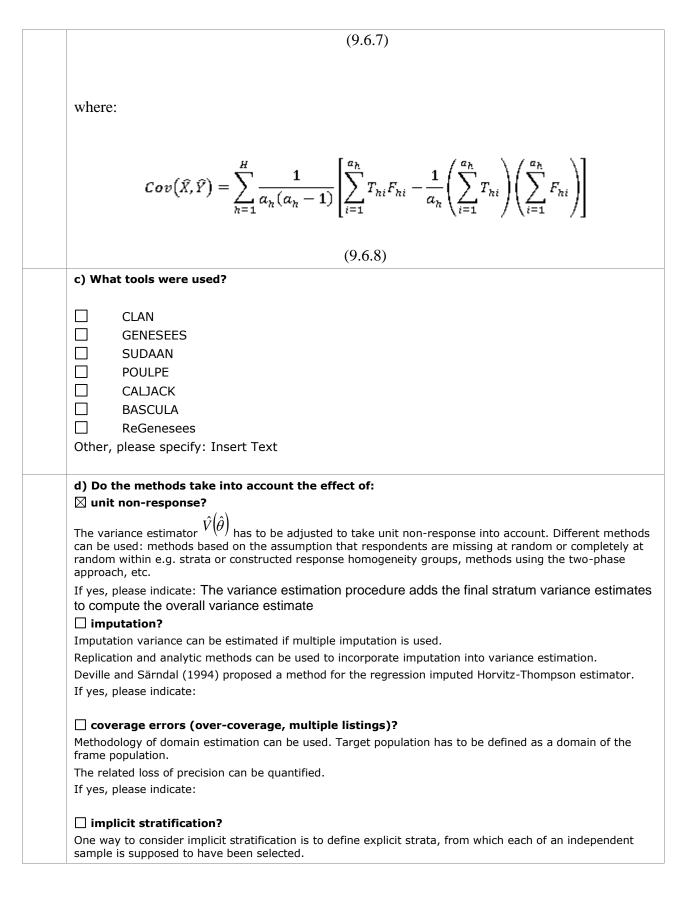
(9.6.6)

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

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

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(9.6.7)

where:

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

(9.6.8)

c) What tools were used?

☐ CLAN
☐ GENESEES
☐ SUDAAN
☐ POULPE
☐ CALJACK
☐ BASCULA
☐ ReGenesees

Other, please specify: Insert Text

d) Do the methods take into account the effect of:

☒ **unit non-response?**

The variance estimator $\hat{V}(\hat{\theta})$ has to be adjusted to take unit non-response into account. Different methods can be used: methods based on the assumption that respondents are missing at random or completely at random within e.g. strata or constructed response homogeneity groups, methods using the two-phase approach, etc.

If yes, please indicate: The variance estimation procedure adds the final stratum variance estimates to compute the overall variance estimate

☐ **imputation?**

Imputation variance can be estimated if multiple imputation is used.

Replication and analytic methods can be used to incorporate imputation into variance estimation.

Deville and Särndal (1994) proposed a method for the regression imputed Horvitz-Thompson estimator.

If yes, please indicate:

☐ **coverage errors (over-coverage, multiple listings)?**

Methodology of domain estimation can be used. Target population has to be defined as a domain of the frame population.

The related loss of precision can be quantified.

If yes, please indicate:

☐ **implicit stratification?**

One way to consider implicit stratification is to define explicit strata, from which each of an independent sample is supposed to have been selected.

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households and by individuals 2019

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	Other methods using analytic formulae are available.
	If yes, please indicate:
	☐ **rotating samples?**
	In case of rotating sample schemes, the overlap of samples between e.g. successive quarters reduces the precision of the average of estimates from e.g. quarterly samples and increases the precision for e.g. the quarter-to-quarter estimates of change.
	If yes, please indicate:
	☐ **calibration?**
	Methods to account for the effect of calibration on variance should be used. E.g. Deville and Särndal method (1992).
	If yes, please indicate:
	e) Main reference in the literature
	Rao, J.N.K (1988), Variance estimation in Sample Surveys. In Handbook of Statistics, Vol 6. (Eds.P.R Krishbaiah abd C.R.Rao). Amsterdam: Elsevier Science. 427-447

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9.7	**Comments on reliability and representativeness of results and completeness of dataset**
	These comments should reflect on the standard errors reported for the indicators and subgroups in 9.1 to 9.5 above as well as on the other indicators and breakdowns. The estimated standard error shall not exceed 2% points for the overall proportions and shall not exceed 5% points for the proportions relating to the different subgroups of the population where these subgroups constitute at least 10% of the total population in the scope of the survey. If problems were found, these could have implications for future surveys (e.g. need to improve sampling design or to increase sample sizes for households or individuals).
	Indicators and breakdowns in sections 9.1 to 9.5 above:
	Other indicators and breakdowns:

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10. Closing remarks

10.1	**Problems encountered and lessons to be learnt**
	These comments can relate to methodological issues as well as to the questionnaire itself (item construction, clarity of definitions to interviewers and respondents, routing and filtering, outcome of pre-tests, etc.)

10.2	**Other comments, if any**

11. Annexes

Note: Please also provide the annexes in a computer-readable format and in English

11.1	**Questionnaire in national language - Yes**
11.2	**Interviewer instructions (if available) – Yes in national language**
11.3	**Informative letter - Yes**
11.4	**Questionnaire in English (if available) - No**
11.5	**National reports on methodology (if available)**
11.6	**Analysis of key results, backed up by tables and graphs (if available)**
11.7	**Other annexes** Please give an overview of other annexes (whether or not referred to in the preceding chapters of this report) • … • …