Health variables in SILC - methodology

Statistics Explained

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This background article sheds some light on the health data collected from the EU Statistics on Income and Living Conditions (SILC), an instrument that provides information on income distribution, poverty and social exclusion across the EU. Health is among the different topics covered by SILC and data corresponding to this topic is collected on an annual basis through seven variables: three of them concern the health status of the population and the remaining four are about the restrictions in access to health care. From 2022 onwards, a health dedicated module will complement the health-related information provided on an annual basis by SILC. This module will collect additional information on health care, health determinants, health status and disability and will be conducted with a 3-year periodicity..

The article provides information on the main features of these data in so far as they concern the health variables, their historical development and current legal basis, some main methodological features, information concerning data quality and finally an overview of the uses of the data that come from this source.

This article is one of a set of background articles concerning the methodology for the production of health statistics in the EU and accompanies a number of statistical articles which make up an online publication on health statistics .

Main features

Statistical objectives

SILC is the reference source for comparative statistics on income distribution, social exclusion and living conditions across the EU. It collects comparable multidimensional micro-data on income, poverty, social exclusion, housing, labour, education, health.

Scope of the data

In general, SILC provides statistics on income distribution and monetary poverty , social inclusion, and living conditions. Health is also covered through a small module composed of three variables on health status and four variables on unmet needs for health care.

The variables on health status are called the minimum European health module and concern:

- self-perceived health ;
- chronic morbidity (having a long-standing illness or health problem);
- activity limitation (self-perceived long-standing limitations in usual activities due to health problems).

The variables on unmet needs for health care target two broad types of services: medical care and dental care. The variables refer to the respondent's own assessment of whether he or she needed the respective type of examination or treatment, but did not have it and, if so, what was the main reason of not having it.

In addition, from 2022 onwards and on a 3-year basis, SILC will also include around 20 variables on health care, health determinants, health status and disability. Data on well-being will also be produced from 2022 onwards but with a 6-year periodicity via a module on Quality of life.

The SILC target population consists of all persons living in private households residing in the territory of one of the Member States. Persons living in collective households and in institutions are generally excluded. All persons aged 16 and over within the household are eligible for questions relating to individuals, including all health questions.

Development and legal basis

Development and history

SILC was launched in 2003, with coverage expanding as Member States joined the EU in subsequent years. See the section on time and geographical coverage below for more details.

Legal basis

SILC was operated before 2021 under Regulation (EC) No 1177/2003 of the European Parliament and of the Council and a series of European Commission implementing Regulations. From 2021 onwards the legal framework is endured by Regulation (EU) 2019/1700 of the European Parliament and of the Council. establishes a common framework for European statistics relating to persons and households, based on data at individual level collected from samples (known as IESS regulation).

In addition, the following two regulations are in place:

- Commission Delegated Regulation (EU) 2020/258 specifying the number and the titles of the variables, for income and living conditions domain.
- Commission Implementing Regulation (EU) 2019/2242 specifying the technical items of data sets, the technical formats for the transmission of information and specifications of the detailed arrangements and content of the quality reports for the income and living conditions domain.

SILC also includes rolling modules with a periodicity of three or six years. Health is included in a 3-year module while Quality of life in a 6-year module. The legal act for these two modules is the Commission Implementing Regulation (EU) 2020/1721 of 17 November 2020 specifying technical items of data sets of the sample survey in the income and living conditions domain on health and quality of life pursuant to Regulation (EU) 2019/1700 of the European Parliament and of the Council.

For some more information on legislation see the legislation section of the SILC dedicated section and for a full list of implementing legislation see point 6.1 of the ESMS metadata file for income and living conditions .

Methodology

Main sources

In SILC information is collected either from interviews or from registers (administrative sources). For interviews, there are four different ways to collect the data (in decreasing order of use across the EU): computer-assisted personal interview (which is most commonly used); paper-assisted personal interview; computer-assisted telephone interview (which is mainly used in countries where income data are extracted from registers); or self-administrated questionnaire.

Health variables are exclusively collected through interviews as they are not available from administrative sources.

Statistical units

The statistical units in SILC are both households and individuals.

Main concepts and definitions

Self-perceived health, morbidity and activity limitation

The concept of self-perceived health is surveyed through a question on how a person perceives his / her health in general, using one of the following answer categories: very good, good, fair, bad or very bad. It refers to health in general rather than the present (perhaps temporary) state of health and concerns physical, social and emotional functions and biomedical signs and symptoms.

The concept of chronic morbidity is surveyed through a question asking if the respondent suffers from any longstanding (defined as having lasted or is expected to last for at least six months) illness or health problem.

The concept of activity limitation is operationalized by using the Global Activity Limitation Indicator (GALI) for observing limitation in activities people usually do because of one or more health problems. The limitation should have lasted for at least six months prior to the date of interview. Three answer categories are possible: severely limited; limited but not severely; not limited at all. This variable is used as a proxy for identifying persons with disabilities, and those who are limited or severely limited in their activity.

Self-reported unmet needs for medical and dental care

Self-reported unmet needs concern a person's own assessment of whether he or she needed examination or treatment for a specific type of health care, but did not have it or did not seek it.

Medical care refers to individual healthcare services (medical examination or treatment excluding dental care) provided by or under direct supervision of medical doctors or equivalent professions according to national healthcare systems.

Dental care refers to individual healthcare services provided by or under direct supervision of stomatologists (dentists). Health care provided by orthodontists is included.

In case of unmet need the respondent is then asked to provide the main reason with the following categories (multiple answers are not allowed):

- could not afford care (too expensive);
- waiting list;
- could not take time (to visit the practitioner) because of work, care for children, or other reasons;
- too far to travel or no means of transportation;
- fear of doctors / dentists, hospitals, examination or treatment;
- wanted to wait and see if problem got better on its own;
- did not know any good medical doctor / dentist;
- other reasons.

Variable collected through SILC rolling modules

3-YEAR ROLLING MODULE – HEALTH

Financial burden of medical care, dental care and medicines

The objective is to collect the opinion of the respondent on whether the costs for medical care and dental care are a financial burden to the household. The variables would provide subjective information about the affordability of out of pocket expenditures for the medical, dental care services and medicines.

Number of consultations in the past 12 months

These variables provide a measure of the number of visits to a dentist/stomatologist or orthodontist, a general practitioner or family doctor, and a medical or surgical specialist on respondent's own behalf during the 12 months prior to the interview.

Detailed topic	Variable name
Health care	Financial burden of medical care (excluding medicines)Financial burden of dental care Financial burden of medicines Number of consultations with a general practitioner or family doctor in the past 12 months Number of consultations with dentist, orthodontist or other dental care specialists in the past 12 months Number of consultations of a medical or surgical specialist (excluding dentists, orthodontists or other dental care specialists) in the past 12 months

Detailed topic	Variable name
Health determinants	BMI 1 WeightBMI 2 Height Type of physical activity when working Frequency of physical activities (excluding working) Frequency of eating fruit (excluding any juice) Frequency of eating vegetables or salad (excluding any juice) Frequency of tobacco use (including electronic cigarettes or similar electronic devices) Frequency of consumption of an alcoholic drink of any kind

BMI

The body mass index (BMI) is a measure of a person's weight relative to their height that links fairly well with body fat. The BMI is used as a measure of obesity. It is calculated as a person's weight (in kilograms) divided by the square of his or her height (in metres):

BMI = weight (kg) / [height * height] (m^2)

Physical activity

The concept of the variables on physical activity concerns both the work-related physical activity level – working tasks according to different levels of physical effort describing what people do when they are working and the total days in a typical week spent on sports, fitness and recreational (leisure) physical activity. Only activities that cause at least a small increase in breathing or heart rate (i.e. at least moderately demanding physical activities) and which are performed for at least 10 minutes continuously (i.e. without interruption) are included.

Frequency of eating fruit and vegetables

The concept of the variables concerns the frequency of eating fruits (juice excluded) and vegetables or salad (potatoes, soups and juice excluded).

Frequency of tobacco use

The concept of the variable concerns the occurrence of current using of tobacco products, including electronic cigarettes or similar electronic devices.

Frequency of consumption of an alcoholic drink of any kind

The concept of the variable concerns the overall frequency of alcohol intake during the last 12 months. The variable enables to ascertain person's current drinking status and frequency of drinking. The term 'alcoholic drink' refers to all drinks that contain 'alcohol', regardless of the kind of drink (strong or light beer, wine, spirits, etc.), or the quantity consumed.

Difficulty in seeing/ hearing, even when using glasses or contact lenses/ a hearing aid

Detailed topic	Variable name
Details on health status and disability	Difficulty in seeing, even when wearing glasses or contact lensesDifficulty in hearing, even when using a hearing aid Difficulty in walking or climbing steps Difficulty in remembering or concentrating Difficulty (with self-care such as) washing all over or dressing Difficulty in communicating (using usual language, for example understanding or being understood by others)

The objective of the variables is to measure vision/hearing functional limitations of any kind even when wearing glasses or using a hearing aid, i.e. to assess the person's functioning capacity in the vision/hearing domain whatever the reasons of the limitations (born with, disease, accident, ageing, etc.).

Difficulty in walking or climbing steps

The objective of the variable is to measure functional limitations in getting around on foot, i.e. to assess the person's functioning capacity in mobility domain whatever the reasons of the limitations. The concept of the variable refers to the extent of difficulty, which a person has in walking or climbing steps.

Difficulty in remembering or concentrating

The objective of the variable is to measure memory and concentration functional limitations, i.e. to assess the person's functioning capacity in cognition domain whatever the reasons of the limitations (born with, disease, accident, ageing, etc.). The concept of the variable refers to the extent of difficulty, which a person has in remembering or concentrating.

Difficulty (with self-care such as) washing all over or dressing

The objective of the variable is to measure functional limitations in taking care of themselves, i.e. to assess the person's functioning capacity in self-care domain whatever the reasons of the limitations. The concept of the variable refers to the extent of difficulty which a person has in taking care of themselves independently in the listed activities are the most essential for self-care in daily life and that respondents have to perform.

Difficulty in communicating

The objective of the variable is to measure functional limitations in understanding or being understood by others, i.e. to assess the person's functioning capacity in communication domain whatever the reasons of the limitations (born with, disease, accident, ageing, etc.). The concept of the variable refers to the extent of difficulty making themselves understood, or problems understanding other people when they speak or try to communicate in other ways.

6-YEAR ROLLING MODULE -QUALITY OF LIFE

All the variables presented below refer to the respondents' opinion/feeling.

Feeling left out from society

The variable takes into consideration both lack of resources to participate, but also feeling of rejection or exclusion by the society or certain groups.

Satisfaction with financial situation

The variable refers to the respondents' degree of satisfaction with the financial situation of their household.

Detailed topic	Variable name
Well-being	Feeling left outSatisfaction with financial situation Satisfaction with personal relationships Satisfaction with time use (amount of leisure time) Feeling lonely Being happy Help from others

Satisfaction with personal relationships

The variable refers to the respondents' opinion/feeling about the relationships with all the people with whom they spend time (e.g. family, friends, colleagues from work, neighbours).

Satisfaction with time use (amount of leisure time)

The respondents should make a broad, reflective appraisal on the amount of time they currently have to do things they like doing (hobby, leisure, time off work).

Feeling lonely

The respondents are invited to indicate to what extent they felt lonely during the past four weeks. Feelings of loneliness are not synonymous with being alone but instead involve feelings of isolation, feelings of disconnectedness and feelings of not belonging.

Being happy

The variable aims at measuring psychological wellbeing. Respondents are invited to indicate to what extent they felt happy during the past four weeks.

Help from others

The variable refers to the respondent's possibility to ask for help (any kind of help: moral, material or financial) from any relatives, friends or neighbours, whether the respondent needs it or not.

Reference period

Self-perceived health and chronic morbidity refer to the situation at the time of the interview. Data relating to activity limitations concern limitations for at least six months. Data relating to unmet medical needs concern such needs during the previous 12 months.

The demographic and educational characteristics used for the analysis of health variables are collected on the date of the survey. The reference period for the labour status (also used for the analysis of health variables) is the income reference period, which is a fixed 12-month period (such as the previous calendar or tax year) for all countries except Ireland for which the survey is continuous and income is collected for the previous 12 months.

Currently, the various statistics are disseminated on an annual basis (the survey year, whatever the underlying income reference period). Once the rolling modules on health and quality of life will be implemented, statistics that are more detailed will be disseminated with a 3-year respectively, 6-year periodicity.

Main classifications

SILC makes use of the following international classifications:

- The regional codes are those from the classification of territorial units for statistics (NUTS) and the

corresponding statistical regions for the EFTA and Enlargement countries;

- Educational attainment is compiled according to the 2011 version of the international standard classification of education (ISCED 2011) ;
- Occupation in employment uses the 2008 version of the international standard classification of occupations (ISCO-08);
- The economic sector in employment is collected according to the section level (one letter) of the 2008 revision of the statistical classification of economic activities in the European Community (NACE Rev. 2).

Further methodological information

More information on SILC methodology in general is available from the relevant dedicated section of Eurostat's website or in the article on EU statistics on income and living conditions methodology .

Files with definitions for all primary and secondary SILC variables are available including the definitions of health variables .

Data quality

Since 2005 comparability over time is ensured by a common data source (SILC). SILC is based on a common framework defined by harmonised lists of target primary and secondary variables, common concepts, a recommended design, common requirements (for imputation, weighting , calculation of sampling errors) and classifications; these are aimed at maximising the comparability of the information produced.

The harmonisation of the implementation of national health variables has improved over time but the process is still on-going and the comparability of the results needs to be further improved for few Member States. Major progress was reached between 2007 and 2008 based on an agreement on harmonisation and closer co-operation between national SILC and European health interview survey (EHIS) teams.

There is also an on-going work related to the improvement and harmonisation of survey methodology. At present, Member States use different ways of collecting data for EU-SILC and perform differently according to various quality-related indicators, which could potentially have an impact on data comparability, among others:

- The fieldwork period varies between 2 to 12 months, which can have effect on some results due to seasonal effects.
- The overall individual non-response rate varied in 2018 between 5.72 % in Romania and 49.47 % in Sweden.
- Different practice and extent of using proxy interviews (someone other than the intended person answers the questions in cases when the intended interviewee could not answer for a variety of reasons).
- Data may be obtained from registers or through interviews. For the interviews a mixture of data collection techniques were used.
- Sample design and the sample size differ between Member States with an impact on the accuracy of results.

More information on the quality of SILC in general is available from the ESMS metadata file for income and living conditions , from the Statistics Explained article: EU statistics on income and living conditions (EU-SILC) methodology , and from the Comparative EU quality reports as well as National quality reports .

Health data from SILC and health expectancy indicators

More information on implementation is available in an ESMS metadata file for health variables in SILC . Equally, more information is provided in an ESMS metadata file for two indicators combining mortality data with the SILC variables on activity limitation or self-perceived general health: healthy life years and healthy life expectancy based on self-perceived health .

DATA COLLECTION IN THE CONTEXT OF THE COVID-19 CRISIS

In a methodological note about EU-SILC, called "Guidance note on the 2020 data collection in the context of the

COVID-19 crisis" it was established that the main issue for EU-SILC data collection, related to COVID-19, is that statistical offices are not able to conduct face-to-face interviews (PAPI, CAPI) with households. In most of the countries, PAPI and CAPI are the main (or only) data collection modes for EU-SILC. The general recommendation is that countries, when possible, should move to a non-contact mode of data collection (CATI or CAWI), and, if needed, to prolong the data collection period .

In addition, some countries requested clarifications of certain variables during these special circumstances. Finally, Eurostat, together with the countries, considered the possibility to add a small voluntary module on the impact of COVID-19 on 2021 EU-SILC data collection, as well as in the 2022 Module on Quality of Life.

Data dissemination

Published data

Statistical data are available in various formats. Statistics Explained articles and publications provide data and analysis, while Eurobase provides a set of multi-dimensional databases and information in a simpler format as main tables.

Direct access to anonymised microdata is provided only for scientific purposes and under specific conditions to recognized research entities such as, universities, research institutes, national statistical authorities and central banks within the EU. More information is provided on this page and specifically for the SILC here .

Health data from SILC

Disseminated health data are broken down by age and sex and one other dimension, such as: educational attainment level, income quintile group or labour status.

The International standard classification of education (ISCED) is used to measure the educational attainment level. Data are disseminated according to ISCED 1997 (until 2013) and ISCED 2011 (from 2014) are grouped as follows:

- pre-primary, primary and lower secondary education (levels 0–2);
- upper secondary and post-secondary non-tertiary education (levels 3 and 4);
- tertiary education (levels 5 and 6).

The labour status is the most frequent or main status (derived from self-reported data on the number of months of a year spent in a particular status). The following categories are used for data dissemination: employed persons ; unemployed persons ; retired persons; other inactive persons .

The income quintile is computed on the basis of the total equivalised disposable income attributed to each member of the household (for more details on the definition, please consult the income and living conditions ESMS metadata file). The first quintile group represents the 20 % of the population with the lowest income and the fifth quintile group the 20 % of the population with the highest income.

Health expectancy indicators

Health expectancy indicators are calculated by combining data on mortality with data on health status from SILC. More specifically:

- data on self-perceived health are used to calculate the indicator of healthy life expectancy based on self-perceived health;
- data on disability (activity limitation) are used to calculate the indicator of healthy life years (also known as disability free life expectancy).

Data are disseminated for women and men separately and for selected ages (at birth, aged 50 and aged 65).

Time and geographical coverage

Health data from SILC

SILC was progressively implemented as follows:

- 2003: Belgium, Denmark, Ireland, Greece, Luxembourg, Austria and Norway
- 2004: Estonia, Spain, France, Italy, Portugal, Finland, Sweden and Iceland
- 2005: Czechia, Germany, Cyprus, Latvia, Lithuania, Hungary, Malta, the Netherlands, Poland, Slovenia, Slovakia and the United Kingdom
- 2006: Bulgaria and Turkey
- 2007: Romania
- 2008: Switzerland
- 2010: Croatia
- 2011: North Macedonia
- 2013: Montenegro and Serbia
- 2017: Albania
- 2018: Kosovo[1]

Health indicators have been disseminated annually since reference year 2004.

Concerning EU aggregates, data for the EU-27 has been calculated since 2004 (only as an estimate in the first years).

Health expectancy indicators

Data for healthy life years and healthy life expectancy based on self-perceived health are available from 2004. In 2004 the data were mainly available for the EU-15 Member States. The coverage widened further in subsequent years as the EU enlarged, with the main expansion in coverage occurring in 2005.

In addition, historical data for healthy life years (using the European Community Household Panel data and other national data sources) are published for the period from 1995 to 2003, mainly covering EU-15 Member States.

As for the other health indicators, data for the EU-27 has been calculated since 2004 (only as an estimate in the first years).

Units

Health data from SILC

Most SILC indicators — including all of the health related indicators — are expressed as percentages within (or share of) the population and breakdowns are given by: sex, age, labour status, educational attainment level, income quintile group, degree of urbanization, country of birth, country of citizenship and disability (activity limitation).

Health expectancy indicators

Healthy life years and healthy life expectancy based on self-perceived health are reported as the number of years and as percentages of the (total) life expectancy.

Timing of data release

Health data from SILC

In general, data for individual countries are disseminated in the course of year N+1 (where N = year of data collection). EU aggregates and health indicators for all countries (provided that the data is available) for year N are usually published by mid-December of year N+1.

[1] This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of Independence.

Health expectancy indicators

Healthy life years and healthy life expectancy based on self-perceived health for year N are usually published by the end of March N+2 for all Member States and for the EU aggregates.

See also

Online publications

- Health in the European Union – facts and figures
- Disability statistics

Health related statistical articles based on data from the EU statistics on income and living conditions

- Long-term care statistics
- Population with disability
- Healthy life years
- Quality of life indicators - natural and living environment
- Self-perceived health statistics

General health statistics articles

- Health statistics introduced

Main tables

- Health (t_hlth) , see:

Health care (t_hlth_care)

Self reported unmet need for medical examination or treatment, by income quintile (tsdph270)

Database

- Health (hlth) , see:

Health status (hlth_state)

Health care (hlth_care)

Dedicated section

- Health
- Income and living conditions

Methodology

- EU statistics on income and living conditions methodology
- Healthy life expectancy based on self-perceived health (hlth_silc_17) (ESMS metadata file — hlth_silc_17_esms)
- Healthy life years (from 2004 onwards) (ESMS metadata file — hlth_hlye_esms)
- Health variables of SILC (ESMS metadata file — hlth_silc_01_esms)
- Income and living conditions (ilc) (ESMS metadata file — ilc_esms)

External links

- European Commission — Directorate-General for Employment, Social Affairs and Inclusion — Social protection and social inclusion — EU social indicators
- European Commission — Directorate-General for Health and Food Safety — Public health — ECHI — European Core Health Indicators

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