SDG Goal 4	**Quality education**
SDG Target 4.4	**By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship**
SDG Indicator 4.4.1	**Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill**
Time series	**Share of population with computer-related activities**

1. General information on the time series

- Date of national metadata: 23 January 2023
- National data: http://sdg-indicators.de/4-4-1/
- Definition: The time series measures the share of individuals who have been:

  - copying or moving a file or folder at a computer
  - using copy or cut and paste tools to duplicate or move information on screen
  - using spreadsheet's advanced functions to organise and analyse data, such as sorting, filtering, using formulas or creating charts
  - connecting and installing new devices, e.g. a printer or a modem
  - installing software or applications (apps)
  - creating electronic presentations with presentation software (including text, images, sound, video or charts)
  - transferring files between a computer or other devices
  - writing code in a programming language.

  The period in which the activities indicated were carried out varies with the reporting year: Up to and including 2019, the questionnaire asked for activities in the last 12 month whereas from 2021 onwards, only the activities of the past three months are taken into account.
- Disaggregation: age group; type of ict competence

2. Comparability with the UN metadata

- Date of UN metadata: May 2024
- UN metadata: https://unstats.un.org/sdgs/metadata/files/Metadata-04-04-01.pdf
- The time series is compliant with the UN metadata. However, up to the reporting year 2021 the information is for the entire reporting year and not for the last three months as required by the metadata.

3. Data description

- Before 2021: The data is derived from the European Union Statistics on the private use of Information and Communication Technologies (ICT) conducted by the Federal Statistical Office in cooperation with the statistical offices of the Länder. The ICT survey determines EU-wide harmonised and comparable indicators for the monitoring of digitisation status in the European Union. The basis is a consistent, for all Member States binding, methodological standard. 12,000 households and the persons over 10 years of age living in these households are surveyed for ICT on a voluntary basis every year. Since the survey year 2006, the ICT survey is realised as quota sample.

  From 2021: The data is derived from the European Union Statistics on the private use of Information and Communication Technologies (ICT) conducted by the Federal Statistical Office in cooperation with the statistical offices of the Länder.

In order to improve data quality, the ICT survey is no longer conducted as an independent survey, but is integrated as a voluntary sub-sample into the microcensus, which requires information, since the survey year 2021.

A few questions on internet access are asked as part of the microcensus core programme and are to be answered by each randomly selected microcensus household. The detailed questions in the microcensus survey part on internet use are to be answered only by a randomly selected proportion of the households to be surveyed in advance - i.e. a microcensus sub-sample. A maximum of 3.5 % of the households in the microcensus and the persons between 16 and 74 years living in these households are surveyed each year.

The integration of the ICT survey into the microcensus has an impact on the comparability of the ICT results over time. This is reinforced by the consequences of the Corona pandemic. Before 2021, the ICT survey was a quota sample with exclusive data collection via paper questionnaires. From 2021 onwards, the ICT survey is a random sample and thus closer to reality with regard to the dynamic development of the digital society in Germany. In addition, from ICT 2021 onwards, further survey forms (online, face-to-face, telephone) are offered.

The microcensus is an inquiry directed to households, designed to obtain information with a sample of 1 % on the population, labor market, housing situation, education, health and various topics related to the economic and social situation of households.

The survey population includes: persons in private households and collective households at their main and secondary place of residence.

The survey population does not include: members of foreign armed forces as well as foreign diplomatic representations with their family members. Persons without a place of residence (homeless people) have no chance of being covered in the microcensus.

4. Access to data source

- Individuals' level of computer skills – Eurostat table [isoc_sk_cskl_i]: https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_cskl_i/default/table?lang=en
- Individuals' level of computer skills (2021 onwards) – Eurostat table [isoc_sk_cskl_i21]: https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_cskl_i21/default/table?lang=en

5. Metadata on source data

- Quality report – Survey on the Private use of Information and Communication Technologies (ICT) (only available in German): https://www.destatis.de/DE/Methoden/Qualitaet/Qualitaetsberichte/Einkommen-Konsum-Lebensbedingungen/einfuehrung.html
- Information and communication technologies (ICT) in private households (only available in German): https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/IT-Nutzung/Methoden/IKTPrivateHaushalte.html?

6. Timeliness and frequency

- Timeliness: t + 2 months
- Frequency: Irregular

7. Calculation method

- Unit of measurement: Percentage
- Calculation:

$$\textbf{Share of population with computer-related activities}_{i,k} = \frac{\text{Persons in age group } i \text{ having performed activity } k \text{ [number]}}{\text{Persons interviewed in age group } i \text{ [number]}} \cdot 100\,[\%]$$

$i \in$ {Total (16 to under 75 years); 16 to under 25 years; 25 to under 65 years}
$k \in$ {Copying or moving of files and folders;
Using copy or cut and paste tools to duplicate or move information on screen;
Writing code in a programming language;
Connecting and installing new devices, eg a printer or a modem;
Transferring files between computer and other devices;
Installing software or apps;
Creating electronic presentations with presentation software,
including e.g. images, sound, video or charts;
Using spreadsheet`s advanced functions to organize and analyze data,
such as sorting, filtering, using formulas, creating charts}