

**Documentation of statistics for  
Adult Education Survey (AES) 2022**

## **1 Introduction**

The purpose of Adult Education Survey is to give a description of the adult populations participation in life long learning. The survey has been carried out in all EU-countries after the same guidelines. This makes the Adult Education Survey the best Danish survey for international comparisons on participation in the life long learning.

## **2 Statistical presentation**

The AES (Adult Education Survey) describes the adult Danish population's (aged 25-64 years) participation in life long learning activities, both in the formal and non-formal education system. Respondents answered among other things about the content of their ongoing education activities, the costs involved, and the volume of the education.

In the survey for 2022 the age group has been expanded from 25-64 to 18-69.

### **2.1 Data description**

The AES (Adult Education Survey) describes the adult Danish population's (aged 18-69 years) participation in life long learning activities, both in the formal and non-formal education system. Respondents answered among other things about the content of their ongoing education activities, the costs involved, and the volume of the education. Usage of computer and web as well as knowledge of foreign languages were a part of the survey too. Formal education leads to a public acknowledged exam or qualification. Non-formal education is courses, seminars, workshops, job training etc. which don't lead to an acknowledged competence.

### **2.2 Classification system**

The sampling has been made given the groups: 18-24 years, 25-34 years, 35-49 years and 50-69 years.

### **2.3 Sector coverage**

The educational sector.

## **2.4 Statistical concepts and definitions**

**Formal Education:** Educational activities leading to a public recognized examination or qualification. Formal education is typically offered by an educational institution like a technical school or university and tend to include a longer time period as an individual course. The education is structured in relation to target, time period and support, and ends up with a recognized proof of exam. The process of learning is intended by the student. Typical exams are e.g. public school, baccalaureate, HF etc, vocational education like office and trading education, social worker, university education like math, economics or law.

**Non-formal education:** Non-formal education consists of courses, seminars and similar without any public recognized exam. Non-formal education don't lead to a public recognized proof or similar. They give no formal competences, but has learning as a main purpose.

Work-related reasons for participating in an education are defined based on a wish to gather new knowledge or get new skills, which are needed at the workplace or for higher salary or for being promoted.

In relation to international comparisons the AMU courses are categorized as being non-formal education.

## **2.5 Statistical unit**

Persons.

## **2.6 Statistical population**

Persons aged 18- 69 years of age living in Denmark at the time of the survey.

## **2.7 Reference area**

Denmark.

## **2.8 Time coverage**

The AS survey was conducted in 2022-2023.

## **2.9 Base period**

Not relevant for these statistics.

## **2.10 Unit of measure**

Persons.

### **2.11 Reference period**

The Data collection of the AES survey was conducted between October 2022 and March 2023. All questions on participation in education, instruction hours, etc. relates to the latest 12 month before the interview. Administrative registers used in the survey are based on the latest update related to the reference period.

### **2.12 Frequency of dissemination**

The AES is planned to be carried out every 6th year.

### **2.13 Legal acts and other agreements**

The Act on Statistics Denmark.

AES has been conducted according to the Commission's regulation (EU) no 2021/861 on specifying the technical items of the data set and establishing the technical formats for transmission of information on the organisation of a sample survey in the education and training domain pursuant to Regulation (EU) 2019/1700 of the European Parliament and of the Council.

### **2.14 Cost and burden**

Nor evaluated since participation is voluntary.

### **2.15 Comment**

No supplementary documentation is available.

## **3 Statistical processing**

Data comes from interviews conducted in 2022 and 2023. 2.448 interviews with persons in the age group 18-69 years have been conducted.

The sample has been drawn from the Population register. The net sample size is 9058 persons.

### **3.1 Source data**

The gross sample size of the AES survey was 9058 respondents. The interviews was conducted by a combination of web-interviews and interviews by phone.

Different administrative sources are used to select the sample. Administrative sources are also used to obtain various background information on the people interviewed, for example on educational level or workplace.

Population: The Danish population of age 18-69 years.

Sampling Frame: Central Person Register (CPR).

### **3.2 Frequency of data collection**

Approx. every 6th year.

### **3.3 Data collection**

The persons selected were checked for telephone number, and contacted by phone if possible. The persons for whom a phone number could not be identified were contacted by letter asking either to get in touch with Statistics Denmark by phone or alternatively to answer the interview on the web. Web-interviews are used as a supplement to telephone interviews, because the experience from other surveys has shown it is some certain age groups who can't be reached by phone. In other words the usage of web-interviews increases both the representativeness and the as well as the response rate.

### **3.4 Data validation**

In order to assure a high quality of the data some control procedures were build-in in the as well in the web as in the telephone set-up for the interviewing. Data was also edited for validity and consistency between the answers.

### **3.5 Data compilation**

A weighting procedure on sex ,age, education, heritage and family income was carried out in order for the sample to reflect the distribution of the two variables in the universe. For each of the four age groups the results were enumerated to represent the total universe.

The weighting procedure in the AES is based on a regression estimator. In the regression estimator auxiliary information is exploited in the estimation procedure. In the case of the Danish AES survey the auxiliary information comes from the statistical registers of Statistics Denmark. The basic idea in the regression estimator is that relevant auxiliary information (chosen in a way that it covariates with variables of interest in the survey) contain information about study variables. This information is utilized in the estimation process to obtain better estimates. The stronger the correlation between target variables and auxiliary variables, the better is the final estimate. The quality is improved by lowering the standard error on estimates and/or by correcting for non response bias. An important characteristic of the regression estimator is the calibration property. Since information from administrative registers is used as auxiliary information the final estimates are based on distributions from administrative registers and not from the response population. This means that the final estimates are calibrated according to the auxiliary information from administrative registers. The estimation is carried out using the SAS-macros CLAN developed by Statistiska centralbyrån in Sweden. The variance (and standard error) estimate is based on a Taylor approximation.

### **3.6 Adjustment**

No further corrections are carried out apart from what has been described in Data Validation and Data Treatment.

## **4 Relevance**

AES is mainly used by public authorities and international organizations and it is the major detailed survey giving details about adults participation in life long learning activities on an international bases.

### **4.1 User Needs**

AES (Adult Education Survey) can be used by a number of users, among others by ministries, research institutes, international organizations, journalists, and others with an interest in the educational area.

### **4.2 User Satisfaction**

No user satisfaction survey has been conducted.

### **4.3 Data completeness rate**

AES has been conducted according to the Commission's regulation (EU) no 2021/861 on specifying the technical items of the data set and establishing the technical formats for transmission of information on the organisation of a sample survey in the education and training domain pursuant to Regulation (EU) 2019/1700 of the European Parliament and of the Council.

## **5 Accuracy and reliability**

The AES is in general a reliable survey. However, when analyzing data based on breakdown of several variables the basic number of respondents can be very small which increases the uncertainty considerably. Results from the AES survey can be used for labor market analysis, in research projects and in the public debate.

### **5.1 Overall accuracy**

Equivalent to other surveys based on samples the results of this survey have some sampling errors attached. The sampling errors are related to the sample selection and the patterns of non-response. Non-response occurs when an interview with a selected person is not carried out. Non-response increases the inaccuracy rate because the probability of conducting an interview with all selected people is uneven. In other words, it is the same kind of sections of the populations where interviews are not being carried out at the same extent as other sections of the population. Consequently the level of representativity is affected.

In the AES survey it was decided to apply intervals of confidence at a 95 significance level. The uncertainty has been calculated for participation in formal education and participation in courses.

For tables based on break-downs of various variables it can occur that the result is based on very few respondents. This means that the re-scaling to the total population can sometimes be based on very few respondents. Consequently, the tables must be looked upon with an additional uncertainty compared to results based on a larger number of respondents.

## **5.2 Sampling error**

The sampling error is calculated as an interval of +/- around an estimated value, usually expressed by 95 pct. confidence level.

## **5.3 Non-sampling error**

Apart from coverage errors related to sex and age groups no estimations have been conducted in relation to other uncertainties than sampling errors. In surveys like this also errors arising by the respondent's misunderstanding of questions or concepts are present. For interviews conducted as telephone interviews these types of error are limited.

## **5.4 Quality management**

Statistics Denmark follows the recommendations on organisation and management of quality given in the Code of Practice for European Statistics (CoP) and the implementation guidelines given in the Quality Assurance Framework of the European Statistical System (QAF). A Working Group on Quality and a central quality assurance function have been established to continuously carry through control of products and processes.

## **5.5 Quality assurance**

Statistics Denmark follows the principles in the Code of Practice for European Statistics (CoP) and uses the Quality Assurance Framework of the European Statistical System (QAF) for the implementation of the principles. This involves continuous decentralized and central control of products and processes based on documentation following international standards. The central quality assurance function reports to the Working Group on Quality. Reports include suggestions for improvement that are assessed, decided and subsequently implemented.

## **5.6 Quality assessment**

For sample based surveys the results have some sampling errors involved. The sampling errors are related to the sample selection and the patterns of non-response. Non-response occurs when an interview with a selected person is not carried out. Non-response increases the inaccuracy rate because the probability of conducting an interview with all selected people is uneven. In other words, it is the same kind of sections of the populations where interviews are not being carried out at the same extent as other sections of the population. Consequently the level of representativity is affected. The register used for sampling has a total coverage of persons.

The respondents were selected using stratified random sampling. The population was divided into three non-overlapping strata, and samples were selected from each stratum independently. The three strata are defined by the age groups.

Stratum Age group 1 18 - 24 years 2 25 - 35 years 3 36 - 49 years 3 50 - 69 years

## **5.7 Data revision - policy**

Statistics Denmark revises published figures in accordance with the [Revision Policy for Statistics Denmark](#). The common procedures and principles of the Revision Policy are for some statistics supplemented by a specific revision practice.

## **5.8 Data revision practice**

Final figures are published.

## **6 Timeliness and punctuality**

The AES is in general published according to agreed timing.

### **6.1 Timeliness and time lag - final results**

Only final results are published.

### **6.2 Punctuality**

The AES results are in general published according to the announced timing.

## **7 Comparability**

Data from the EU countries are published by Eurostat.

### **7.1 Comparability - geographical**

Comparable data for the AES-surveys within EU are being published by Eurostat.

### **7.2 Comparability over time**

The AES survey was conducted 3 times: - Adult Education Survey 2008(pilot) - Adult Education Survey 2011 - Adult Education Survey 2016 - Adult Education Survey 2022

Comparison with the former AES survey from 2008 is not possible because the results from the 2008 survey have not been enumerated.

### **7.3 Coherence - cross domain**

International statistics:

Labor Force Survey (LFS) since 2003

Eurostat: [Eurostat AES](#).

### **7.4 Coherence - internal**

Not relevant for these statistics.

## **8 Accessibility and clarity**

The Danish AES is published in the news release of NYT fra Danmarks Statistik (News from Statistics Denmark) and in the StatBank Denmark. The main results of AES will be published by Eurostat in a common European report.

### **8.1 Release calendar**

The publication date appears in the release calendar. The date is confirmed in the weeks before.

### **8.3 User access**

Statistics are always published at 8:00 a.m. at the day announced in the release calendar. No one outside of Statistics Denmark can access the statistics before they are published.

### **8.2 Release calendar access**

The Release Calendar can be accessed on our English website: [Release Calendar](#).

### **8.4 News release**

New releases of "News from Statistics Denmark" can be found on the homepage

### **8.5 Publications**

No publication apart from NYT fra Danmarks Statistik.

### **8.6 On-line database**

The statistics are published in the StatBank under the subjects in the following tables:

- [AES1A](#): Participation in adult education (AES) by sex, age, level of education, employment status, urbanisation, formal education, non-formal education and time
- [AES2A](#): Adult education by sex, age, level of education, employment status, urbanisation, reason for non-formal education and time

### **8.7 Micro-data access**

Researchers have access to anonymised sets of micro-data based on agreement with Eurostat.

### **8.8 Other**

Not relevant for these statistics.

### **8.9 Confidentiality - policy**

[The general discretion policy of Statistics Denmark.](#)

### **8.10 Confidentiality - data treatment**

The general practices of Statistics Denmark has been applied.

### **8.11 Documentation on methodology**

No other public methodological documentation is available. EU (i.e.. Unit 5: Education, Health and Social Protection) is currently working on a report: Adult Education Survey 2011 - EU Quality Report. However, when this report is available is not known.

### **8.12 Quality documentation**

Results from the quality evaluation of products and selected processes are available in detail for each statistics and in summary reports for the Working Group on Quality.

## **9 Contact**

The administrative placement of these statistics is in the division of Population and Education, Social Statistics. The contact person is Christian Johansen, tel.: + 45 2116 4948, and e-mail: CVJ@dst.dk.