

The Swedish Occupational Register with statistics 2009

AM0208

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0 General information

0.1 Subject area

Subject area: Labour market

0.2 Statistical area

Statistical area: Employment, gainful work and working hours

0.3 SOS classification

Belongs to (SOS) Yes



Special rules apply for surveys that are included in the official statistics of Sweden concerning quality and availability. Please see the Official Statistics Ordinance (2001:100).

0.4 Statistics coordinator

Government agency/organisation: Statistics Sweden
Postal address: SE-70189 ÖREBRO
Visiting address: Klostergatan 23
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0.5 Producer

Government agency/organisation: Statistics Sweden
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0.6 Obligation to provide information

The majority of the occupational data is collected from enterprises and organisations, all of whom have a legal obligation to provide data in accordance with the Official Statistics Act (2001:99). The statistics are also regulated by the Official Statistics Ordinance (SFS 2001:100) and Statistics

Sweden's regulations (SCB-FS 2010:6).

0.7 Confidentiality and rules for handling personal information

Chapter 24, Section 8 of the Swedish Secrecy Act (2009:400) governs confidentiality regarding the authority's specific task for the production of statistics. The rules laid down in the Personal Data Act (1998:204) apply to the automatic processing of personal information. Within the area of statistics, there are also specific rules on the handling of personal data in the Official Statistics Act (2001:99) and the Official Statistics Ordinance (2001:100).

0.8 Archiving regulations

Forms and data media received as part of the Statistic Sweden business survey are saved for two years. Whether the register information needs to be retained or not will be assessed. None of the data is currently filtered.

0.9 EU regulations

There are no EU regulations.

0.10 Objectives and background

The Swedish Occupational Register replaces the occupational data previously collected as part of the population and Housing Census (FoB). Another important aspect is how to handle the occupational data for persons who were previously classified by occupation but no longer work. Examples of such groups include pensioners and unemployed persons.

Data are retrieved from, among other sources, the Wages and salaries statistics and a questionnaire survey to private employers. The aim is to produce statistics on occupations and occupational trends within different industries and social sectors. Work on developing an occupational register was started at the end of the 1990s and in 2003, data from the first register relating to 2001 were published. Between 2001 and 2004, statistics on the three-digit SSYK level were presented. From 2005 onwards, the Swedish Occupational Register began presenting its statistics on the four-digit SSYK level although not for engineers, the data for whom were not presented on a four-digit SSYK level until the register relation to 2007, when the four-digit level was considered to be of adequate quality. Since 2007, single-employee enterprises have been included in the sample, improving the statistics for this group as well.

Occupational data is used for many diverse purposes, such as education and labour market planning, occupational medicine and social science research and when studying occupational safety, work environment and gender equality.

0.11 Use of the statistics

The major users of the statistics are government ministries, central and regional authorities, municipalities, county councils, organisations, research institutes and the International Labour Organization (ILO). The general public and entrepreneurs also have a major interest in the statistics.

0.12 Design and implementation

The register is based on occupational data from about 20 different sources, the most important ones being:

- Salary structure statistics, private sector
- Salary structure statistics, municipal sector
- Salary structure statistics, public sector
- Salary structure statistics, county council sector
- Occupational survey to employers, private sector
- The Longitudinal Individual Database (LINDA), business survey
- Short-term business statistics, salaries in public sector
- Salary statistics from various employer organisations

Furthermore, the Statistics Sweden Farm Register (LBR), Total Population Register (RTB), Employment Register (SREG), Register of Jobs, Studies and Other Activities (AREG) and the Register of the Educational Attainment of the Population (UREG).

Apart from in a few individual sources, the data are provided by *employers*. In *the public sector*, mostly separate total population surveys are carried out. When collecting data, Statistics Sweden cooperates with the Swedish Association of Local Authorities and Regions and the Swedish Agency for Government Employers. Most of the data from the government sector refer to *1 September*, while the data for services in county councils and municipalities refer to *1 November*. Employees in municipality-owned foundations and companies, government-owned companies and business-driven public utilities are counted as private sector employees.

The wage and salary structure statistics for *the private sector* (SLP) are based on negotiated agreement statistics produced by different employer organisations and a supplementary survey carried out by Statistics Sweden. When collecting data, Statistics Sweden cooperates with the Confederation of Swedish Enterprise (previously Swedish Employers' Confederation (SAF)) and six other employer organisations. The survey is mainly sample-based, a total population survey is only carried out among enterprises with at least 500 employees. The sample includes just over 11 000. Most of the occupational data refers to *1 September 2001* and thereafter. At the request of the Church of Sweden Parish Association, Statistics Sweden performs a comprehensive survey of employees in the Church of Sweden, which has belonged to the private sector since 2000. The Church's measurement period is *1 November*.

Employment data from enterprises not included in the salary structure statistics, mainly smaller enterprises and organisations with 1-19 employees, are collected on a continuous basis by Statistics Sweden using a special occupational survey during the spring and autumn. About 47 000 enterprises are surveyed every year on a rolling schedule, according to which all enterprises are surveyed every four to five years.

Over 500 000 enterprises and organisations have either directly or indirectly submitted occupational data to the register.

0.13 International reporting

There is no international reporting

0.14 Planned modifications in future surveys

New supplementary sources may be of interest to use to reduce non-response. There are plans to begin presenting occupational statistics for sole proprietors in the future.

1 Overview

1.1 Observation parameters

The register covers the entire registered population aged 16 years and over on 31 December 2009.

Two different employment populations can be distinguished in the register, firstly *gainfully employed persons during November* in accordance with the definition used in the Labour Statistics based on Administrative Sources (RAMS), and secondly *active persons who have been professionally active at some point during the year*. The latter population includes all those who have received an aggregate salary or entrepreneurial income during the year of *at least one price base amount*.

For persons classified as either gainfully employed or professionally active, the register contains information both on the work that generates the highest earned income, and, where appropriate, on the second-highest earned income.

If possible, all the persons in the register have been assigned occupational data that are connected with each job respectively. If there are no occupational data for the job in question or if the person hasn't worked at all, the latest available data are entered into the register.

Occupations are determined based on the individual's working tasks at the time the measurement is taken and do not necessarily have a direct association with the person's education/vocational training. A person can in principle change occupations in connection with each new employment and may even have several occupations simultaneously.

To begin with, the annual official occupational statistics from the register covers only *employees* aged 16-64 years. One item of occupational data is presented per person.

Variables that originate from the Swedish Occupational Register's own collection and processing:

Occupational data in accordance with SSYK (Swedish Standard Classification of Occupations)
Source of the occupational data (KallaSSYK)
Timeliness of the occupational data (ArSSYK)
Status of the occupational data (StatusSSYK)

Variables that originate from the Wage and salary structure Statistics:

Occupational data in accordance with SSYK (Swedish Standard Classification of Occupations)
Scope of employment (Tjomf)

Variables that originate from TPR (Total Population Register). Reference period for these is 31/12 2009:

Civic registration number: (PersonNr)
The person's gender (Kon)
The person's age in years at the end of the year (Alder)
The person's domicile: County, municipality, parish code and name of property (Lan, Kommun, Forsamling, FastighetsBet)

Citizenship (Medborg)

The person's country of birth

Date of most recent migration into Sweden (Datinv)

Data on whether the person has Swedish citizenship or not

Variables that originate from AREG (Register of Jobs, Studies and Other Activities) or SREG (Employment Register). (Variables that originate from the workplace are retrieved from the Swedish Business Register (reference period 2009):

Corporate ID number: ID number for enterprises, organisations, etc. (PeOrgNr)

The person's employment status (SyssStat)

The person's occupational status (YrkStalln)

Which sector the enterprise belongs to (Sektor)

The workplace's industrial classification in accordance with SNI (Swedish Industry Classification) (AstStni)

The workplace's location: County and municipal code (AstLan, AstKommun)

ID number for the workplace (CfarNr)

The person's gross salary or entrepreneurial income (Ink, Lonfink)

Variables that originate from UREG (Register of the Educational Attainment of the Population):

Highest level of education achieved, level according to SUN (Swedish Education Nomenclature) (SUN2000niva)

Highest level of education achieved, subject/specialisation according to SUN (Swedish Education Nomenclature) (SUN2000inr)

Variables that originate from RPU (Register of Participation in Education):

People in education during the autumn (Stud)

1.2 Statistical target parameters

The Swedish Occupational Register forms the basis of continuous annual statistics, where occupation is presented to begin with in the form of the number of persons in occupational groups in accordance with the Swedish Standard Classification of Occupations (SSYK96), on the three-digit and four-digit level. Since these are basically total population statistics, they can be presented on a low regional level.

Object group		Variable	Measurement
Population	Breakdown into study domains		
Gainfully employed persons	Gender, age, country of birth, education or occupational status, location of the person's domicile, location of local business unit, its industry or which sector it belongs to	Occupation	Number
Professionally active persons	Gender, age, country of birth, education or occupational status, location of the person's	Occupation	Number

	domicile, location of local business unit, its industry or which sector it belongs to		
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1.3 Output: statistics and microdata

Occupational statistics for 2009 are available from 4 March 2011. The statistics are presented in press releases and via the Statistics Sweden “Statistical Database” in the form of flexible tables. A number of fixed tables and diagrams are presented in “Tables and diagrams”. A relatively large amount of specially designed statistics are produced in addition to the standardised presentation. The statistics are also presented in a statistical report, in which some of the text can be of an analytical nature.

The Swedish Occupational Register is available for both microdata extraction and table extraction from 4 March 2011. It consists of a *basic register* which in turn forms the basis for two variations/alternative versions; “*Professionally active persons*” which includes all persons who are over 16 years old and have earned over one base amount during the year in question and “*Gainfully employed persons*” which includes all persons who are over 16 years old and classified as in work in accordance with the labour statistics based on administrative sources (RAMS).

1.4 Documentation and metadata

The occupational register statistics are documented according to Statistics Sweden’s documentation system; The quality of the statistics is described in “Description of the statistics”, Bas. The production of the statistical register and the statistics are described in “Documentation of the statistics”, CBD (this document). Detailed information on microdata in the register is described in the “Microdata documentation”, MetaPlus. All this documentation is available on the Statistics Sweden website adjacent to the published statistics.

In the series “*Background facts on labour market and education statistics*”, there is a report on the conditions and costs for the occupational register produced in 1998. In the same series, there is also a report that describes how the register is produced and its content, “*Swedish Occupational Register with occupational statistics. A description of content and quality* published in 2011.

2 Data collection

2.1 Frame and frame procedures

The Swedish Occupational Registers frame population is all those registered in Sweden on 31/12 2009 and is delimited using the Total Population Register (RTB). RTB contains all the persons registered in Sweden and is updated on a daily basis with data from the Swedish Tax Agency.

The target population consists of the entire working population. In this case, the context of “the working population” includes all gainfully employed persons over the age of 15.

2.2 Sampling procedures

Apart from in a few individual sources, the data are provided by employers. In the public sector, mostly separate total population surveys are carried out, although two sample surveys were also performed.

The wage and salary structure statistics in the private sector (SLP) are based on negotiated agreement statistics produced by different employer organisations and a supplementary survey carried out by Statistics Sweden. When collecting data, Statistics Sweden cooperates with the Confederation of Swedish Enterprise (previously Swedish Employers' Confederation (SAF)) and six other employer organisations. The survey is mainly sample-based. Total population surveys are performed of all enterprises with more than 500 employees, whereas sample surveys are conducted among those with less than 500 employees. The sample consists of just over 11 000 enterprises. Most of the occupational data refers to 1 September 2001 and thereafter. Read more about the sampling procedure in “Documentation of the statistics”, SCBDOK for the wage and salary structure statistics.

Occupational data from enterprises not included in the salary structure statistics, mainly smaller enterprises and organisations with 1-19 employees, are collected on a continuous basis by Statistics Sweden using a special occupational survey during the spring and autumn. About 47 000 enterprises are surveyed every year on a rolling schedule, according to which all enterprises are surveyed every four to five years.

2.3 Measurement instruments

Occupation classified according to SSYK 96 (Swedish Standard Classification of Occupations). As mentioned previously, the register is based on a number of different sources and also draws from several existing registers at Statistics Sweden.

Different measurement instruments are used for different sources. For further information on the measurement instruments used in each source, please refer to the “Documentation of the statistics”, SCBDOK of each source.

Most of the enterprises not included in the salary statistics are companies with 1-19 employees, a few have more than 49 employees, a small number of questionnaires are sent to sole proprietors.

Enterprises with 2-18 employees receive a two-page questionnaire, whereas enterprises with 19-49 employees receive a multi-page one. See the questionnaire in Appendix 1.

2.4 Data collection procedures

As mentioned previously, the register is based on a number of different sources and also draws from several existing registers at Statistics Sweden.

Apart from in a few individual sources, the data are provided by employers. In the public sector, mostly separate total population surveys are carried out. When collecting data, Statistics Sweden cooperates with the Swedish Association of Local Authorities and Regions and the Swedish Agency for Government Employers. Most of the data from the government sector refer to 1 September, while the data for services in county councils and municipalities refer to 1 November. Employees in municipality-owned foundations and companies, government-owned companies and business-driven public utilities are counted as private sector employees

At the request of the Church of Sweden Parish Association, Statistics Sweden performs a comprehensive survey of employees in the Church of Sweden, which has belonged to the private sector since 2000. The Church's measurement period is 1 November.

The supplementary occupational data is collected by the Swedish Occupational Register via questionnaires and online. The enterprises are also given the opportunity to reply by fax or email if they wish. All enterprises are given the opportunity to reply online using a password they receive with the questionnaire. The address to the online questionnaire is <https://insamling.scb.se>. Respondents may request extra forms so that they can add new employees whose details are not pre-printed on the questionnaire they were sent. The names and civic registration numbers of individuals employed at each enterprise are pre-printed on the questionnaire forms. The employer is supposed to code the occupation in accordance with the Swedish Standard Classification of Occupations (SSYK96). All enterprises receive guidance in how to submit occupational data, a covering letter (see Appendix 2) and a coding template. Further information on how to code occupations and a search engine are available on a specified website. Despite these technical aids, occupational data classified in accordance with SSYK by the respondent may lack quality. The respondent doesn't always have time or the opportunity to study the classification system in any great detail. Furthermore, many jobs are complex and cover vastly different working tasks. Most of the material collected is received by the Statistics Sweden electronic data collection system.

Statistics Sweden interviewers are responsible for about 18 percent of the occupational data collection in each round of surveys. These data are collected as part of the reminder procedure. When data are received, postal returns are taken care of and the data are pre-examined manually. This pre-examination includes a quick check of each received form. The form is checked to see that it is not damaged and a check is also made of the completed information, comments, any changes of address, ownership changes, bankruptcies, etc. Files are checked so that they tally with the given post description.

Postal returns are taken care of as quickly as possible. The address, name and telephone number are checked against data in the Business Register (FDB), the Tax Agency, Yellow Pages, etc. A new form is sent to enterprises that have changed their address.

Enterprises that have not submitted completed forms by the last response date are sent a reminder. Non-respondents are sent two reminder letters and receive another reminder by telephone. The first reminder is sent out about one week after the last response date. If an enterprise has lost the original questionnaire, they are sent a new one. Data are also received by telephone, fax or email during the reminder procedure. Names and telephone numbers of enterprises that still haven't replied one week after the first reminder are sent to the Statistics Sweden Interview Department for further processing by telephone. Interviewers remind enterprises with more than 19 employees and accept data direct by telephone from smaller enterprises. The third and final reminder is a letter written in a "firmer" tone. Enterprises that still haven't submitted any data after the third reminder are registered as non-response enterprises and they will receive another questionnaire in two years time.

Some non-response occurs. This is because certain types of enterprise are not surveyed, because certain categories of employee are not included in the pay statistics survey population or because the enterprises that are selected fail to submit data.

Enterprises in the private sector chosen as data providers in the pay and occupation surveys are legally obliged to submit data. To minimise non-response, the selected business operators are reminded both in writing and by telephone. Enterprises that despite several reminders still fail to reply may be fined for non-compliance.

2.5 Data processing

Occupation is a multifaceted concept that is difficult to define. To satisfy different needs, several classification systems have been developed, based on separate criteria. Regarding salary statistics, for example, there are a number of occupational terms that only concern certain occupational areas and whose use is very narrow and specific. So that the occupational data in the various sources can be compared, data that is not classified in accordance with the Swedish Standard Classification of Occupations must be translated using different translation keys. Depending, among other things, on the degree of detail of the original terminology and similarities with SSYK, such a translation can be more or less complete.

Once the questionnaires have been manually pre-examined, they are sent on for scanning and more detailed examination. There is a four-step scanning process: scanning, interpretation, verification and transfer. During the scanning process, the questionnaires are checked both automatically and manually. The material is then uploaded into a database for further analysis. Damaged and faxed questionnaires are registered manually.

After the data has been registered and uploaded, it is then subject to detailed production review, which involves the analysis of all the data received for each individual. This is done both by machine and manually. Manual analysis involves a feasibility control between occupational and SNI codes, occupational codes and occupational descriptions as well as between occupational codes and data from the Statistics Sweden Education Register.

The automatic control generates error messages that are then rectified by the staff. Obvious errors that are discovered, such as verification errors etc., are dealt with immediately. If there are any remaining “errors” or if any data is assumed to be incorrect, the data provider is contacted and asked to supplement or correct the submitted data. In such cases, a comment is written in the comments field in the database.

Towards the end of each production round, a macro-control is performed, looking at unusual occupations.

Forms arriving after the round has been completed cannot be entered into the application manually. Instead, they are fed into the Archive database using SQL.

The occupational data received via the occupational questionnaire and the various administrative sources is combined in what is known as a “gross register” with all the occupations collected on individuals for each corporate ID number, from all available sources for the year in question. Each person can occur in the database more than once depending on how many employers he or she has received income from during the year in question and the extent to which these employers have submitted data on the person’s occupation.

In the basic register, the population is set at all persons aged 16 or older who are registered as domiciled in Sweden on 31/12 in the year in question according to the Total Population Register (TPR). Data from several years is used to achieve a complete occupational register. The annual gross registers can be used as an aid. The register is then created in a series of steps to establish each individual’s “best” occupational data.

- Step 1. The corporate ID number where the person has his or her main gainful employment is retrieved from RAMS.
- Step 2. Identification of corporate ID numbers where the person has perhaps has a second paid job.
- Step 3. The corporate ID number where the person has received his or her largest income is retrieved from the Statement of Income Register.
- Step 4. The corporate ID number where the person has received his or her second-largest income is retrieved from the Statement of Income Register.
- Step 5. Matching against the gross file for the survey year (Year_x) for the person with regard to each corporate ID number respectively in order to obtain a piece of occupational data submitted by the employer for the corporate ID number.
- Step 6. Matching against the gross file for the year after¹ (Year_{x+1}) for the individual with regard to each corporate ID number respectively to obtain a piece of occupational data.
- Step 7. Matching against the gross file is then searched for preceding years ($\text{Year}_{x-1}, \text{Year}_{x-2}, \dots, \text{Year}_{x-n}$) for the individual with regard to each corporate ID number to obtain a piece of occupational data.
- Step 8. For individuals for whom no occupational data has been found from any of the identified employers, Steps 5 to 7 are repeated but without checking for a corporate ID number. For this other occupation, data on additional corporate ID numbers the occupational data comes from is also retrieved.

The ArSsyk variable specifies which year data is retrieved from.

Two separate registers, *Gainfully employed persons* and *Professionally active persons*, are then created for the two study domains. These two registers form the basis of all reporting of occupations from the Swedish Occupational Register. The objective is to assign an occupation to all those reported as gainfully employed persons/professionally active persons. The StatusSsyk variable specifies which occupational data has been used in the table presentation. StatusSsyk is a quality variable and provides an indication of how strong a connection the individual has to the reported occupation.

Step 9. For each presentation, the individual's primary occupation is used in the first place. In other words, if the person is classified as gainfully employed and there is an occupation specified by the relevant employer in the basic register, it is this data that is used. This gives StatusSsyk = 1.

Step 10. In the second place, the occupation that the person has had as his or her main occupation seen from the second presentation is used. In other words, if there is no occupational data for a person who is classified as a gainfully employed person from the employer where the person is deemed to be gainfully employed, but there is an occupation for where the person is deemed to have his or her main employment as a professionally active person, this data is used and vice versa. This gives StatusSsyk = 2.

Step 11. Similarly, the second job for each presentation respectively is used in the third place. This gives StatusSsyk = 3.

Step 12. In the fourth place, the occupation that the person had as a second job according to the second presentation classification. This gives StatusSsyk = 4.

Step 13. Lastly, occupational data that originates from other employers is used. This gives StatusSsyk = 5.

Step 14. If the individual still has no occupational data, he or she is given StatusSsyk = 6.

If the individual has a second job, only the occupational data originating from the enterprise where the person by definition does that job is determined. In other words, if the data is missing, no attempt is made to retrieve additional occupational data.

More detailed information on how the register is compiled can be found in the report *The Swedish Occupational Register with occupational statistics. A description of content and quality* published in 2011.

3 Data processing and presentation

3.1 Estimations: assumptions and formulas for calculation

The Statistics are presented in number form. Some of the statistics are presented as percentages where the base is the number of persons in the chosen study domain.

3.2 Presentation procedures

The results of the survey are published mainly in press release and Statistical Report (SM) AM0208. A number of tables are published at the same time in the *Statistical Database (SSD)*, that can be accessed via the Statistics Sweden website at www.scb.se/yrke. A table is also presented in the Statistics Year Book.

In the series *Background facts on labour market and education statistics* there is a report on the conditions and costs for the Swedish Occupational Register produced from 1998. In the same series, there is also a report that describes how the register is produced and its content, *Swedish Occupational Register with occupational statistics. A description of content and quality* published in 2011.

4 Final observation registers

4.1 Production versions

Detailed descriptions of the statistics register are available via the Statistics Sweden website in connection with the web-pages on which the survey is presented.

4.2 Archive versions

Forms and data media received as part of the Statistic Sweden business survey are saved for two years. Whether the register information needs to be retained or not will be assessed. None of the data is currently filtered.

4.3 Experience from latest survey round

The work has gone according to plan.

Appendices

Appendix 1. Occupational survey

Appendix 2. Covering letter for the occupational survey