

Quality Report of 2006 Structure of Earnings Survey in the Netherlands

1. Relevance

This optional dimension is not taken into consideration.

2. Accuracy

2.1. Sampling errors

Coefficients of variation (CV), standard deviation (s, square root of the variance) and mean are listed in tables 1 and 2. In table 1 for variable B42 'Gross earnings in the reference month' and in table 2 for variable B43 'Average gross hourly earnings in the reference month'. The key-variables, B42 and B43, are broken down to:

- full-time (separately for men and women) and part-time employees,
- economic activity (NACE section),
- occupation (ISCO-88 at the 1-digit level),
- age band,
- geographical location (NUTS level 1),
- highest level of education (ISCED),
- size of enterprise.

Table 1. Gross monthly earnings

	CV	s	Mean
	%	euro	euro
Total	0.2	5	1923
Full-time employees			
Male	0.3	8	2849
Female	0.4	9	2264
Part-time employees	0.3	4	1077
Economic activity			
C Mining and quarrying	4.1	160	3926
D Manufacturing	0.5	11	2322
E Electricity, gas and water supply	2.4	75	3085
F Construction	0.7	16	2339
G Wholesale and retail trade; repair of motor vehicles ..	0.6	9	1523

H Hotels and restaurants	1.5	13	825
I Transport, storage and communication	1.0	21	2141
J Financial intermediation	1.4	43	3058
K Real estate, renting and business activities	0.7	13	1898
L Public administration and defence, compulsory ..	0.5	12	2557
M Education	0.5	11	2089
N Health and social work	0.5	8	1550
O Other community, social and personal service ..	1.3	22	1689
Occupation			
0 Armed forces	1.7	45	2676
1 Legislators, senior officials and managers	0.9	31	3594
2 Professionals	0.4	12	2796
3 Technicians and associate professionals	0.4	10	2181
4 Clerks	0.5	8	1596
5 Service workers, shop and market sales workers	1.0	12	1230
6 Skilled agricultural and fishery workers	1.7	22	1298
7 Craft and related trades workers	0.4	8	2017
8 Plant and machine operators and assemblers	0.5	11	2006
9 Elementary occupations	0.8	8	967
999 Occupation unknown	1.0	10	966
Age			
1 15-19 Years	1.1	3	308
2 20-29 Years	0.4	6	1355
3 30-39 Years	0.3	7	2124
4 40-49 Years	0.5	11	2294
5 50-59 Years	0.5	12	2393
6 60 Years and over	1.6	31	1957
Geographical location			
NL1 Noord-Nederland	0.6	11	1739
NL2 Oost-Nederland	0.5	8	1759
NL3 West-Nederland	0.4	8	2070
NL4 Zuid-Nederland	0.4	8	1818
Highest level of education			
01 ISCED 0 and 1	0.9	11	1154
02 ISCED 2	0.6	8	1310
03 ISCED 3 and 4	0.3	5	1769
04 ISCED 5B	1.6	46	2843
05 ISCED 5A	0.4	11	2806
06 ISCED 6	1.8	73	4095
Size of the enterprise			
E1_9	0.9	13	1517
E10_49	0.5	9	1794
E50_249	0.6	12	2021
E250_499	0.7	14	2088
E500_999	0.7	14	2032
E1000	0.4	8	1979
Sex			
F Female	0.3	4	1391
M Male	0.3	7	2376
Full-time or part-time employees			
FT Full-time employees	0.3	7	2707
PT Part-time employees	0.3	4	1077

Table 2. Average gross hourly earnings

	CV	s	Mean
	%	euro	euro
Total	0.3	0.05	15.11
Full-time employees			
Male	0.3	0.05	17.07
Female	0.4	0.06	13.98
Part-time employees	0.7	0.09	13.82
Economic activity			
C Mining and quarrying	4.3	1.04	24.34
D Manufacturing	1.2	0.19	16.70
E Electricity, gas and water supply	2.1	0.42	20.05
F Construction	1.9	0.34	17.61
G Wholesale and retail trade; repair of motor vehicles ..	1.0	0.13	12.40
H Hotels and restaurants	1.5	0.13	8.80
I Transport, storage and communication	1.3	0.19	15.05
J Financial intermediation	1.3	0.27	21.02
K Real estate, renting and business activities	0.9	0.13	14.91
L Public administration and defence, compulsory ..	0.4	0.07	17.63
M Education	0.4	0.06	16.83
N Health and social work	0.5	0.07	14.41
O Other community, social and personal service ..	1.5	0.23	15.47
Occupation			
0 Armed forces	1.9	0.33	17.36
1 Legislators, senior officials and managers	1.0	0.23	23.62
2 Professionals	0.6	0.12	20.79
3 Technicians and associate professionals	0.6	0.10	16.76
4 Clerks	0.7	0.09	13.34
5 Service workers, shop and market sales workers	1.1	0.12	11.24
6 Skilled agricultural and fishery workers	3.3	0.34	10.39
7 Craft and related trades workers	1.6	0.24	15.03
8 Plant and machine operators and assemblers	1.9	0.28	14.69
9 Elementary occupations	1.4	0.14	9.77
999 Occupation unknown	1.6	0.16	9.78
Age			
1 15-19 Years	0.8	0.04	5.00
2 20-29 Years	0.7	0.08	11.20
3 30-39 Years	0.6	0.10	16.24
4 40-49 Years	0.7	0.12	17.65
5 50-59 Years	0.6	0.11	18.04
6 60 Years and over	1.4	0.25	17.48
Geographical location			
NL1 Noord-Nederland	1.0	0.14	14.22
NL2 Oost-Nederland	0.7	0.10	14.11
NL3 West-Nederland	0.5	0.08	16.00
NL4 Zuid-Nederland	0.7	0.10	14.40
Highest level of education			
01 ISCED 0 and 1	1.3	0.13	9.89
02 ISCED 2	0.9	0.10	11.33
03 ISCED 3 and 4	0.5	0.07	14.21

04 ISCED 5B	2.2	0.44	20.42
05 ISCED 5A	0.5	0.11	20.68
06 ISCED 6	1.5	0.42	27.52
Size of the enterprise			
E1_9	0.9	0.11	12.84
E10_49	0.9	0.12	14.04
E50_249	0.9	0.13	15.55
E250_499	1.3	0.22	16.60
E500_999	1.1	0.18	16.16
E1000	0.5	0.07	15.44
Sex			
F Female	0.4	0.05	13.04
M Male	0.5	0.08	16.88
Full-time or part-time employees			
FT Full-time employees	0.3	0.04	16.32
PT Part-time employees	0.7	0.09	13.82

At this moment there are no figures on the Dutch Structure of Earnings Survey 2006 (LSO 2006) available. In the Dutch LSO 2002, table cells are suppressed (x confidential figure) when:

- table cells are based on 10 observations or less,
- table cells, based on 11-100 observations, have estimated relative margins of more than 35 percent,
- table cells, based on more than 100 observations, have estimated relative margins of more than 50 percent.

2.2. *Non-sampling errors*

2.2.1. Coverage errors

The 2006 SES of the Netherlands is not based on a single questionnaire but on a combination of three sources: the population register (PR 20006; in Dutch: Gemeentelijke Basisadministratie persoonsgegevens, GBA) the Labour Force Survey (LFS; in Dutch: Enquête Beroepsbevolking, EBB) and a new Register on Jobs and Wages (RJW). The RJW 2006 is based on, a combination of, the 'Register of persons insured under employee insurance schemes' (in Dutch: Polisadministratie) and the 'Tax register of earnings'.

This new register contains information about earnings and working hours of all individual employees, working or living in the Netherlands, as well as some characteristics of their jobs .

There is always a certain time lag between changes and the updating of the information in a register. The conclusion can be drawn that because of the way of updating (monthly) and the extra work that was done to overcome certain "shortcomings" of misclassification, under-coverage and over-coverage do not strongly influence the SES results.

Population 2006 SES of the Netherlands:

- jobs of employees, aged 15 years and over
- which have an employment contract in referenc month (December)
- and received remuneration during the reference month
- all size classes are covered, included enterprises with fewer than 10 employees (except enterprises without employees)
- and in the areas of economic activity defined by section C-O of NACE (Rev.1.1).

2.2.2. Measurement and processing errors

For the 2006 SES the following sources were used:

1. Register on Jobs and Wages (RJW 2006);
2. Population Register (PR 2006; in Dutch: Gemeentelijke Basisadministratie persoonsgegevens, GBA);
3. Labour Force Survey (LFS 2004, 2005 and 2006; in Dutch: Enquête beroepsbevolking, EBB).

Data of the new Register on Jobs and Wages (RJW) have formed the core for the SES. The RJW contains information about earnings and working hours of all individual employees as well as some characteristics of their jobs. In addition a number of variables (economic activity, geographical location, size of the enterprise) were taken from Statistics Netherlands' General Business Register (GBR; in Dutch: Algemeen Bedrijfsregister, ABR). For the GBR Statistics Netherlands (SN) receives monthly information from three registers, which are kept by the Chambers of Commerce and the Social Security Board. This information relates to:

- newly registered legal units;
- existing legal units and local units removed from registration;
- changes in address;
- changes in principle kind of activity of units;
- changes in persons employed by units.

To compensate for "shortcomings" in the administrative registers the GBR sends questionnaires to all units that are newly registered or for which the activity code has been changed by the registers. On the basis of this information the legal units can be turned into meaningful statistical units.

The Population Register (PR) contains demographic information on every inhabitant of the Netherlands. The PR is built from the municipal population registers, which are of outstanding quality nowadays. Municipalities have a major incentive to record all their inhabitants because the allocation of central government funds is mainly based on population size. Even though the PR seeks to optimally record every person in the population, it is by no means perfect (homeless people, illegal residents, people may emigrate and forget to notify the authorities, persons are registered at separate addresses but actually live together).

The Labour Force Survey (LFS) is a household sample survey. It is needed for information that is not available in registers. It contains variables of interest for the SES such as occupation and educational attainment levels. The LFS is a survey on private households, in which the survey population is restricted to persons aged 15 years and older. It is a continuous survey, meaning that sampling and

surveying of persons is spread throughout the year. The sample size is actually quite small; yearly some 90 thousand persons are sampled, which is approximately 0.7 percent of the total population. The consequence is that estimations for small subpopulations at a detailed level may be unreliable or even impossible. For this reason three LFS-surveys, 2004, 2005 and 2006, were joined to create more mass for the SES compilation process. In general the above mentioned LFS variables are relatively stable in time, so that it can be assumed that they represent the situation at reference date without much error.

The Population Register (PR) is used for:

- the variables age and sex;
- grossing up LFS (2004 + 2005 + 2006) to the PR-population December 2006;
- and micro-linkage: RJW-PR, LFS-PR and RJW(PR)-LFS(PR).

Most of the present administrative registers are provided with a unique linkage key. It is the so-called social security and fiscal number (SoFi-number or BSN-number; in Dutch: Burgerservicenummer), a personal identifier for every (registered) Dutch inhabitant and those abroad who receive an income from the Netherlands and have to pay tax on it to the Dutch fiscal authorities. Statistics Netherlands recodes the BSN-number for statistical processing into a so-called Record Identification Number (in accordance with regulations of the Dutch Data Protection Authority to protect the privacy of the citizens). A limited amount of BSN-numbers may be registered with incorrect values in the data files, in which case linkage with other files may fail. However, in general, the percentage of matches is close to one hundred percent.

For grossing up the SES data SN made use of data from the new Register on Jobs and Wages (RJW).

2.2.3. Non-response errors

The Register on Jobs and Wages (RJW) contains information about earnings and working hours of all individual employees, working or living in the Netherlands, as well as some characteristics of their jobs. The RJW is based on, a combination of, the 'Register of persons insured under employee insurance schemes' (in Dutch: Polisadministratie) and the 'Tax register of earnings'.

The Population Register (PR) contains demographic information on every inhabitant of the Netherlands. The PR is built from the municipal population registers. Municipalities have a major incentive to record all their inhabitants because the allocation of central government funds is mainly based on population size.

The Labour Force Survey (LFS) is a survey on private households, in which the survey population is restricted to persons aged 15 years and older. It is a continuous survey, meaning that sampling and surveying of persons is spread throughout the year.

In case of 2006 SES non-response errors is not an issue. The non-response is already taken to account at the sources. The LFS we use is corrected for non-response.

2.2.4. Model assumption errors

The SES data used only refer to employees working in December 2006. This implies that the earnings and working hours data of employees who left the enterprise in 2006 were not included in the SES data. All data relate to the year 2006. It was not necessary to make adjustments from fiscal year to calendar year. All economic activities (NACE Rev.1.1) are covered; except the sections, A, B, P and Q. All size classes are covered, except enterprises without employees.

3. Timeliness and punctuality

3.1. Punctuality

For compiling the 2006 SES figures, Statistics Netherlands used a methodology in which, by using existing sources, it was not necessary to conduct a separate survey.

- The Register of Jobs and Wages (RJW) is updated every month (with mutations).
- The Population Register (PR) is built from the municipal population registers.
- The Labour Force Survey (LFS) is a continuous survey, meaning that sampling and surveying of persons is spread throughout the year. Three LFS-surveys, 2004, 2005 and 2006, were joined to create more mass for the SES compilation process.

Up from April 2008 several sources were collected and processed. Because of the late availability of the major source RJW, a new main data source, the processing of SES data started later than expected.

The RJW data used for the SES Regulation refers to reference month December, while the other months of 2006 are used for composing annual figures. This work was time-consuming (many basic data had to undergo further treatments) and the processing of data lasted until June 2008. Due to the fact that, compared to the 2002 SES, a new major source is used, some unforeseen methodological problems arose which had to be solved.

In the period from July onward, the basic data were processed and a data set with the required SES variables (from RJW and the other sources, PR and LFS) was gradually built. For this purpose many data had to be linked. In August 2008 the data in the SES data set were provided with weights.

In September 2008 the plausibility checks, which were already started in July 2008, could be finalised.

Thereafter, the data tables for Eurostat were prepared, including confidentiality checks, and on 3 October 2008 the SES data were successfully sent to Eurostat (by Edamis Web Application):

- SES_EARA_A4 (table A- Reporting Units);
- SES_EARB_A4 (table B- Employees).

Annotations on selected variables:

- B23: for occupation unknown we used code 999.
- B422: 'Special payments for shift work' is a mandatory variable, but due to the impossibility of deriving it from the sources we used code 99999999.
- B41: 'Gross annual earnings', B421: 'Earnings related to overtime', B321: 'Number of overtime hours', and several others do not fully comply with the plausibility checks. These variables are derived from the new Register of Jobs and Wages, which also gives information on paid hours and wage payments. Statistics Netherlands judges the information from this source as reliable.

3.2. *Timeliness*

At this moment there are no figures on the Dutch Structure of Earnings Survey 2006 (LSO 2006) available.

4. **Accessibility and clarity**

4.1. *Accessibility*

At this moment there are no figures on the Dutch Structure of Earnings Survey 2006 (LSO 2006) available.

Usually results are accessible via StatLine, the electronic databank of SN (See: <http://statline.cbs.nl/StatWeb/publication/?VW=T&DM=SLNL&PA=71498NED&D1=a&D2=a&D3=4,9-22&D4=0&HD=090325-1229&HDR=T&STB=G1,G2,G3>).

All the information on this databank may be consulted, printed out and downloaded free of charge.

There were no results sent to reporting units.

4.2. *Clarity*

At this moment there is no description on the methodology and results of the 2006 SES and the Dutch Structure of Earnings Survey 2006 (LSO 2006). Usually a description on the methodology and results can be found in an article in the 'Sociaal-economische trends', a quarterly publication with socio-economic data of SN.

In 2005 an article 'Wages by occupation and level of education: Structure of Earnings Survey 2002' (in Dutch: 'Loon naar beroep en opleidingsniveau: het Loonstructuuronderzoek 2002') with main results was published in the: Sociaal-economische trends, 2e kwartaal 2005, page 39-51 (See: <http://www.cbs.nl/NR/rdonlyres/69E7EBEE-75C4-4FCF-9FE8-D59982DE2423/0/2005k2v4p039art.pdf>).

Apart from a press-announcement, which is common for all publications on the Internet site of SN, no specific actions were carried out to inform users about links to the data.

5. Comparability

5.1. *Geographical comparability*

Statistical units

The General Business Register of SN does not contain information regarding local units. The information about units does not refer to local units, but to enterprises (containing all the employees) at NUTS-1 level.

Populations

All economic activities (NACE Rev.1.1), except the sections A, B, P and Q, are included in the SES. All size classes are covered (except enterprises without employees).

Reference times

All variables refer to 2006, except for occupation and education.

The Labour Force Survey (LFS) is a household sample survey and it is needed for information that is not available in registers, such as occupation and educational attainment levels. The sample size is actually quite small; yearly some 90 thousand persons are sampled, which is approximately 0.7 percent of the total population. The consequence is that estimations for small subpopulations at a detailed level may be unreliable or even impossible. For this reason three LFS-surveys, 2004, 2005 and 2006, were joined to create more mass for the SES compilation process. In general the above mentioned LFS variables are relatively stable in time, so that it can be assumed that they represent the situation at reference date without much error.

Classifications

There are no differences between the national classifications and the Eurostat classifications.

5.2. *Comparability over time*

Methodology

In the 1995 SES the requisite data were compiled from **Survey** on Employment and Earnings (SEE 1995), Labour Force Survey (LFS 1994, 1995 and 1996) and the Insured Persons Register (1995). For the 2002 SES the data were compiled from **Survey** on Employment and Earnings (SEE 2002) and Labour Force Survey (LFS 2000, 2001 and 2002).

The 2006 SES of the Netherlands is based on a new **Register** on Jobs and Wages (RJW 2006) and Labour Force Survey (LFS 2004, 2005 and 2006). The RJW 2006 is based on (combination of) the 'Register of persons insured under employee insurance schemes' (in Dutch: Polisadministratie) and the 'Tax register of earnings'.

6. Coherence

A comparison between the results of 2006 SES and 2006 NA is faced with difficulties because of conceptual differences between both sources. As a consequence the NA figures also relate to employees who do not figure on the payroll of enterprises. Because of this, the number of employees (in sections C to O) was almost 3 percent higher in NA as compared to the SES.

Table 3. Comparison between 2006 SES and 2006 NA (National Accounts)

NACE	2006 SES, Structure of Earnings Survey				National Accounts	
	Observations	Grossing-up factor (B52), mean	Employees	Gross annual earnings in the referenece year (B41), mean	Employees	Wages and salaries
	x 1		x 1000	euro	x 1000	euro
Total	154709	47	7281	24283	7625	27187
A,B					129	17829
C	180	41	7	55524	8	62500
D	18185	45	826	30871	895	33408
E	437	55	24	40875	30	46667
F	7562	48	361	31107	387	32817
G	25485	47	1201	18720	1249	22738
H	5380	55	298	8790	279	13262
I	8626	50	434	28067	453	30464
J	6256	45	281	42827	284	47535
K	25638	56	1425	21636	1440	26736
L	11879	43	507	33826	516	32364
M	12493	38	476	27251	441	30159
N	26273	43	1131	19538	1183	21386
O	6315	49	310	20433	331	22356