Service public fédéral « Économie, PME, Classes moyennes et Énergie »
Direction générale « Statistique et Information économique »

Structure of earnings survey 2006

Quality Report

Selon le règlement (CE) n° 698/2006 de la Commission du 5 mai 2006

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1. Relevance

1.1. The most important variables

The results and data of the Structure of Earnings Survey (SES) are often used by the Belgian general public. Students, research centres, universities, trade unions, the media, private companies and public administration institutions can all be considered as important users of the SES.

One reason for this large interest by a wide range of users comes from the large survey sample. Because of those large numbers, the SES can give a correct image of the gross earnings by several independent variables. For example, the SES is, together with the Labour Force Survey, the only national source where earnings can be linked with important personal characteristics such as the level of education or the profession of the wage earner. The rather unique combination between individual features on the one hand and enterprise characteristics on the other hand can also explain the broad use of the SES.

Column number	Variable name	Number of times a variable was used
B42	Gross earnings in the reference month	101
A13	Economic activity	67
B23	Occupation in the reference month	44
B21	Sex	28
B43	Average gross hourly earnings in the reference month	25
B41	Gross annual earnings in the reference year	21
B25	Highest successfully completed level of education and training	19
A11	Region	17
B22	Age (in years)	16
B27	Full-time or part-time employee	16
A15	Collective pay agreement	13
B26	Length of service in enterprise (in years)	12
B421	Earnings related to overtime	11
B422	Special payments for shift work	10
B411	Annual bonuses and allowances not paid at each pay period	9
A16	Total number of employees in the local unit	7
B271	% share of a full-timer's normal hours	7
B32	Number of hours paid during the reference month	7
B321	Number of overtime hours paid in the reference month	7
B28	Type of employment contract	4
B33	Annual days of holiday leave	2

Tabel 1: Number of times SES variables were used in tailor-made tables

The above table gives an overview of the number of times a variable was used in tailor-made tables, which are made to cover ad-hoc demands. Specific demands for microdata are not included, as those demands normally contain almost every variable.

1.2. An overview of the most important users

In Belgium, the Structure of Earnings Survey is organised on a yearly basis. Therefore, this survey has a lot of structural users, who make use of the results every year. The next sections give an overview of the main users and their projects.

- Every year 'The Institute for the Equality of Women and Men' publishes a report concerning the gender pay gap in Belgium. Since the beginning of this report, the SES is used as the basis source to deliver the necessary figures. The advantage of the SES is that this survey makes it possible to calculate several breakdowns. In Belgium, this report has an important reporting and policy recommendation function.

- The Federal Public Service Finance calculates every year the average tax wedges. To make international comparisons possible, a representative wage is used. This international concept corresponds with the average wage of full-time wage earners working in the NACE-sections C-K. So, the FPS Finance calculates the Belgian average wage on the basis of the SES. This survey has another important advantage. The data make it possible to take into account the impact of structural changes on the labour market, like the shift to part time work.

- The Department of Applied Economics of the Free University of Brussels conducts a research on the impact of wage dispersion on the performance of enterprises. For this research, the SES variables are linked with some variables from the Structural Business Survey, such as turn-over or profit.

- The Federal Planning Bureau manages a labour market data base that was created within the framework of the European EU KLEMS productivity measurement project (funded by the European Commission) and serves as the backbone for a Social Accounting Matrix compatible with Belgian National Accounts aggregates. Although this data base is primarily grounded on administrative data, some information, like the earnings by level of education or profession, is only available in some surveys, like the SES.

- De 'Conseil Central de l'Economie', an advisory body for the business community, makes often use of the SES. The survey is especially used to support their reports with the necessary figures. The wage and the labour time data are also used as an input for the social negotiations.

1.3. A description of the gaps and less relevant parts

Although almost all demands can be treated with the existing information and variables, there is still a gap in the survey. In Belgium, there is a lot of interest in the total length of service of a wage earner, which goes further than the current

information, which is restricted to the years of service within the enterprise. Information about the total length of service is an important factor for the wage level, because relevant experience outside the enterprise is often taken into account during the wage negotiations.

The variable A14, economic and financial control, is almost never used in analyses and can therefore be seen as the less relevant part of the survey.

2. Accuracy

2.1. Sampling errors

2.1.1. Sampling technique

The survey was conducted on the basis of a two-stage sampling approach. In the first stage, a stratified random sample of local units is drawn. The stratification criteria were the economic activity, the number of employees and the region of the local unit. The questionnaire, the explanation and a list of local units wherefore the survey must be filled in, were sent towards the principal seats of the selected local units. We have chosen not to send the questionnaire towards every local unit in the sample, because most of the times a central pay-roll administration is responsible for the payment of all the wages. The change of a mistake by the enterprise, for example by taking the wrong local unit, is very limited, because in Belgium every local unit has his own unique administrative number. The business register was used to define the sampling frame. The universe contains of 65.471 local units. Finally 11.757 local units were included in the sample survey. The chance of selection largely depends on the number of employees an employer has.

At the second stage, the local unit must select a number of employees, following the instructions in the explanation. Local units with less than 300 employees must select a proportion of their total number of wage earners:

Total number of employees	Proportion
Less than 20	100 %
20 – 49	50 %
50 – 99	25 %
100 – 199	14,3 %
200 – 299	10 %

Table 2: Number of wage earners that local units with less than 300 employees must select

Local units with at least 300 employees must select a fixed absolute number of wage earners:

Total number of employees	Number of wage earners to be selected
300 – 349	30
350 – 449	35
450 – 549	40
550 – 699	45
700 – 899	50
900 – 1099	55
1100 – 1299	60
1300 – 1599	65
1600 – 1999	75
2000 – 2999	85
3000 – 3999	100
4000 – 4999	115

5000 - 6499	130
6500 – 7999	145
8000 – 9499	160
9500 – 11999	180
12000 or more	200

Table 3 : Number of wage earners that local units with at least 300 employees must select

To ensure that the sample is drawn on a coincidental basis, every local unit receives a letter of the alphabet. The local unit must start its selection of employees with the wage earner whose surname begins with that letter. In those cases where the number of wage earners isn't reached at the letter 'Z', the selection continues with the letter 'A'. There are no stratification criteria used in this second stage, because we want to keep this step as easy as possible for the respondents.

2.1.2. Different sources of the SES

In Belgium, the emphasis is clearly changing towards an intensive use of administrative sources wherever this is possible. For this survey two important administrative sources were used:
- The national register of enterprises (DBRIS)
- The earnings and working hours database of the National Office for Social Security (ONSS).

The questionnaire was only used for those variables where no information was available in the administrative part (NSI). A fourth column is adjusted, because often the demanded data aren't available directly, but they can be obtained by the calculation of several other variables.

The table below gives an overview of the different available Eurostat variables and the way we obtained them:

Variable Eurostat	DBRIS	ONSS	NSI	Calculation
Region	X			
Size of the enterprise to which the local unit belongs	X			
Economic activity	X			
Economic and financial control			X	
Collective pay agreement		X	X	X
Total number of employees in the local unit			X	
Grossing-up factor for local units				X
Sex			X	X
Age			X	X
Occupation			X	
Highest successfully completed level of education and training			X	
Length of service in the enterprise			X	X
Full-time or part-time employee		X		
% share of a full-timer's normal		X		

hours			
Type of employment contract		X	
Number of weeks to which the gross annual earnings relate	X		
Number of hours paid during the reference month		X	X
Number of overtime hours paid in the reference month		X	
Annual days of holiday leave		X	
Gross annual earnings in the reference year	X		X
Annual bonuses and allowances not paid every pay period	X		X
Gross earnings in the reference month		X	X
Earnings related to overtime		X	
Special payments for shift work		X	
Average gross hourly earnings in the reference month		X	X
Grossing-up factor for employees			X

Table 4: Overview of the source of each variable

2.1.3. The coefficient of variation

In general the coefficients of variation are rather low, although there are some exceptions. Especially in the breakdowns with a limited number of wage earners, it is almost impossible to organise a survey where these groups are measured correctly without being exhaustive. This problem appears for the part-time employed men, in the NACE-sections C and E, in the ISCO 1 and finally at the age groups under 20 and 60 years and over.

The Labour Force Survey counted in the fourth quarter of 2006 3.235.007 wage earners in the NACE-sections C-O (-L). The number of part-time men was limited to 138.989, or 4.30% of this total. According to the same survey, only 7.946 wage earners (0.25%) worked in the NACE-section C, while the section E employed 28.541 wage earners (0.88 %). Also the number of wage earners younger than 20 or at least 60 years old was rather limited, with respectively 1.36% and 1.33% of the total number of wage earners.

The whole population			
	Monthly earnings	Variance	Coefficient of variation
Whole population	2.437,52	419,23	0,84%

Full-time and part-time employees			
	Monthly earnings	Variance	Coefficient of variation
Full-time men	2.840,08	362,09	0,67%
Full-time women	2.498,97	389,74	0,79%
Part-time men	1.739,17	4.073,96	3,67%
Part-time women	1.572,98	649,35	1,62%

NACE-section			
	Monthly earnings	Variance	Coefficient of variation
C	2.604,76	2.823,55	2,04%
D	2.692,63	127,89	0,42%
E	3.318,70	3.810,32	1,86%
F	2.382,41	1.399,05	1,57%
G	2.251,97	332,73	0,81%
H	1.514,94	609,77	1,63%
I	2.495,13	174,88	0,53%
J	3.294,89	1.537,36	1,19%
K	2.615,62	873,59	1,13%
M	2.310,83	442,20	0,91%
N	2.040,35	192,50	0,68%
O	2.287,38	1.676,42	1,79%

Occupation			
	Monthly earnings	Variance	Coefficient of variation
1	5.219,14	12.474,57	2,14%
2	3.183,54	934,03	0,96%
3	2.614,31	603,91	0,94%
4	2.337,44	165,27	0,55%
5	1.704,18	384,08	1,15%
7	2.211,16	153,33	0,56%
8	2.313,07	144,67	0,52%
9	1.707,64	280,06	0,98%

Age band			
	Monthly earnings	Variance	Coefficient of variation
Under 20	1.144,47	5.499,95	6,48%
20-29	1.967,30	89,17	0,48%
30-39	2.413,01	75,46	0,36%
40-49	2.604,27	190,51	0,53%
50-59	2.734,06	1866,08	1,58%
60 and over	2.784,61	38.758,56	7,07%

NUTS			
	Monthly earnings	Variance	Coefficient of variation
BE1	2.786,22	888,79	1,07%
BE2	2.396,47	331,72	0,76%
BE3	2.297,96	399,69	0,87%

Size band of the enterprise			
	Monthly earnings	Variance	Coefficient of variation
E10_49	2.149,88	391,20	0,92%
E50_249	2.393,69	394,72	0,83%
E250_499	2.574,87	759,06	1,07%
E500_999	2.594,69	814,62	1,10%
E1000	2.557,95	268,01	0,64%

The whole population			
	Hourly earnings	Variance	Coefficient of variation
Whole population	16,88	0,0187	0,81%

Full-time and part-time employees			
	Hourly earnings	Variance	Coefficient of variation
Full-time men	17,12	0,0124	0,65%
Full-time women	15,88	0,0153	0,78%
Part-time men	19,56	0,5097	3,65%
Part-time women	16,51	0,0689	1,59%

NACE-section			
	Hourly earnings	Variance	Coefficient of variation
C	15,74	0,1031	2,04%
D	16,34	0,0039	0,38%
E	20,21	0,1368	1,83%
F	14,08	0,0476	1,55%
G	14,73	0,0142	0,81%
H	11,30	0,0323	1,59%
I	15,51	0,0058	0,49%
J	21,75	0,0626	1,15%
K	16,80	0,0354	1,12%
M	27,31	0,0604	0,90%
N	14,88	0,0099	0,67%
O	15,11	0,0715	1,77%

Occupation			
	Hourly earnings	Variance	Coefficient of variation
1	32,53	0,4983	2,17%
2	26,33	0,0600	0,93%
3	17,39	0,0256	0,92%
4	15,26	0,0068	0,54%
5	12,63	0,0200	1,12%
7	13,51	0,0049	0,52%
8	14,17	0,0048	0,49%
9	12,00	0,0138	0,98%

Age band			
	Hourly earnings	Variance	Coefficient of variation
Under 20	9,79	0,4264	6,67%
20-29	13,43	0,0037	0,45%
30-39	16,26	0,0032	0,35%
40-49	17,92	0,0080	0,50%
50-59	19,77	0,0963	1,57%
60 and over	20,72	1,9790	6,79%

NUTS			
	Hourly earnings	Variance	Coefficient of variation
BE1	18,91	0,0417	1,08%
BE2	16,48	0,0145	0,73%
BE3	16,52	0,0193	0,84%

Size band of the enterprise			
	Hourly earnings	Variance	Coefficient of variation
E10_49	14,50	0,0174	0,91%
E50_249	17,29	0,0206	0,83%
E250_499	16,32	0,0288	1,04%
E500_999	16,69	0,0325	1,08%
E1000	18,23	0,0128	0,62%

Table 5: Coefficients of variation

2.2. Non-sampling errors

2.2.1. Coverage errors

No differences between the reference and the study population can be mentioned. The universe and the sample survey were drawn up on the basis of the most recent business register available at that time. This register gives an overview of all enterprises and local units having wage earners in service on 30 September 2006. Under- or over-coverage is therefore possible but with a very limited impact, as only those local units who started or ceased their activities during the month October can be affected. For the under-coverage, no official numbers are available. The number of selected local units who didn't exist anymore at the moment of the survey or where

the number of employees was reduced to less than 10 wage earners, counts to 135 local units, or 1.1% of the sample survey.

Concerning the size of the enterprise, Belgium has chosen to exclude the small enterprises with less than ten employees. We have also excluded the NACE section L in our sample. This means that we only deliver data about those local units that are covered by the Regulation.

2.2.2. Measurement and processing errors

No such errors to be mentioned here.

2.2.3. Non-respons errors

2.2.3.1. Unit response rate

The unit response rate for the whole survey amounts to 83.11%. Large differences between NACE-sections can be noticed. Thanks to a very good follow-up of the respondents, the unit response rate amounts to more than 80% for 41 of the 52 NACE-sections. The table below gives an overview of the unit response rate for each NACE-section included in the survey.

Codes of main economic activity of the local unit	Unit response rate
R10	100.00%
R14	85.71%
R15	85.15%
R16	86.66%
R17	86.89%
R18	86.48%
R19	94.11%
R20	82.55%
R21	91.66%
R22	86.84%
R23	86.95%
R24	89.73%
R25	84.61%
R26	85.14%
R27	81.37%
R28	86.20%
R29	84.24%
R30	100.00%
R31	86.00%
R32	69.64%
R33	80.00%
R34	78.94%
R35	82.69%
R36	81.91%

R37	88.23%
R40	88.75%
R41	93.75%
R45	81.63%
R50	84.16%
R50	84.16%
R51	86.06%
R52	84.46%
R55	77.87%
R60	82.80%
R61	66.66%
R62	64.51%
R63	70.42%
R64	83.54%
R65	92.17%
R66	88.88%
R67	68.11%
R70	87.83%
R71	88.15%
R72	81.91%
R73	77.77%
R74	80.94%
R75	100.00%
R80	86.24%
R85	83.31%
R90	92.30%
R91	79.16%
R92	70.02%
R93	65.74%

Table 6: Unit response rate in each NACE section

2.2.3.2. Item imputation rate

Except for four variables, the item response rate always amounts to almost 100%. This means that for a large majority of variables, the item imputation rate equals to zero.

As it was the case with the SES 2002, the variable "highest successfully level of education and training" has the highest item imputation rate with 6.13%. This information is not available in the wage administration services of a lot of enterprises, which explains why this variable is often missing. Moreover, employers often don't have a clear view of the level of education of their wage earners. This explains why the number of missing cases is higher for this variable than for the occupation, although also this information is often not available in the wage administration.

The three other variables where an imputation took place, even after intensive contacts with the respondents, were:
- Length of service in the enterprise: an item imputation rate of 4.29%.

- Economic and financial control: an item imputation rate of 0.74% of the total number of local units.
- Occupation in the reference month: an item imputation rate of 0.12%.

2.2.3.3. Overall imputation rate

As an imputation took place for only four variables, the overall imputation rate is rather low. For the A record, so the record at local unit level, this rate amounts to 0.15%. For the B record, an overall imputation rate of 0.59% is obtained.

2.2.4. Model assumption errors

No such errors can be reported

3. Punctuality and timeliness

3.1. Punctuality

The fieldwork started with the sending of the questionnaires on 15 January 2007. At first sight the respondents / enterprises get time until the end of February to fill in the questionnaire. The respondents who didn't answer within this deadline received a first reminder in early March and a second one in April.

In May and June, intensive contacts took place. These contacts aimed at convincing the respondents to participate and increasing the unit response rate. For the most important local units, the phone contacts were replaced by a visit. An employee of Statistics Belgium could then help the respondent filling in the questionnaire when this appeared to be necessary.

The fieldwork was closed in late July 2007, seven months after the start. Normally, this step could have been finished two months earlier. Unfortunately, the introduction of the three new NACE sections heavily delayed the fieldwork because their participation rate was initially rather low. The section education was especially reluctant to participate and required a lot of efforts to reach an acceptable response rate.

The process of data processing started as soon as the questionnaires were sent to the respondents. For the overall quality of the data, we attach great interest to a fast control of the received data. This procedure makes it possible to contact the respondent within an acceptable time span when errors or missing items are found in the data.

Besides the survey data, some administrative sources have been used to calculate the Eurostat variables. Even if these sources have several advantages, like the correctness and the completeness of the data, they also have an important disadvantage. Some of the administrative sources were not received before March 2008. This is the reason why it took until the end of May 2008 to completely finish the data processing.

The final results of the SES 2006 were published in June 2008. The first provisional results were already released earlier, namely in April 2008.

3.2. Timeliness

The two records with the completely controlled and internally approved data were sent, together with the metadata, to Eurostat on 24 June 2008. Therefore the data were delivered within the deadline provided by the Regulation.

4. Accessibility and clarity

This section gives a first overview of the situation on 15 Mars 2008. Making analyses is a long work. This makes that at the moment Statistics Belgium only released a press communiqué. Nevertheless several studies are forthcoming and will be published in the next weeks and months. A more extended overview of the references shall be transmitted to Eurostat later on, as provided by the Regulation Nr 698/2006.

4.1. Accessibility

Because in Belgium the SES is organised on a yearly basis, this survey is well-known by the general public. Nevertheless, several channels are used to disseminate the SES results.

All the respondents receive, together with the questionnaire, the main results of the previous survey. This document includes a reference towards the website where they can find additional tables and studies based on the SES. Finally, this document also indicates where people can ask for tailor-made tables.

Moreover, a press release is published every year (the press release for the SES 2006 data can be found at http://www.statbel.fgov.be/press/pr129_fr.pdf). In this communiqué the main results are explained and illustrated. This press release was broadly covered by the Belgian newspapers and news agencies. After three weeks, more than 7.500 persons had already read the press release on our website.

The website (http://www.statbel.fgov.be/ses → section 'Results') contains the most demanded aggregated tables. Information about the average earnings by region, sex, age, level of education, profession, length of service within the enterprise and economic activity can be consulted here. In 2008, this page was viewed by around 18.000 unique visitors.

For those users who need more detailed and unique data, Statistics Belgium offers two possibilities. On the one hand, Statistics Belgium can produce aggregated tables according to the preferences of the users. On a yearly basis, our service receives about 250 demands for such tailor-made tables. On the other hand, we also give researchers the possibility to use the anonymised individual data for their research projects. The number of demands for these microdata is limited to a few projects every year.

4.2. Clarity

A document on the main methodological aspects is to be found on our website. Nevertheless, there is still room for improvements, because the topics treated and explained in the existing document could be enlarged. For that reason, an improvement in the documents concerning the metadata and the methodology is foreseen for 2009.

5. Comparability

5.1. Geographical comparability

The comparability with all the international concepts is ensured.

In Belgium, for the education professionals, there is a huge difference between the contractual labour time and the effectively performed labour time. These professionals work several non-paid hours per week preparing the lessons and correcting the exams of the students. Depending on whether other countries have a similar or different legislation, the number of paid hours, and therefore also the hourly earnings, could be different from the data of other member states.

5.2. Comparability over time

There are two main differences between the SES 2002 and the SES 2006. These differences are the result of strong improvements in the administrative sources which are used.

1) In 2002, the main economic activity of the local unit was unknown. For that survey we had worked with the assumption that the economic activity of the local unit was exactly the same as the activity of the enterprise to which it belongs. For the SES 2006, this problem was solved, so one enterprise could have local units with different NACE sections.

2) In 2002, the definition of a local unit didn't correspond with the concept used by Eurostat. According to the Belgium definition, a company could never have more than one local unit with the same NACE section in one municipality. This meant that in 2002, a company must count up the wage earners of all his local units in every municipality. In the meantime, the Belgian definition of a local unit was adapted to the European rules. In the SES 2006, it is therefore possible that one enterprise has several local units with the same activity in the same municipality.

6. Coherence

In Belgium, the national accounts data concerning 'Wages and salaries' are confidential. Therefore this information isn't published here, although these data are available.