

Analysis on proxy interviews in the Swedish LFS

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Abstract

Data collection in the Swedish LFS is carried out by computer-assisted-telephone interviews. The interview should be held with the person that was selected in the sample but sometimes a proxy interview is done where another person answers on behalf of the selected person. The ambition is to keep the proxy interviews at a level of 2-3 percent in the Swedish LFS. The percentage of proxy interviews in 2018 was 2.8 percent. According to the most recent figures available, which refer to 2017, the average among the European countries was 33.0 percent proxy interviews. As seen by these figures there's a big difference between the number of proxy interviews carried out in Sweden and the other European countries.

In order to gain more information on proxy interviews in the Swedish LFS, different analysis can be carried out.

In a first step the proxy interviews are described according to different background variables to find out if proxy interviews are more common in specific groups, for example in the lower age groups.

The second step is to see if the proxy interviews have an effect on the estimates. In this analysis, estimates for some selected variables are compared with corresponding estimates that's been computed by excluding proxy interviews. A special focus in this analysis is on estimates in groups where proxy interviews are more common.

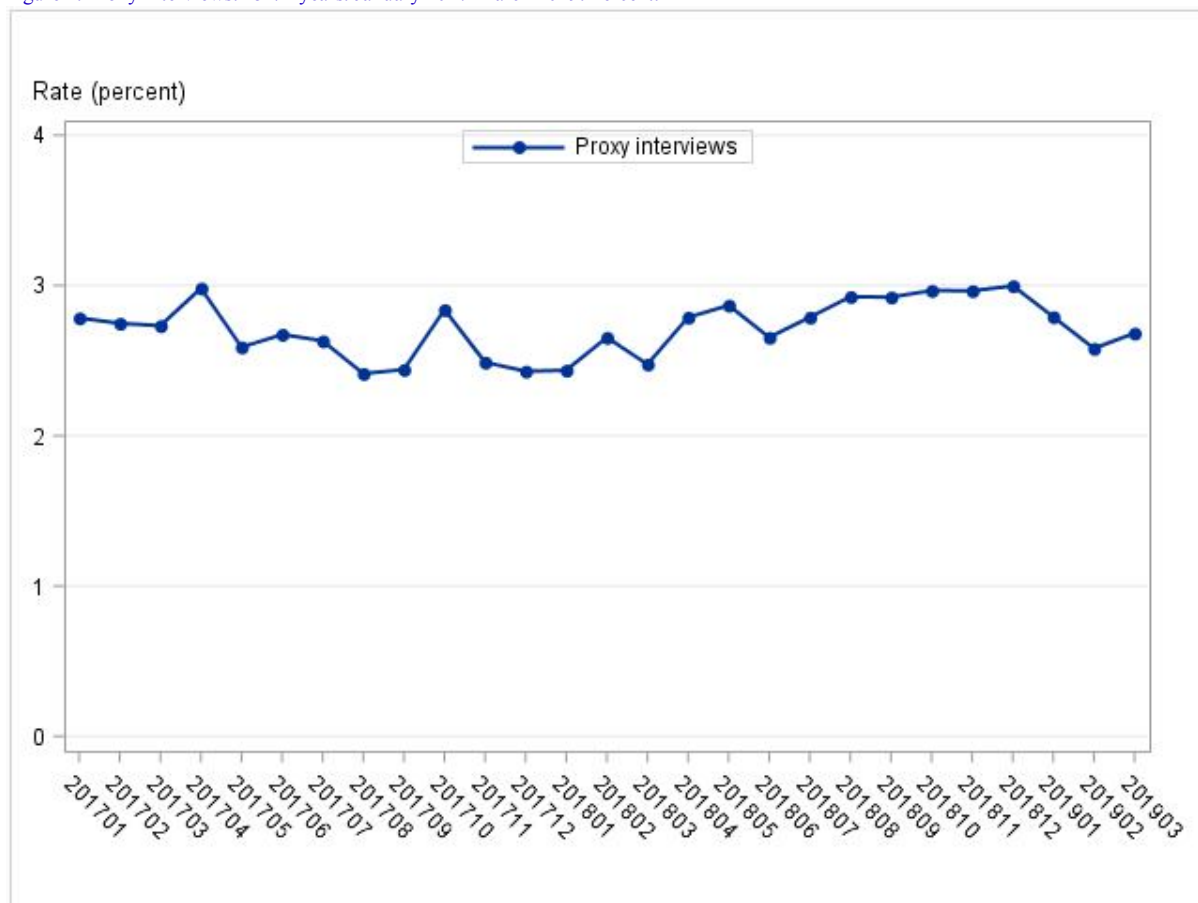
Results from the analysis may change the way that proxy interviews are used in the Swedish LFS.

Background

The Swedish LFS is a panel survey with rotating sample based on individuals where each sample individual participate once per quarter for a total of eight times. This means that 7/8 of the sample is repeated at a three month interval and 1/8 of the sample is replaced with new sample individuals. The data is collected by computer-assisted telephone interviews, this interview should be held with the person that was selected in the sample. However, sometimes a proxy interview is conducted where another person answers on behalf of the selected person. A proxy interview should only be conducted in some special cases with the ambition to keep the proxy interviews on a low level at around 2-3 percent.

Figure 1 shows the proxy interviews between January 2017 and March 2019 as a percentage of the total numbers of interviews conducted. As seen in this figure the proxy interviews are around 2.5 and 3 percent during this period.

Figure 1. Proxy interviews. 15-74 years. January 2017-March 2019. Percent.



Some questions about these proxy interviews have been raised concerning the effect that they may have on the quality of the statistics, this has led to the work presented in this paper. The goal for this work was to wider the knowledge and gain more information on proxy interviews in the Swedish LFS.

Descriptive analysis

Proxy interviews by background variables

In this section, the focus is on the existence of proxy interviews in different groups by background variables. The background variables that has been chosen in this analysis are sex, age, born in Sweden/foreign born and level of education.

The proxy interviews in different groups are shown in Table 1, the table also shows the actual response rate and the response rate that is obtained when proxy interviews are excluded. This table shows that for year 2018 the level of proxy interviews was 2.8 percent and that there was no difference between men and women. As seen in the table, there is a big difference between the age group 15-19 years and the other age groups. In this age group the proxy interviews are 19.8 percent and for the other age groups the proxy interviews are between 1.2 and 3.0 percent. Proxy interviews for born in Sweden are 2.4 percent and for foreign born it is 4.5 percent. Primary and lower secondary education has the highest level of proxy interviews, 11.2 percent. Proxy interviews in the other groups of level of education are 1.5 and 0.7 percent. Since most of the persons aged 15-19 years has a low education, it is quite possible that there is a dependence between this group and the group consisting of primary and lower secondary education.

Table 1. Response rate and proxy interviews. 15-74 years. Year 2018. Percent.

	Response rate	Response rate without proxy interviews	Proxy interviews
Total 15-74	52.8	51.4	2.8
Men 15-74	52.5	51.0	2.8
Women 15-74	53.2	51.7	2.8
15-19	49.7	39.8	19.8
20-24	42.0	40.7	3.0
25-34	45.5	44.8	1.5
35-44	53.9	53.2	1.3
45-54	54.7	54.0	1.2
55-64	57.9	57.1	1.4
65-74	70.9	69.2	2.4
Born in Sweden 15-74	54.9	53.6	2.4
Foreign born 15-74	45.0	43.0	4.5
Primary and lower secondary education 15-74	78.0	69.3	11.2
Upper secondary education 15-74	79.1	77.9	1.5
Post secondary education 15-74	87.9	87.3	0.7

Comparison of estimates

To analyze if the proxy interviews have an effect on the estimates, a comparison of estimates is carried out in this section. Here the estimates based on the whole sample are compared with the estimates based on the whole sample without proxy interviews.

The analysis includes some selected variables; employed, unemployed, in the labour force, permanent employees, temporary employees and students. The total population aged 15-74 years is analyzed and according to the previous section, where it was seen that proxy interviews are more common in the groups 15-19 years and primary and lower secondary education these two groups are also analyzed.

The comparison, here called relative difference, is made according to

$$\text{Relative difference} = 100 * (\hat{\theta}_{yw} - \hat{\theta}_{yp}) / \hat{\theta}_{yw}$$

where

$\hat{\theta}_{yw}$ is the estimator for θ_y based on the whole sample according to variable y .

$\hat{\theta}_{yp}$ is the estimator for θ_y based on a part of the sample, i.e. the whole sample without proxy interviews, according to variable y .

Figure 2 shows the relative difference for the total population aged 15-74 years. For all analyzed variables it is more common that the estimate based on the whole sample is lower than the estimate where proxy interviews are excluded. Differences smaller than one percent are obtained for permanent employees (around -0.3 percent), employed (around -0.6 percent), in the labour force (around -0.7 percent) and students (around -0.7 percent). For unemployed the difference is around -2.6 percent and for temporary employees the difference is around -2.2 percent. As seen in Figure 2 the relative difference seems to be relatively stable over time.

Figure 2. Comparison of estimates. 15-74 years. January 2017-March 2019. Percent.

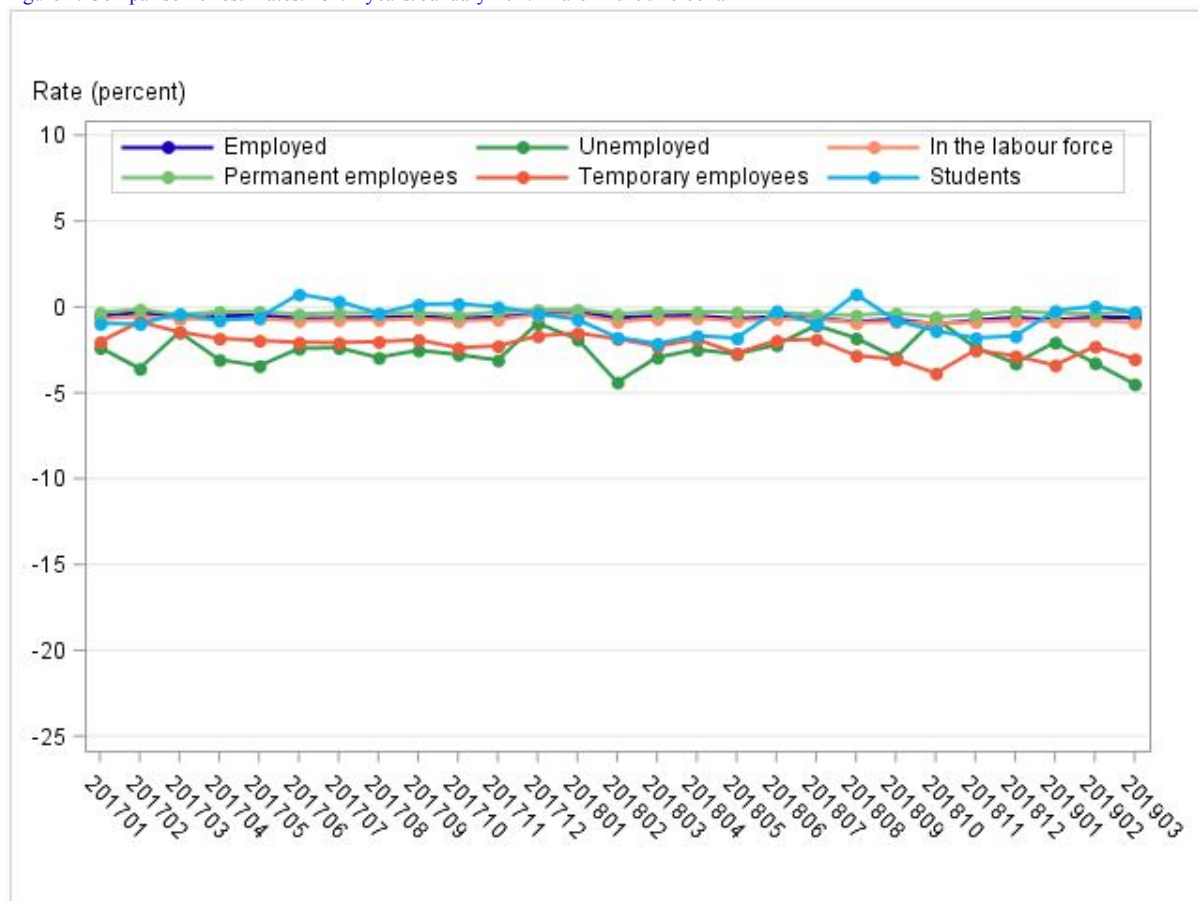
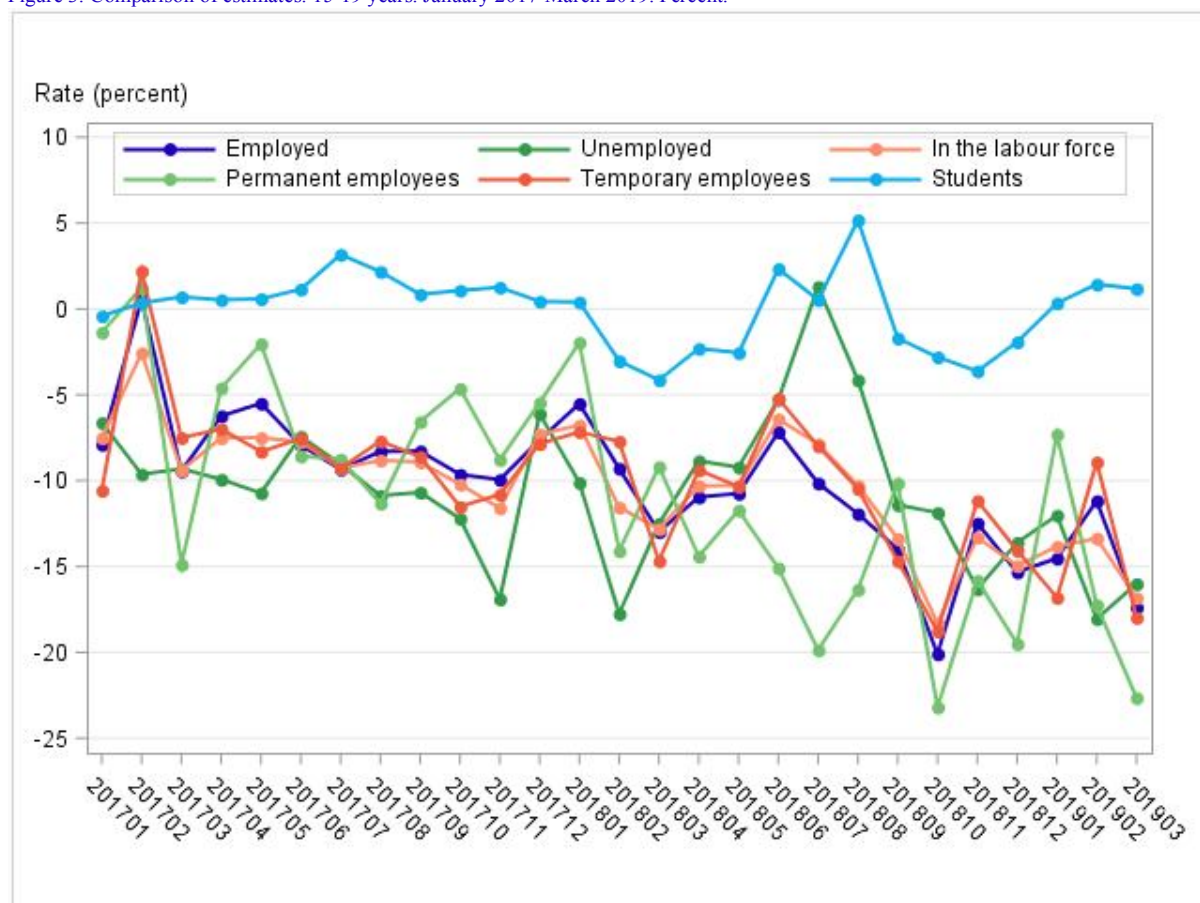


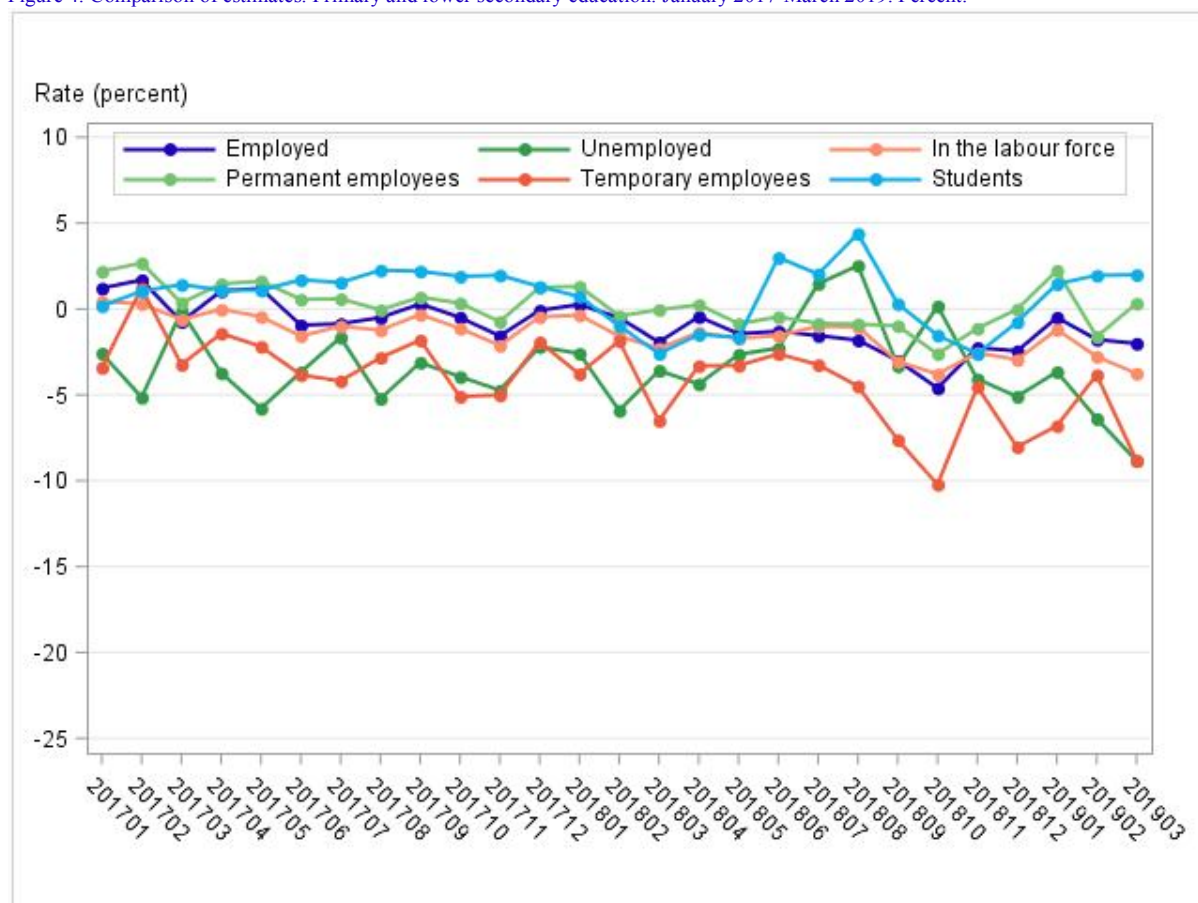
Figure 3 shows the relative difference for those aged 15-19 years. For this age group the relative difference for students is around 0 percent, even though there is a few exceptions foremost during year 2018. For the other variables, there seems to be a trend of a growing difference between the estimates. For employed the difference in January 2017 was -7.9 percent and in March 2019 it was -17.4 percent. For unemployed the difference has grown from -6.6 percent in January 2017 to -16.0 percent in March 2019. The difference for in the labour force was -7.5 percent in January 2017 and -16.8 percent in March 2019. For permanent employees the difference in January 2017 was -1.4 percent and has grown to -22.7 percent in March 2019. In January 2017 the difference for temporary employees was -10.6 percent and in March 2019 the corresponding difference was -18.0 percent.

Figure 3. Comparison of estimates. 15-19 years. January 2017-March 2019. Percent.



The relative difference for those with primary and lower secondary education is presented in Figure 4. For permanent employees the difference is around 0.2 percent, for students the difference is around 0.8 percent, for employed the difference is around -0.9 percent and for in the labour force the difference is around -1.4 percent. For unemployed and temporary employees there is a slight trend implying bigger differences. The difference in January 2017 was -2.6 percent and in March 2019 it was -8.8 percent for unemployed. For temporary employees the difference was -3.4 percent in January 2017 and -8.8 percent in March 2019.

Figure 4. Comparison of estimates. Primary and lower secondary education. January 2017-March 2019. Percent.



Summary

Between January 2017 and March 2019 the proxy interviews in the Swedish LFS were stable around 2.5 and 3 percent. Looking at proxy interviews in different groups it is clear that the groups 15-19 years and primary and lower secondary education has the highest level of proxy interviews. The proxy interviews for these groups are 19.8 and 11.2 percent respectively.

To get a deeper understanding of the proxy interviews possible effect on the estimates, estimates based on the whole sample are compared with estimates based on the whole sample without proxy interviews for selected variables; employed, unemployed, in the labour force, permanent employees, temporary employees and students. The analysis includes the period January 2017 to March 2019.

For the total population aged 15-74 years the relative difference seems to be relatively stable over time for the analyzed variables. The biggest differences are obtained for unemployment (around -2.6 percent) and temporary employees (around -2.2 percent).

Looking at the two groups with the highest levels of proxy interviews, the biggest differences are obtained for the age group 15-19 years. For this age group the relative difference has grown for all variables except students. The relative difference has grown 7.4 percentage points for temporary employees, 9.3 percentage points for in the labour force, 9.4 percentage points for unemployed, 9.5 percentage points for employed and 21.3 percentage points for permanent employees. For all these variables where the difference has grown, the estimate based on the whole sample is smaller than the corresponding estimate based on the whole sample without proxy interviews.