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Economic Commission for Europe**Conference of European Statisticians****UNECE-Eurostat Expert Group Meeting on Censuses Using Registers**

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Session 1: Experiences with the use of registers in the censuses**Use of administrative registers in census 2011. Estonian experience****Note by Statistics Estonia¹**

1. The methodology of the census 2011 in Estonia was a combination of using administrative registers, self-enumeration by internet and face-to-face interviews. In general, this methodology justified our hopes, so that about 65% of population enumerated themselves using internet and in general, the quality of the data was high. But this method also caused some undercoverage: if a people marked by internet a wrong address, then the enumerator did not visit this address and the people, living there, were not found (if they were not enumerated by internet). The estimated undercoverage caused by wrong addresses marked by internet, might be 0,5—1%.

2. Administrative registers were used on different steps of the census:

- a) Population register and buildings' register were used in preparation of working lists for enumerators;
- b) Population register and register of census data from 2000 were used to pre-fill the census questionnaires;
- c) The data about current studying were taken from the information basis of education;
- d) The registers listed, but also some other sources will be used for imputation missing values from the census data-base.

3. It is well-known fact that nowadays due high mobility of the population the problem of undercoverage of different surveys, including the censuses is rather serious. The

¹ Prepared by Ene Margit Tiit.

situation is more complicated when the combined methodology is used. Hence it is necessary to assess the coverage rate, using some exterior data resources. From this fact follows the second task where the registers will be used. It is estimation of the amount of non-enumerated people, calculation of population size and the number of emigrants between two censuses and also estimating the coverage rate of the census.

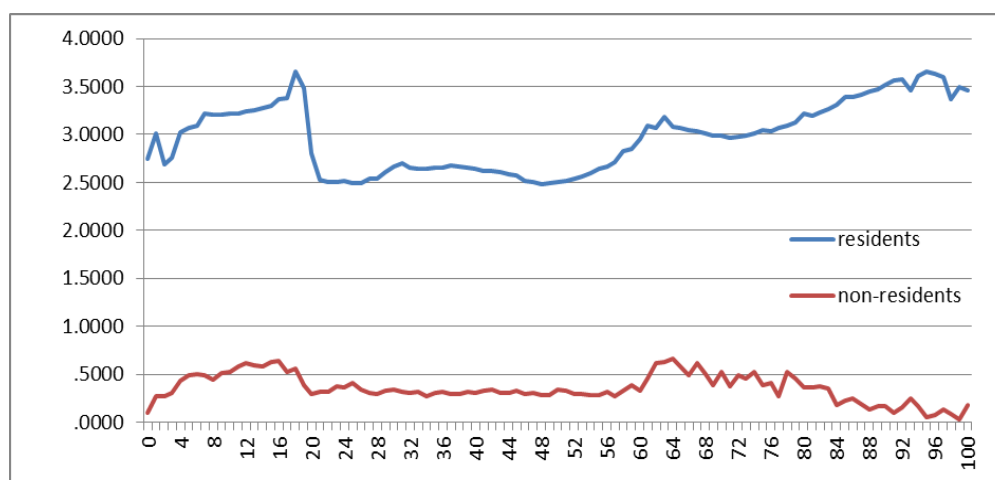
4. With this aim we will use about 10 different registers that form more or less unified system in Estonia where all persons are identified using ID-codes.

5. The population register that is the central register and has been created about 20 years ago, contains about 4% more persons than the number of persons enumerated by census. Some of these people do not live in Estonia any more, as they are illegally (without registration) emigrated. Another part of these people live still in Estonia, but they were by different reasons not enumerated.

6. For each of these persons (their number is about 50 000) it is necessary to make a decision – are they residents of Estonia or not. We elaborated an algorithm for estimating the probability of being resident for all people, not enumerated, but belonging to the list of Estonian population by Estonian Population Register.

7. For that sake we used administrative registers. We assumed that people living in Estonia, are active in the sense of some register – they get salary (and pay taxes), they study, they have health insurance, they get pension or some social support etc. When we studied the coverage of the population by registers, we ascertained that in average each resident of Estonia has some record during a year in average in three registers. In the opposite, the non-residents have records in much less registers, see Figure 1.

Figure 1. The number of administrative registers, where residents of Estonia/ non-residents of different age have active records during the year 2011



8. Using this algorithm we will be able to estimate the status of all non-enumerated people belonging to Population register. As the number of useable registers is quite large, we can choose such algorithm that minimizes the errors, following the condition that inclusion and exclusion errors are balanced.

9. As a result, we will be capable to assess the number of non-enumerated people, also the real population size and number of emigrated people. Also we can estimate the coverage rate of census 2011 in Estonia.

10. The work, done by analysing the quality of registers and their coverage will be helpful for future tasks, as well.