COMBINED CENSUS METHODOLOGY IN 2011 CENSUS IN ESTONIA

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CHOICE OF METHODOLOGY

Preparatory period

■ Preparations started as early as 2006.

■ First question: can we skip fieldwork and organise a solely register-based census?

■ Estonian state registers were good but did not cover all the information required: no data on occupations, educational level of elderly people etc.

■ The Census Committee of the Government of the Republic approved the **combined methodology** as the method to be used in the 2010 census round.

Combined methodology. Using registers

Several registers were used in different census stages.

- Information on current learning was taken from a register.
- Various data (citizenship, official family status etc.) were taken from registers and prefilled, respondents had to check them.
- Registers were also used for:
    - preparing enumeration lists
    - filling random blanks in questionnaires
    - assessing coverage

Combined methodology. Data-collection forms: CAWI and CAPI

- Two new technical solutions were introduced:
    - self-completion of questionnaires on the internet,
    - entry of answers directly in laptop computers during census interviews.
- All data were automatically sent to the census database – no data entry required.
- Data were checked on-line using a series of logical checks.
- Additional possibilities for data-collection (in case of emergencies or in unapproachable places like small islands) were **paper questionnaires** and **telephone interviews** (both used for less than 1% of the cases).

Marking a residence's spatial coordinates on an online map

People enumerating themselves on the Internet had to find their dwelling on an e-map and mark it.

The same was done by the enumerators during the period of fieldwork.

Web applications: map application for online respondents

⬇ Open Help

1 Apartment in an apartment building	▼

E01. **Please insert the address of your usual place of residence.**
You may start inserting address with the name of the street/farm or settlement (e.g., Riia 8, Tartu).

If you see your address listed here, please click on it and enter your apartment number (except in case of a private residence). Then click the "Save and continue" button.

⬇ Open Help

Save and continue

Address search

| Tatari 51 | Search |

🏠 Eesti Vabariik, Harju maakond, Tallinna linn, Kesklinna linnaosa, Tatari tänav 51
🏠 Eesti Vabariik, Harju maakond, Tallinna linn, Kesklinna linnaosa, Tatari tänav 51a
🏠 Eesti Vabariik, Harju maakond, Tallinna linn, Kesklinna linnaosa, Tatari tänav 51a

If you did not find your address here, please check whether you entered the address correctly and search again. If you still cannot find the address, please locate it on the map.

To Map

Web applications: map application for online respondents
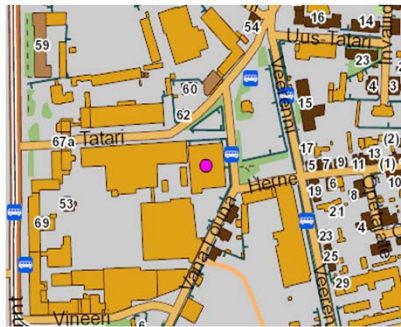
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Save and continue

Eesti Vabariik, Harju maakond, Tallinna linn, Kesklinna linnaosa, Tatari tänav 51

Back to address search

Apartment no.

CENSUS PROCESS.
E-ENUMERATION

Census moment and census time

The census moment was the very last day allowed by Eurostat for Member States: 31 of December 2011 at 00:00

The census period was divided into the following stages:
- e-Census: 31.12.11 – 1.02.12
- data organisation: 2.02.12 – 19.02.12
- census interviews: 20.02.12 – 31.03.12

Data organisation started already at the beginning of the e-census to avoid approaching households where all people had enumerated themselves online.

E-census

How many people will enumerate themselves online?

The prognoses varied from 5% to 80%.

After the pilot census (31.12.2009—31.03.2010) the forecast was 25%. The actual result was much better: 67%.
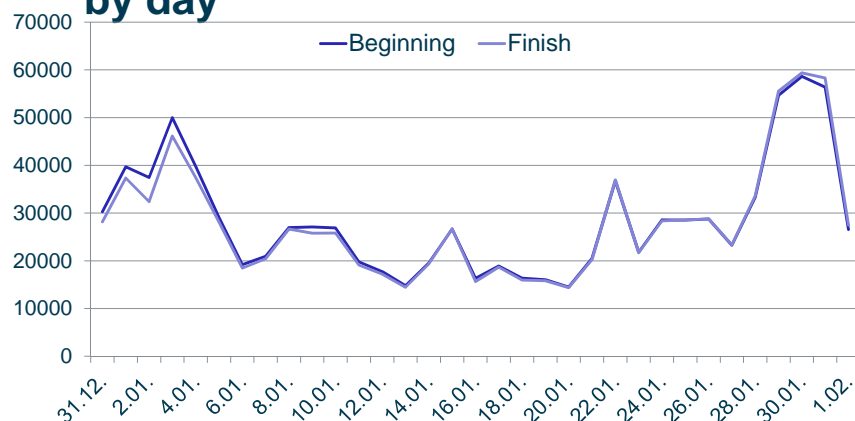
E-census.
Probable reasons for success

- A long and intense campaign ensured a positive reception of the census in the society.
- Estonians are experienced in using the Internet (banking, voting etc.).
- The transparency of the census process: the results (by counties) were available on the census homepage and were updated each hour.
- An idea of breaking the world record (to surpass Canada, whose e-enumeration score was ~55%) was put forward by a popular writer, creating excitement in the society about getting a better result.
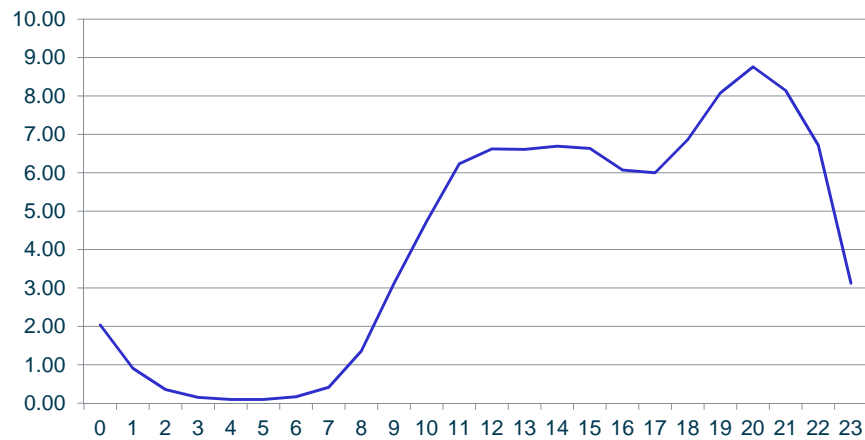
Intensity of e-enumeration.
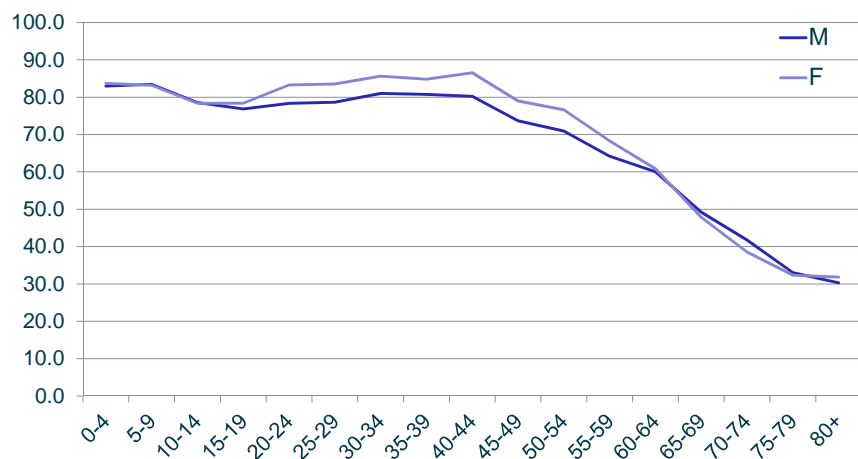## Number of self-enumerated persons by day

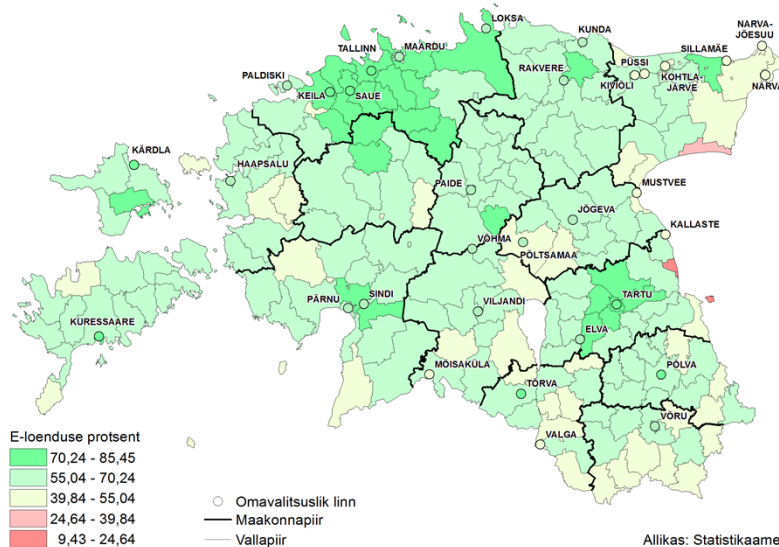## Usage activity of the e-census environment over 24 hours (%)

Share of population enumerated online by age group and sex (%)

Share of online enumeration by counties

E-loenduse protsent
- 70,24 - 85,45
- 55,04 - 70,24
- 39,84 - 55,04
- 24,64 - 39,84
- 9,43 - 24,64

○ Omavalitsuslik linn
— Maakonnapiir
— Vallapiir

Allikas: Statistikaamet.

Almost uniform distribution of e-enumeration

The difference between the share of e-enumeration of the most active (Tartu) and the most passive (Ida-Viru) counties was only about 60%.

That means, in each village and town of Estonia, there was a lot of people who were able to enumerate themselves online.

CENSUS RESULTS

First added bonus – environment

- For the census, a general-purpose systematic software (environment) was created that will be used in the future for surveys and for processing, analysing and combining data from different sources.
- The environment was tested thoroughly during the census.
- It can also be used for the forthcoming register-based censuses.

Environment for monitoring the census process as whole

The environment (software-system) created for the census allowed Statistics Estonia:

- To create the questionnaires, implementing the help-texts and logical checks;
- To create optimal interviewing areas (on a map) and the corresponding enumeration lists with the dwelling addresses;
- To gather data (via the Internet or on laptops) and create the census database (of raw data);
- To monitor the work of each enumerator and check their success or lag during the fieldwork period;
- To define the roles of people working with data; to follow the security rules and restrictions to protect the data;
- To calculate the necessary output variables using the census data.

Quality of census results

- The questionnaires were rather long: besides obligatory questions, the ethnic nationality, mother tongue, command of foreign languages and local dialects, birthplace of parents and grandparents, number of children borne were asked about, there were also some questions about health, sources of subsistence etc.
- Estimated coverage rate was for persons was about 98%, for dwellings – 99%, the average for census items (questions) was about 99%.
- In general, the quality of e-census was not worse than that of interviews. Only about 1% of questionnaires filled in online were improved by a face-to-face interview.

Cost

- The cost of the Estonian census was considerably high: 10,4 € per capita.

- One reason for this is that the population size is only 1,3 million and the population density is low.

- However:
    - Due to the high e-census participation rate, about 20% of the planned resources were saved;
    - The census environment that can be used for future surveys and data analysis was prepared and tested;
    - Preparations for future register-based censuses were also started.

Population density (people/km²)

LESSONS LEARNED

- Estonian people are ready to use the Internet for various procedures, even if it is time-consuming and not very easy.

- Good results in large-scale nationwide actions require a long-lasting campaign and transparent actions.

- The big problem of contemporary censuses is the mobility of people. In Estonia, up to 20% of people do not live in their registered residence. Identifying addresses was another problem – it was greatly solved by the new address standard.

- Technical solutions are not 100% reliable (e.g. Internet connection). It is reasonable to have a plan B.

Thank you for your attention!

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