Usage of registers' data in censuses

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Censuses and registers measuring the society

The aims and resources of two statistical collections – census and registers

- The Censuses are the largest and most important statistical collections undertaken by any country.
- The census must measure all important dimensions of the society; it is like a snapshot of the whole society with all its members and smallest details.
- But – there are objective factors and reasons demanding changes in the ideology and practical organization of censuses in the 21st century.

- In the modern society it became evident that a series of periodically made snapshots does not give enough information to follow the development of the society and to make adequate decisions.
- The permanent need for information was the reason why many different registers have been created in most developed countries.
- The registers form a modern collection of statistical data that is continuously updated.
- It forms a tool for monitoring the development of the society.

The problems we will regard here are:

- How much the registers can be used to solve the problems of censuses and can they improve the quality of census data?

- Can the registers substitute the traditional censuses and which are the preconditions of that?

The recent changes in the society that influence the data collection

During the last several decades the society in the whole world has changed dramatically.

Several new dimensions have arisen and they need new, more flexible measurement instruments, compared with traditional censuses.

Especially in Europe the changes have been remarkable.

The leading terms characterizing the society today are ***mobility*** and ***diversity***.

- **Mobility** in the sense of living place means that many households have several living places;
- Also it is quite common that a people works in one city, studies in another city, has home somewhere in countryside and spends vacation somewhere abroad.
- **Mobility** in the sense of family or household relations means that its is very difficult to define which couple is a family/ household
- There are more and more children whose parents live in different places and children circulate between parents,
- But there are also some features of “reverse mobility” – there are more and more people working at home and communicating with employer via internet,

Diversity means that it is more and more difficult to define a finite set of fixed standard “shells” to cover all people of the society/ in a country.

- There are very different family forms: homo- and hetero couples, married and unmarried, couples living together and living in different addresses, having common, separate and adopted children;
- The societies are more and more multinational, multiethnic, and multicultural and in spite of all possible education programs, there are quite a lot of people who cannot and do not like to communicate in official language of the country.

But, besides young people using all modern possibilities of communication there still exist elderly people, who like their traditional living style in countryside without computers, internet and mobile phones.

In some sense, the differences between generations in their values and behaviour are greater than earlier.

And, the share of elderly people is increasing and that means also that the diversity caused by age structure in society is increasing, too

Most of these problems are not new in principle, but since they were rather exceptions that formed in all statistical tables a shell named “others” and share less than a part of percent, they were not used in common statistics.

Nowadays all these features are increasing and cannot be ignored.

That means they must be measured to have the possibility to forecast the rising trends in society.

New problems in organizing censuses

Nowadays the organization of a traditional census will face with long list of different conceptual, methodological and also economic problems.

Many of them are new or are much more serious today than they were earlier.

Very high expectations:

- The expectations of the quality of the results of census are very high (meeting all quality standards):

The results must be

  - unbiased,
  - with high coverage and response rate,
  - punctual,
  - correct and adequate.

- The number of dimensions to be measured increases steadily.
- Not only prevailing current status, but also growing tendencies in the society should be measured and documented. There are lots of research programs waiting special results from censuses

The unwillingness of collaboration of population

The people are less and less willing to answer to any questions concerning their private life.

As time (also every minute) is nowadays very highly rated, many people do not want to communicate with the interviewer.

They find senseless to say the things that they have already said (in former census).

The longer the interview is, the larger is the probability of discontinuing it.

Conceptual problems – definitions of basic concepts

As result of changes in society such concepts as family and household, (usual) living place, member of household, institutional household etc, must be rethought to cover better the new features and situations in the society.

E.g., the common definitions of household (the set of people having common roof and budget) and usual living-place (the common living-place of a household) form a logical circle and exclude all households having several dwellings or members living apart.

Technical problems

Because of high mobility there are big problems with reaching the respondents.

The diversity of society members (including the homeless and other marginal groups) complicates communication of interviewer with respondents.

The information economization principle

That means the organization of censuses must develop with the aim of meeting new demands and avoiding the new problems.

One of the important approaches is ***the information economization principle.***

The information economization principle (IEP) in statistical data collection

The idea of the principle includes the following four steps:

- maximal use of existing information (registers, data-sets of recent census) in censuses;
- optimization of logical structure of census interview;
- maximal check of existing/used information during the census;
- maximal use of information received in census to improve existing data-bases and registers.

The application of this very simple and seemingly rational principle has a lot of serious hindrances and problems.

The most important problems are the following:

Juridical problems

- Concerning the personal data protection rules;
- Concerning the aims of census
- Concerning the administration of registers and data-sets.

The conceptual problems

Existence and adequacy of identifications in different data-sets:

- *ID-codes of persons;*
- *Address of dwellings*;

Sometimes definitions do not coincide in different registers/ registers and census instruments;

Classifications might be different in different registers and census instruments.

Coverage problems in the sense of dimensions

Some important dimensions to be measured via census are not covered by any register

The coverage problems in the sense of population

Some population groups belonging to the scope of census might not be accounted in registers (and vice versa).

The problems of quality of register data

It may happen that the registers do not check/ monitor the quality of the data in the sense of

- coverage,
- completeness,
- adequacy,
- exactness etc.

There are two main ways to check the quality of data in a data-set:

- to check the logical conformity of data inside the data-set;
- to compare the data with some other data-sets.

The first way is quite simply realizable using special software (logic check), but it does not discover all the problems, especially these connected with completeness of the register.

The second way is much more effective, but demands special resources and is possible only in the case when the comparable data-sets are harmonized in conceptual and technical level.

The technical problems

As a rule, the registers have initiated independently from all other data-sets, they have different architecture, ideology and data structure/ description.

Although the registers in general are more modern and flexible data-collections compared with censuses, still they have some problems of flexibility in the sense of development:

When the data amount and description (including definitions and classifications) has been fixed in a register, it cannot be changed easily, when the situation in society changes.

What should be done to follow the IEP?

From here it follows that before using the register data in censuses a big work must be done mainly in the following three directions:

- Preparing the juridical background;
- Harmonization the conceptual and technical structure of different data-sets and registers;
- Creating the common quality standards and procedures for data checking and monitoring for all registers and data-sets.

It is very important that all these steps do not serve the preparations for usage the registers in censuses only, but they are necessary to improve the quality and usefulness of registers as whole.

Example – the Estonian case

Government wishes the next census should be made using registers

In Estonia since nine censuses have been organized and in 2011 the next, tenth will take place.

As the population of Estonia is quite small (1,3 millions) so the statistics – as all administrative undertakings – is expensive.

That is why there is quite strong pressure from administration – to make the next census using registers, not in the “traditional way”.

This situation forced the statisticians to look critically the situation of existing registers and data-bases to assess the possibility of usage them in census.

Conclusions

Estonia is not ready for organizing the following census using the registers only. Following the IEP principle, it would be useful

- To use the questionnaires where as much as possible answers are already filled in.
- The people should be motivated to check the printed data attentively and correct them, if necessary.

The information for it should be taken from different sources:

- Estonian Population Register
- State Register of Construction Works ,
- Census 2000 Data-base,
- Estonian Education Register
- Register of Estonian Tax and Custom Board

But it is not necessary to make the following census in quite traditional way using interviewers with paper forms and pencils.

The following census in Estonia is planned to make in the combined way where CAPI and CAWI will be used.

The experience of e-communication is in Estonia quite good, as ETCB has already during five years collected the information mainly using pre-filled forms and since about 80% of all population have filled them in electronically, using identification by bank codes.

The results of census 2011 must be used to make decisions about the quality of registers and to find the possibility to correct them.

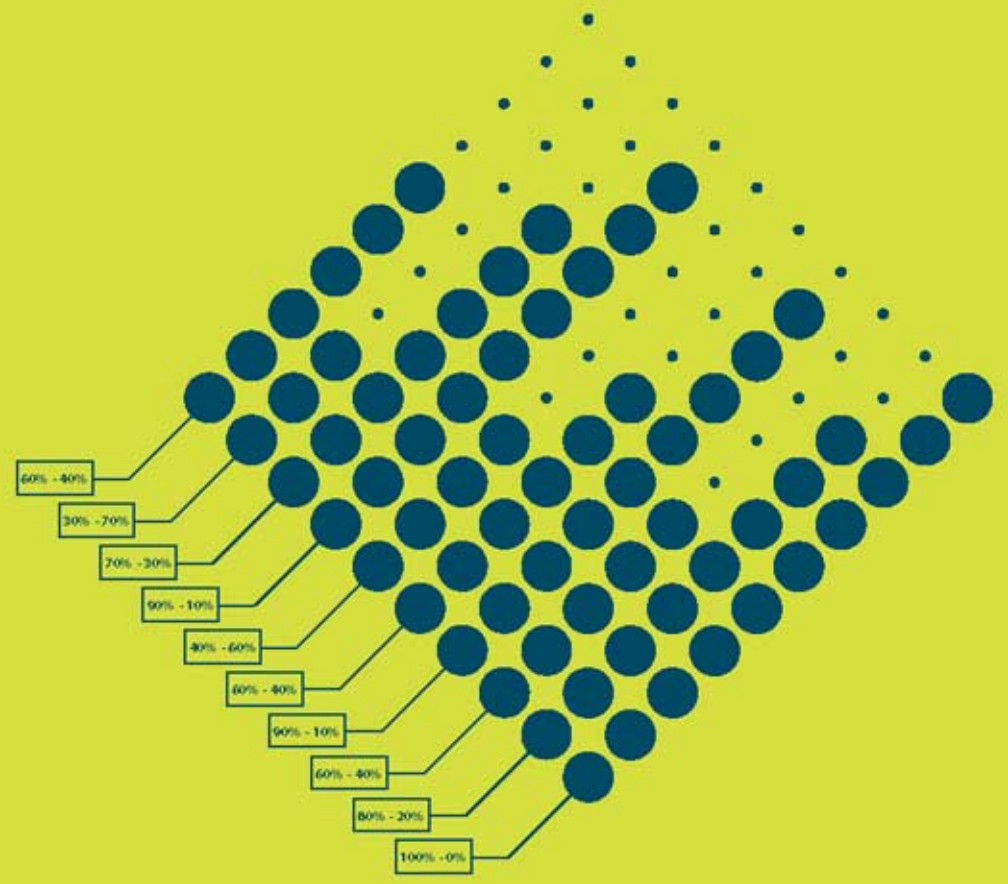
In some cases it might cause some changes in regulations or laws of registers.

After that it might be possible to make the following census using only registers.

References

- http://www.statbel.fgov.be/census/links_en.asp Censuses in the world
- National Practices of UNECE Countries in the 2000 round of Population and Housing Censuses. Draft – April 2006
- www.riso.ee
- www.mk.ee
- www.ehis.hm.ee
- www.haigekassa.ee
- www.emta.ee
- www. stat.ee

Thank you for attention!



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