

Seminar on Registers in Statistics - methodology and quality

21 - 23 May, 2007 Helsinki

Towards the adoption of EU legislation for Population and Housing Censuses: Summarising progress and highlighting issues relevant to register-based censuses

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1. The (*expected*) adoption² of a Regulation of the European Parliament and of the Council on population and housing censuses constitutes a major collective achievement of the European Statistical System. Strong political willingness and wisdom have prevailed over issues of statistical complexity and narrow national considerations. An important gap in the EU statistical legislation is about to be bridged. The roadmap from the initial ideas towards the final adoption and implementation of the legislation is long and full of challenges. The purposes of this note are to provide an update of progress made regarding the process of adoption of EU census legislation, to discuss a number of key issues --especially linked to register-based approaches--and to try to anticipate likely future developments.

Background

2. There are several reasons for which the European Commission (Eurostat) decided to propose a legal basis for the next (2011) and subsequent rounds of population and housing censuses. The most important reason relates to the need to ensure a high level of quality and comparability of demographic statistics. In almost every policy area in which the EU is active, be it economic, social or environmental, high quality and internationally comparable population data are required to help formulate operational objectives, allocate funds and evaluate progress. Thus, an increasing number of everyday legislative, financial, policy and political decisions at EU level (including the qualified majority voting in the Council) are based on demographic statistics. The *paradox* here is the fact that several decisions (governed by EU legislation) are based on statistics which are not subject to EU legislation, but they are rather collected on the basis of *gentlemen's agreements*. Among their many important uses, population censuses constitute the backbone of demographic statistics, and it is therefore obvious that statistical legislation which aims at quality improvements in demographic data cannot ignore an instrument as vital as the census.

3. There were some Member States which argued that quality improvements and enhanced comparability of population and housing censuses could be achieved without the adoption of EU legislation. In supporting this thesis, they explained that several other areas of Community statistics are functioning quite well on the basis of gentlemen's agreements. Why not the census? As a matter of fact, Eurostat has carefully analysed all possible options before deciding to propose a legal basis (see paragraph 15). A critical element that influenced our choice was the experience from previous rounds of censuses, which have clearly demonstrated that '*gentlemen's agreements*' or '*recommendations*' have failed to ensure the quality needed for the purposes the data are supposed to serve. In the 2001 round, the reference dates were spread over a period of 39 months and the data quality was often insufficient; this has caused a major delay in the publication of the results (44 months after the end of the reference year). The objectives of the 2011 round are to have a unique reference year, ensure a

¹ Many thanks to Gregor Kyi and David Thorogood for their valuable suggestions

² The views expressed here are those of the author and do not necessarily reflect the official opinion of the European Commission, European Parliament or the Council.

high level of quality and reduce substantially the time lag between the reception of data and publication of the results.

4. In addition to providing strong justification, there is at least one important condition that should be met prior to introducing statistical legislation: proof of feasibility of the instrument and of its ability to meet the set objectives; this is normally achieved through adequate testing of all operational aspects of the proposed (statistical) instrument. Demographic statistics represent some of the oldest areas of statistics, and traditional population censuses have been among the first statistical operations of national statistical agencies. We can therefore easily argue that there is adequate statistical maturity and experience regarding both the subject matter and the instrument.

5. One fundamental attribute of the proposed legislation relates to the *output harmonisation* (instead of input harmonisation) approach. In the context of the census Regulation, output harmonisation implies that Member States are free to choose the appropriate method (data source) of census-taking among a list of alternative approaches, subject to fulfilling a number of quality criteria. According to the *current version*³ of the Regulation, Member States can base the statistics on different data sources, and in particular on the following:

- Conventional census
- Register-based census
- Combination of conventional census and sample survey
- Combination of register-based census and sample survey
- Combination of register-based census and conventional census
- Combination of register-based census, conventional census and sample survey
- Rolling census

6. It is worth devoting a few words on the importance of the above issue, i.e. output harmonisation. In an ideal world the adoption of a unique approach of census-taking, say the conventional census, would be the preferred option. In reality however, more and more countries are adopting alternative census approaches (like those listed above), and the proposed Regulation recognises this reality. In this context it is important to underline that in recent years there has been much discussion and controversy over 'what is a census?' With the exception of the conventional approach, all other methods have been challenged as to whether or not they fulfil the essential features of censuses. These debates often failed to recognise that obtaining good quality, comparable, more frequent and timely *census-type* outputs at less cost and lower burden are the underlying driving forces for the change.

7. The significance of the fact that an EU legal basis shall 'label' all the above approaches as constituting 'censuses' (in the traditional meaning of the word census) should neither be underestimated nor over-estimated. It will be the first ever legal act --internationally--which treats the various approaches of census-taking as being equivalent (from the legal point of view). In other words, there is a 'legal' recognition that the above listed approaches are valid and are capable of providing census-type data. In this respect we can say that the Regulation is *realistic* and *forward looking* because it takes account of the underlying dynamic changes in census-taking methods. Of course, it would be naïve to believe that the adoption of a framework legal act is an adequate instrument for overcoming all issues of international comparability which may arise from the use of different approaches. The framework Regulation will be complemented by implementing regulation(s) which will define the contents of the quality reports that all Member States have to submit. This means that the legal basis will make it *compulsory* for Member States to formally and explicitly address quality and comparability issues of the next census rounds. The European Statistical System will therefore play a central role in future developments of census methodology and will ensure a higher, than otherwise, compliance to the essential features of censuses and a wider awareness of best practices. The whole operation resembles to a 'census laboratory' in which a large number of specialists will try

³ Draft text of 03 May 2007

to come up with comparable and high quality census results. The benefits from such a collective work will be extended beyond the population and housing censuses to the entire sphere of demographic statistics.

The consultation process

8. Initial discussions about the necessity and feasibility of a legal basis for the population and housing censuses took place at a number of meetings of the Demographic Statistics Working Group. Some Member States had underlined that EU legislation would help them to obtain the 'resources' required for the planning and execution of the census.

9. A first draft of the Regulation on Population and Housing Censuses in the European Union was presented to the "Directors of Social Statistics" (DSS) on 28 September 2005, as well as to the Statistical Programme Committee (SPC) on 30 November 2005. Both, the DSS and the Statistical Programme Committee expressed broad support--in principle-- for the legislative project and its approach. At the request of some EU Member States a comprehensive *list of the topics* to be covered has been added as an annex to the regulation.

10. Prior to the adoption of a legal act by the Commission, and before transmitting it in the form of a proposal to the European Parliament and the Council, it is necessary to consult a wide range of Users within the Commission, i.e. other Directorates General (DGs) of the Commission (for example Employment, Economic affairs, Regional Policy, Environment, Health, and others). In total, 24 DGs of the European Commission have been asked their opinion about the legislative Proposal. All of them approved of the Proposal, welcoming the effort of the European Statistical System to improve the quality of reporting on the population and on housing. There were some technical comments on the topics, e.g. the need for additional recommended topics related to energy consumption. However, Eurostat was able to convince the respective DGs that a population census is not the appropriate tool for collecting information on topics in cases where a sample survey could provide the required information. Eurostat argued that the reality of census taking in the Member States and the *costs* involved would have to be considered.

11. Eurostat and several Member States have actively participated in the preparation and drafting of the international recommendations for population and housing censuses, both for the European region (steered by UN ECE) as well as at the world level (steered by UNSD). Our main concern was to ensure that an output oriented approach is also recognised in the CES recommendations and that the guidelines and reporting requirements from various international bodies are consistent and do not impose unnecessary burden to countries.

12. Moreover, Eurostat has conducted a *feasibility study* about the topics to be covered and their level of regional detail. The study involved an enquiry sent to the National Statistical Institutes which asked what topics they intend to cover in the 2011 census, and on what regional level the data would be available. This is of particular importance if a country opts for using sample surveys to complement a register-based census for topics where information might otherwise not be available (e.g. if they are not covered by the registers).

13. On the basis of this consultation process, we were in a position to present a *realistic* and comprehensive legislative proposal that was adopted by the college of Commissioners in February 2007.

14. The proposal has since been discussed at the Working Party on Statistics (STATIS) of the Council of the European Union on 5 March and 3 May 2007. It will most likely be discussed again by the end of June 2007, i.e. just before the end of the German Presidency. It is hoped that the text of the Regulation will be finalised at that meeting (final compromise text). Of course, amendments can be proposed by the European Parliament at a later stage.

15. Eurostat has also conducted an "Analysis of consequences"⁴ where the following different options were considered and evaluated:

A) *No harmonization* of Population and Housing Censuses in the EU

B) A *"Gentlemen's Agreement"* on a Population and Housing Censuses in the EU

C) A *Directive* on Population and Housing censuses in the EU

D) European legislation on Population and Housing Censuses in the EU (*Regulation* of the European Parliament and the Council + implementing Commission Regulation). The legislation would be **output oriented**, not input oriented, leaving Member States the choice on what data sources to use and how to derive the results. The legislation would clarify responsibilities and roles, as well as common requirements concerning the quality and transparency of results and methods.

E) European legislation on Population and Housing Censuses in the EU (*Regulation* of the European Parliament and the Council + implementing Commission Regulation). As opposed to option D, this legislation would be **input oriented**. It would specify in detail what data sources the Member States had to use (questionnaires, registers, etc), and how the required data had to be derived from these sources.

The "Analysis of consequences" indicated that the best solution would be **option D** because it guarantees census results that are reliable, transparent in terms of methods and sufficiently comparable. Even though Member States are free to choose the way they think is best to conduct censuses in their country, the quality, particularly comparability, would be sufficiently guaranteed because the legislation would oblige Member States to respect key standards and specific quality requirements. Option D minimises the additional burden that would result from intervention at EU level in decisions concerning data sources and census approaches to be adopted.

From the initial proposal to the 'latest' compromise text

16. During the negotiations in the Council Working Party on Statistics, quite a number of issues have been raised, and many improvements were made. Most of these changes are of a technical nature or have made the wording of the Articles more precise and therefore less ambiguous.

- The most important change requested by several Member States was that the Annex to the regulation should only list the topics that are '*core*' in the CES Recommendations, leaving out the '*recommended*' topics. The basic argument presented by Member States was that the Regulation

⁴ The 'Analysis of consequences' is less extensive and of smaller scope than a formal 'Impact Assessment'. The basic rule for establishing a formal Impact Assessment document is that the proposal should be in the Commission's Legislative and Work Programme (CLWP). In principle, Eurostat's proposals do not figure in this annual programme which only includes major policy initiatives. Consequently, there is no requirement for establishing a formal Impact Assessment on each legislative proposal. However, it is obvious and also desirable for the Commission to assess in a systematic manner the potential impacts of all its proposals. For these reasons, Eurostat decided that from October 2005 all new legislative proposals should follow without exception the Project Management Methodology (PMM) and have in the file a document analysing the effects and implications of the proposal according to the model of the PMM. This decision concerns the legislative proposals, i.e. proposals for acts of the Parliament and the Council. The depth and scope of the assessment shall be determined on a case-by-case basis, taking into account the likely impact of the proposed action (principle of proportionate analysis) and can be limited to the essential political, social and economic impacts of the proposal.

has a 'compulsory' / 'binding' character and it is therefore not appropriate to include topics which are not legally binding. Given that this change was requested by the majority of Member States, it was accepted by the Commission. Eurostat would have preferred to keep the recommended topics (as being optional) for the sake of completeness; it would have also been a sign of explicit recognition of the importance of other areas (non-core) which should be considered by the Statistical Authorities in designing population and housing censuses.

- Some Member States questioned the need for the provision of a sample of anonymised micro-data. This provision is "on a voluntary basis" (this text was inserted in the second draft of the regulation). Eurostat states that there are indeed fields where the provision of a sample of anonymised micro-data might be useful for Community activities. By its nature, any tabulation programme limits the possibilities of analysis because it prescribes combinations (cross tabulations) of different topics. The task force on the implementation of the regulation aims at the most flexible and user-friendly approach possible. However, given the nature of censuses (many topics with detailed breakdowns, detailed regional breakdown, confidentiality issues, sampling problems, and problems linked to the linkage of registers) the possibilities to cross-tabulate must be limited to avoid oversized hypercubes. What, however, if there is a very specific but important request? There are several areas of Community concern (where the EU is active) for which a better understanding of the socioeconomic relationships and developments can only be achieved through multivariate analyses based on census micro-data. Examples can be drawn from Regional policies, Immigration policies, Economic, Social, Employment, Education, etc.
- Two Member States questioned the competence of the EU in the area of housing. The view of the legal experts is that the Article 285 of the Treaty (on which this Regulation is based) provides sufficient grounds for a Community action in this area (housing statistics). In fact, there are several Community actions for which in-depth analyses of housing conditions and housing arrangements are needed. These analyses are only possible with the census. For example, at the centre of the debate regarding Immigration is the issue of '*integration of immigrants*'; housing conditions constitute an important variable which is often used in this context (together with other socioeconomic characteristics). Although sample surveys such as the LFS and SILC are very important in this regard, they cannot provide data that cover adequately the depth and scope of the required analyses; the sample surveys need to be complemented by censuses). It should be underlined that at the 2001 Laeken European Council, Member State Governments stressed the need to develop common indicators on social inclusion, explicitly referring to housing, as well as to the need to reinforce the statistical machinery in that sense. Housing has also environmental and economic impacts that can be much better analysed if data are available not just on buildings, but also on the households that live in those building.

Issues of particular relevance to register-based approaches

17. The definition of **usual residence** follows to a large extent the international recommendations (Conference of European Statisticians); however, the possible alternative of 'legal or registered residence' has been included to facilitate the use of registers: '*usual residence means the place at which a person normally spends the daily period of rest, regardless of temporary absences for purposes of recreation, holiday, visits to friends and relatives, business, medical treatment or religious pilgrimage; or, if not available, the place of legal or registered residence*'. The interpretation of the definitions will be made through the so called 'implementing measures', which in reality take the form of Commission Regulations. Again, the CES recommendations will be followed in this regard. In particular, the 12-months criterion of *actual* or *intended* stay will be applied. A central question relates to the extent to which the (different) national registration rules impact on the international comparability of the estimates of the usually resident population (as well as of international migration). A frequent criticism of registers is that they *over-estimate* the inflows and *under-estimate* the outflows. Several international studies have been devoted to these issues. There is a wide variation

regarding the time-related registration rules from country to country (ranging from a few days to several months). In all these cases it is assumed that ‘the registered persons *intend* to stay in the country for at least twelve months’. This is certainly a very strong assumption, and there is evidence that the shorter the time required for registration the larger the over-estimation of the number of persons who actually stay for at least 12 months in the country. **Do we expect that the forthcoming EU Regulation will solve this problem?**

18. While it is difficult to anticipate the magnitude of the impact of the legislation on this issue (and on similar issues), we argue that the legislation will certainly improve the situation. Through the implementing measures, we shall adopt common quality criteria and Member States will systematically report on the extent to which they comply with the set criteria; the quality reports should include adequate metadata in order to assess the degree of international comparability. We do not expect that Member States can adopt common registration rules, but that they can agree on very similar conventions which reduce the wide range of the currently applicable time-criteria for registration. It should be underlined that the divergence between intended and actual stay does not occur only in register-based censuses but in conventional censuses as well: for example, short-term visitors may ‘switch’ to long-term residents without being captured by the traditional census.

19. **Availability of certain census topics or their required details** (breakdowns) may represent another concern for register-based censuses; mixed approaches, e.g. register-based censuses which are supported by sample surveys may face the problem of **reliability of certain estimates at the lowest regional level**. In the cases where registers do not include information on the required census topics, there is little that can be done to remedy the situation. In the absence of a supplementary source (e.g. a sample survey), it would be impossible to provide information on variables which are not part of the registers. For example, some countries have difficulties to report the requested information about ‘the water supply system’, ‘toilet facilities’, ‘bathing facilities’ and ‘type of heating’. This might be the main reason for which some Member States are requesting that these topics should eventually be removed from the final list. In fact, the draft proposed Regulation reflects to a very large extent what is possible for the Member States. As mentioned above (*paragraph 12*), to achieve this, Eurostat conducted a feasibility study in 2006 looking at the topics to be covered and the planned level of regional detail (for countries planning mixed census approaches). The main result of this feasibility study is that the proposed Regulation does not pose excessive demands on the content, and certain variables will only be required at a higher regional level (NUTS 2).

20. A (totally or partly) register-based census needs to combine information from more than one administrative register. The frequency and the routines for updating the data may differ from one administrative register to another. Inevitably, this will impact on the **timeliness** of certain census variables. The quality reporting, which will be an integral part of the next EU censuses, will include adequate metadata on this issue; it will therefore be possible to assess the degree of compliance with respect to simultaneity (one of the essential features). Moreover, the quality of the linkage of information coming from different registers might impact strongly on the correct (or best) allocation of features (e.g. generation of households based on building and population registers; analysis of the employment situation linking population and ministry of labour registers, educational characteristics of migrants, etc.).

21. Another constraint of register-based censuses relates to the **definition of private households**. All persons living in the same dwelling constitute one household according to the ‘*household-dwelling*’ concept which is used in registers. The conventional census approach is using the ‘*housekeeping unit*’ concept. The international recommendations recognise this weakness of registers, and suggest that ‘*in view of international comparability...countries that use the housekeeping unit concept, if possible, make an estimate of the number of private households according to the household-dwelling concept, and break this number down by household size*’. It will be desirable, in the next census round, to assess the impact of differences in the household definition on the estimation of certain household types (e.g. one-person households).

22. Among the other variables of the proposed Regulation, which may require some further attention for register-based censuses, it is worth mentioning the following:

- Ever resided abroad and year of arrival.
- Country/place of birth (on the basis of international boundaries existing at the time of the census).
- Previous place of usual residence.

23. There are obvious limitations regarding the details and time-reference of the information contained in the administrative registers for the above variables. For example, the 'year of arrival' can only be reported back to 1980 for the Nordic countries. Also, 'place of birth according to current borders' might be difficult to re-code for persons born in countries which have ceased to exist as such, like the former Czechoslovakia, Soviet Union, Yugoslavia. In preparing the implementing measures, Eurostat, in close collaboration with census experts (Task Force) has already developed operational proposals which take into account the reporting capabilities of countries planning to use a register-based method.

Next steps

24. The German Presidency hopes to have a compromise proposal which can be agreed by the end of June 2007. The European Parliament will also discuss the Proposal in the Employment and Social Affairs Committee. Before the Regulation can be finalised and adopted, the European Parliament and the Council will need to reach agreement on a final version of the text, incorporating any agreed amendments. It is expected that this can take place before the end of 2007.

25. In parallel, the Task Force on the implementation of the Regulation continues to work in a very intensive way, both via physical meetings and e-mail consultations. A draft programme of hypercubes should be ready to present this autumn and the measures related to quality reporting by the end of 2007. It is therefore expected that a draft of an *Implementing Regulation* might be presented to the SPC not long after the framework regulation will (hopefully) have been adopted.

Conclusions

26. During the recent past we have been witnessing the development and adoption of a variety of census-taking approaches. While the majority of countries are still planning a 'conventional' census for the 2011 round, the number of those countries which are gradually moving to alternative census designs is increasing. In particular, the use of (partly or entirely) register-based methods is becoming more and more common.

27. These alternative approaches have often been challenged by both experts and users. The European Statistical System is adopting a pragmatic, pro-active and forward looking attitude by proposing a proper and dedicated census legislation. A common challenge and objective for the ESS is to demonstrate that *output harmonisation* was the right choice for the population and housing censuses. The adoption of a legal framework constitutes the foundation for a successful outcome of this operation.

28. We would argue that the ESS is now building a unique international *census laboratory* which aims at solving a *census-optimisation* problem: achieving the best possible--in terms of quality and comparability--census results by using alternative census-taking approaches.

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