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# THE MEASUREMENT OF POPULATION AND SOURCES OF ERROR THE 2011 CENSUS IN ROMANIA

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(Received 11 May 2012, revised 14 June 2012)

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## **Abstract**

The last census in Romania took place between the 20<sup>th</sup> and the 31<sup>st</sup> of October 2011 and reminded in the specialist's world and the public sphere the importance of such a difficult initiative. Lately, despite the criticism, alarming are, in fact, the preliminary findings of the results: the population decline and the emphasis of some negative demographic phenomena. It is obligatory that a public debate on these issues take place at all levels of society and not only between socio-economic scientists. In this article, we want to analyse the preliminary results of this census from a comparative and historical perspective, with a view on additional sources of error: technical difficulties of collecting data and the frame of presentation of the whole process in the mass-media.

*Keywords:* census, demographic phenomena, data collection, mass media

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## **1. Introduction**

The importance of the census is a given historical confirmation. Counting population from a geographic area and knowing its volume and structure have often proved to be a fact with strategic and geo-political connotations. In Romania, the census is the only exhaustive research that can underpin future statistical projections, demographic policy or social policy, in general. For these reasons, census in every country enjoys special attention by providing a suitable legal framework and a consistent budget (hence the frequency of approximately 10 years of these extensive research).

In Romania, the first census was organised in 1838, followed by that from 1859-1860, when the census was held in the recent reunited Romanian provinces of Moldavia and Walachia [1]. Other censuses were in 1899, 1912, 1930, 1941, 1948, 1956, 1966, 1977, 1992, 2002, 2011 and their frequency was stabilised to every 10 years [2]. However, according to T. Rotariu, before the Great Union, just the records from 1899 and 1912 can be considered like valuable censuses! [3]

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The history of these censuses is confounded with a history of leading personalities who were involved over time: Dionisie Pop Martian, Ion Ionescu de la Brad, Leonida Colescu, Sabin Manuila, Dimitrie Gusti, Octav Onicescu, etc.

From these censuses, we will insist only on the last three: 1992, 2002 and 2011. The first one, realised in 1992, had as objective to register, according to H.G. 1079/1990 “all Romanian citizens residing in the country, whether at the time of the census reference was in the country or temporary abroad and people with other citizenship or without citizenship residing in Romania” [Governmental Decision no. 1079 from 8 October 1990, about the methodology of census in Romania]. In that case it was not important, for example, the time of absence from Romania. Between 1992 and 2002, the population in Romania declined by 1,111,954 people, decreasing from 22,810,035 people in 1992 to no more than 21,698,181 in 2002.

This general methodology was extended to the censuses of 2002 and 2011, stating that the resident population was calculated differently. In 2002 and 2011, resident population was made up of individuals with a domicile in Romania for at least 12 months or for less than 6 months, if they had left the country. From these methodological differences can result the differences in counting the population. Otherwise, we can see in Table 1 the evolution of the Romanian population resulted from the censuses.

**Table 1.** Evolution of Romanian population between censuses.

<b>Year of census</b>	<b>Population</b>	<b>Percentage increases from previous census</b>
1930	14.280.729	-
1948	15.872.624	112%
1956	17.489.450	111%
1966	19.103.163	110%
1977	21.559.910	113%
1992	22.810.035	106%
2002	21.698.181	96%
2011 (provisional data)	19.042.936	88%

The main causes of the population decline between 1992 and 2002 have been identified by demographers as: negative natural increase and migration. Concerning the differences dictated by the methodology used, we can say that its influence was still modest: in 2002, were excluded the Romanian citizens that left the country more than one year before (178,500 people) and had been included the foreigners living in Romania for more than one year (24,000 people). In conclusion, the bulk of the missing people are caused by the emigration for work reasons. Thus, in 2003, a survey directed by CURS Bucharest stated that about 900,000 people were working abroad legally or illegally [4].

The same table shows a volume increase in the Romanian population until 1992 and its steady decrease after this year. If we look at the last census in 2011, the record of the population can be decomposed in several categories (Table 2).

**Table 2.** Categories of population registered at the 2011 census.

<b>Population types</b>	<b>Categories</b>	<b>Number</b>
Registered population from which:		20254866
- Stable population from which	Present persons Temporary absent persons	18384049 658887
- Absent persons for a long period (over 12 months)	-	910.264
- Temporary present persons	-	301.666

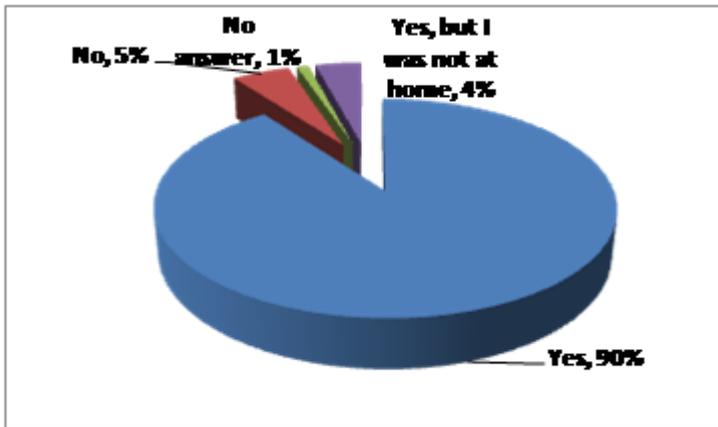
We specify that the stable population is obtained by subtracting the population who left the country and the temporarily present population from the registered population and by adding the temporary absent population. Obviously, these figures are provisional and may be subject to specific patches of missing data in order to complete the analysis with information from censuses conducted in conjunction with other European countries. As we know, in 2011 were established a legal framework and methodology available to the entire European Union in order to guarantee a very good corroboration of statistical data [EUROSTAT, *EU legislation on the 2011 Population and Housing Censuses. Explanatory Notes*, (European Union, 2011)]. This methodology allowed a common work tools but left the EU countries to choose the most appropriate methods for data collection (either by tradition or by assessing the administrative capacity of organization).

## **2. The 2011 census and sources of error**

The provisional results of Romanian census confirm the remarks of demographers and sociologists who had already recorded a fall of Romanian population based on assessments of negative natural growth and on propensity of circular or permanent migration [5-7]. However, provisional results confirm a lack of over 2.6 million people from 2002 and, in this case, the census surprised everyone. A first explanation was given by the National Statistics Institute (INS) in a press release it concerned the ‘people non-contacted’ who represented 2.8% of all households, or about 1 million people (including population that was gone abroad) and for whom there was no one to declare them in the country [INS, *Press release with provisional results of Population and Housing Census-2011*, online at [www.insse.ro](http://www.insse.ro), accessed on 20.02.2012].

The volume of the population that participated at the census - even if it is an estimate level - is higher than the officially recognized number of citizens. However, it is consistent with the results of a survey conducted from IRES Cluj Napoca and achieved between the 31<sup>st</sup> of October and the 1<sup>st</sup> of November 2011 [IRES, *Aititudini si perceptii ale populatiei fată de Recesământul 2011*, November 2011, online at <http://www.ires.com.ro>]. This survey was conducted

by CATI method on a sample of 1469 people aged over 18 years and has a maximum error of  $\pm 2.6\%$ . According to this survey, 27% of respondents thought that the census was pretty useless or unnecessary. Questioned whether they were visited by a census taker they answered as illustrated in Figure 1.



**Figure 1.** Proportion of population who was visited by a census taker; source: IRES, *Research report* (<http://www.ires.com.ro>, accessed on 19.02.2012).

Given the margin of error, we believe that the IRES assessment is consistent with data reported by the INS. However, we believe that the analysis of the results must be corroborated with the analysis of other sources of error occurred throughout the active period of census. We list below the sources of error which we consider responsible for additional errors occurred.

### **2.1. Negative media exposure**

Surprisingly, the census had a contradictory reception in printing and audio visual media. Although most of the journalists explained objectively the data and the conditions of the research, there were other appearances in the media that proved contradictory. For example, one headline in *Evenimentul zilei* newspaper grim that “census brings seed scandal” [edition of 18.10.2011], a TV channel with national cover - Antena 3 - abruptly announced “Chaos in the census” [edition of 26.10.2011] and the examples could continue. Very active were a number of appearances and comments on the Internet that culminated with a site (blog) directly calling for a boycott of the census [<http://antirecensamant2011.wordpress.com/> (accessed on 19.02.2012)].

### **2.2. Technical methods for gathering data**

Like the previous editions, the 2011 census was held in the field by operators/reviewers who applied demographical questionnaires in households. This method is proved to be quite difficult because it involves a lot of work and

training with thousands of operators who are otherwise difficult to control or simply have no experience at all. Unlike Romania, other countries have applied additional methods. According to P. Valente [8], in Europe there were those methods different of classical census:

- population registers (in Austria, Sweden, Norway, Finland, and Denmark). Is very difficult to have a very good administrative database.
- population registers and other statistical resources (Belgium, Germany, Poland, Lithuania, Latvia, Czech Republic, Luxemburg, Holland, Swiss, Italy, Spain)
- statistics and interviews in the field (France).

Of course there are other specific techniques added: on line completion of questionnaire, distribution of the questionnaires on the field and recuperation after two weeks, completion of questionnaires directly on a laptop etc.

From the analysis of these methods, we see that it is desirable to reduce the costs of the exhaustive research. J. Dumais rightly noted that state institutions are packed with statistics and services involved, and is normal to make censuses no longer expensive [9]. Therefore, the author proposed a research sample population as a simplified sampling scheme with a rate of 1/7 of the households surveyed annually. In turn, *INSEE Demographic Department* proposed a modernized census for France [10].

For Romania, the field research with operators (reviewers) is very expensive (about 120,000 people!). We note, for example, that a series of reviewers withdrew from the research because they were not satisfied of the conditions of work and salary. The organizer had to call urgently other reviewers. In some situations, reported by the press, reviewers either did not work or were superficial.

### ***2.3. Obligatory statements versus optional statements***

Some difficulties appeared during the census due to answers defined as optional: religion, ethnicity, maternal language or free declaration of disability. Unfortunately, as a consequence of this fact, a series of questions were avoided or truncated by the respondents - a sign that some respondents have seen the census as a personal threat. Such items related to work or household equipment was not well understood by respondents. Hot debates were generated by the declaration of the CNP (personal numeric code on the Identity Card). From the beginning, it was clear and legal that the mention of CNP is mandatory both for reasons of statistical information and for controlling double counting. After just three days from the beginning of research, the INS spokesman said that the CNP was not required to be disclosed. A dispute on the access to such information in the middle of this national research shows an error of organization and public information with unknown consequences. The authorities finally turned back, the CNP was again required, the spokesman was dismissed and the reviewers had to revert back on the field to recuperate undeclared CNP. The specialists reported that with all missing CNP, the statistical program could not work and

the databases must be entirely recovered by using official databases of public records. Valuable time was lost in the economy of field research.

#### **2.4. Political pressures**

Unexpectedly, the census became a subject of political confrontation. Numerous TV talk shows debated late in the night on the collateral aspects of census. In this case, population was easily manipulated by political leaders. It was the role of political opposition to attack the census from all directions (despite the great importance of this research with all its consequences). As stipulated the newspaper *Romania Libera*, an USL leader, Mr. Victor Ponta said at the end of the census that he personally had not been reviewed and should not give personal identification number, because “it is illegal” (See the article ‘Ponta despre recensământ: Să dai recenzorului CNP-ul este ilegal Romania’, posted online at [www.romanialiberă.ro](http://www.romanialiberă.ro), November 1<sup>st</sup> 2011, accessed at 19.02.2012). The Social Democrat leader believed that “the census was an extraordinary waste of money” and that “the results will avail nothing”. In turn, Mr. Adrian Nastase, PSD National Council president, said on his blog that “compulsory declaration of CNP is a scandalous measure that almost nullifies personal data security and provides a large group of PDL voters, good to rise for the elections” [<http://nastase.wordpress.com/2011/10/20/recensamantul-cnp-ul-si-furtul-identitatii/>, here accessed at 19.02.2011]. The title of this intervention was suggestive: *Census, CNP and identity theft*.

The census organizers had other speeches designed to explain organizational gaps. This former administration minister and census chief coordinator denounced the INS errors and the director of INS (invested by the former Liberal government, the same government who decided the compulsory declaration of CNP) - see the article ‘Igașă dă vina pe Guvernul Tăriceanu pentru problemele de la recensământ’, posted on the site [www.ziare.com](http://www.ziare.com) (November 4<sup>th</sup> 2011), accessed at 19.02.2012.

#### **2.5. Initial organization of the research**

An enterprise of such scale and importance needed to be better publicized. What happened 10 years ago at the last census could not be real good insurance practices. Also, the census debates missed of public space and some video clips were insufficient or less suggestive. Several experts complained of poor coordination of involved institutions at the central or local level and of the politicization of otherwise highly technical actions. A thorough analysis and then a simplification of forms applied in the field were very important and needed to be done. Disputes on those forms can be reviewed by the content analysis of media: the problem of the declaration of *breadwinner*, having deliberately declared any disability, questions suspected to be interested about total family income, etc. Some of these shortcomings could certainly be remedied in the calibration census during May 9 to 16, 2011. Also probably the Romanian

government could initiate certain actions to inform Romanians outside borders but located in neighboring countries.

### **3. Conclusions**

We consider that after a data collection in a 7.086.717 households, the 2011 census is still a valid research and certainly some errors already mentioned can be corrected even by specific statistical methods. However the number of persons not-registered should have been reviewed. A special analysis should be made on the residential environments: people living in rural and urban areas, the new hierarchy in the volume of Romanian cities affected by internal migration for work or just in urban areas due to housing boom of recent years. Other results will be presented even before the end of 2012.

In order to conclude the provisional figures advanced by the INS we will quote two specialists: a leading expert in economics M. Altar who declared: „I think the number of persons working abroad is much underestimated, and the Review had many shortcomings” [www.hotnews.ro, February 4<sup>th</sup> 2012, accessed at 20.02.2012] and the sociologist M. Kivu who appreciate that Romanians can have a surprise with this census [interview at radio RFI Romania, 20.10.2012]. The other surprises we can comment at the final report.

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