

Population Census

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Abstract: *The paper presents a series of considerations regarding the most complex scientific work - the census. The theoretical part of the paper is defined and presented the conditions to be observed when organizing and carrying it out. It complements the presentation of the censuses in Romania. An analysis of demographic developments at the level of Romania is also based on censuses organized after 1990.*

Keywords: *census, statistical work, population, principles, demographic characteristics, objectives, Romania*

Introduction

The first step of the statistical approach is the observation (collection / recording) of the data. There are several statistical registration methods/works. These include the census.

The census is a scientific work that is part of the specially organized, periodical observation category. It is an exhaustive record of a collection of states at some point.

Through the census data are collected from all units of the community studied (people, animals, dwellings, enterprises etc.).

According to the NIS, the census represents "the operation that produces at regular intervals the official population count on the territory of a country and its smallest geographical sub-territories, together with a selected number of demographic and social characteristics of the population. It also provides information on the housing stock. This operation has the advantage of obtaining information on two universes - population and living conditions - within the same dissemination process." [7]

The main purpose of organizing and conducting the census is to provide important and quality information for governmental social and economic policies.

1. Consideration on Population Census

The population census is the census whose purpose is to establish the population and population structure according to its main demographic, economic, religious and socio-cultural characteristics throughout the country. [4]

The population census is a large-scale statistical work that needs to be rigorously organized and developed, and which must respect a number of principles, including:

- universality, which involves the whole population of a given territory;
- Periodicity, representing the need for repetition, at approximately equal intervals (it is recommended to repeat at 10 years). Due to the financial, human and material efforts that are involved in censuses, as well as social and political conjunctions, the period between population censuses tends to increase;
- comparability, which implies the need to ensure the methodological concordance of time and space, both nationally and internationally;
- simultaneous recording, which involves the recording of all data at a critical time, the same throughout the territory;
- the non-limiting character of the features included in the observation program;
- the general scientific and applicative character of the census.

The organization and conduct of a census must be rigorously elaborated, raising a number of special methodological issues and organizational measures. [1, 48]

Among the methodological problems we mention: the territorial delimitation of the community, the definition of the statistical units and the selection of the characteristics to be registered, the elaboration of the statistical forms, the choice of the recording time and the critical moment to which it refers.

The solution of the organizational measures aims at favouring the best possible data collection. Among the most important organizational issues are [3]:

- studying materials resulting from previous research;
- recruiting and training the staff to be involved in the statistical investigation;
- developing guidance and control measures;
- organization of the territory in which observation is to be conducted;
- organizing the activities related to the registration process;
- initiating popularization actions on the purpose of observation;
- elaborating the paper and providing the necessary funds.

When organizing a census, it is taken into account the national and international experience in this area, particularly in the nomenclatures to be used in data processing and structured presentation of information to enable our statistics to be aligned with the theory and practice of advanced countries. [2, 35]

Objectives of censuses [7]:

- *as a matter of priority* - to obtain comprehensive and qualitative information on the number and territorial distribution of the population, the demographic and socio-economic structure, data on households, as well as housing and living conditions of the population and the buildings in which they are situated Housing.
- *complementary* - to the basis of an adequate analysis of the dynamics of different demographic and socio-economic phenomena, a goal closely related to both the high degree of comparability of data on international level and the comparability with the data obtained from previous censuses carried out in Romania.

Data obtained through census-based observation is verified and then processed, resulting in information to be used in micro- and macro-economic decision-making.

2. Population Census in Romania

The main objective of the Romanian statistics is to determine the country's economic and social condition, the overall evolution of society, throughout its history and modern development. In this context is also the design and realization of the population censuses.

Statistics specialists recognize that the first genuine census in Romania was that organized in 1838 in Wallachia. Validity was ensured primarily by the initiation, organization and execution of the action by the state authority; also by observing principles imposed by such a work, among which, most importantly, the inclusion of all persons, regardless of age, gender, social status etc.

Through this census there were realized: the knowledge of the total number of the population of Wallachia grouped by administrative units, with all the characteristics of gender, age, civil status, nationality, profession, etc ; knowledge of the state of development of agriculture; building knowledge, no matter what destination; determining the land area and their territorial delimitation; Obtaining general data about each village; knowing the ways of communication and natural resources, etc. [5]

In the years 1859 - 1860 there were conducted the first modern census of the population of the two newly united provinces was held: Moldova and Wallachia. It was organized by the two pioneers of Romanian official statistics: Ion Ionescu from Brad in Moldova and Dionisie Pop Martian in Wallachia.

Although the working methodology and the registered indicators differed from one province to another, however, the census followed a similar observation program in the two Principalities.

The census works, with methodological limits and organizational and processing imperfections, followed both demographic and economic-social aspects.

They provided the Government of Prince Alexandru Ioan Cuza with important information on *the population, by gender, civil status, age and infirmities, by religion and nationality, social and average categories, by profession, etc., in a district, Cities.* [6]

Confirming the scientific value and practical usefulness of the census of 1859-1860, Mihail Kogalniceanu initiated a project in 1880 for the realization of a new census. This, however, could not take place.

The next population census was conducted in 1899 under the leadership of an emblematic figure of Romanian official statistics - Leonida Colescu, director of the General Statistics Division between 1899 and 1922. This census was marked by the volume and quality of recorded and processed data; Also highlights the leap in demographic research over the past 40 years since the previous census.

The Directorate of General Statistics headed by Leonida Colescu performs the population census of 1912, starting from four organizational principles: (1) *performing on the basis of a special law*; (2) *allocating resources to stimulate a body of reviewers and statistical controllers*; (3) *the obligation to respond*, and (4) *the independence from any tax registration*, requirements consistent with the international statistical practice of time, still valid today. [6]

In addition to data on population numbers, quality and resources, the 1912 census provided data on buildings and dwellings.

Twelve years after the Great Union, the 1930 census was made, the first performed in Romania reunited, considered to be one of the most modern in those years in the world, "*exceptional scientific achievement*", "*a great style work, objectively and flawlessly accomplished*" As it was characterized in the European press of the time. It also brings an *absolute premiere* for statistics in Europe, through the simultaneous recording of ethnicity, mother tongue and religion. [6]

It is noteworthy that in the processing of data and the interpretation of the results were involved the best specialists that Romania had - statisticians, sociologists, jurists, mathematicians etc.

A proof of the scientific level reached by the Romanian demographic statistics and of its economic and social investigation capacity was the realization in 1941 of the General Census of Romania. The efforts of the Romanian state were rewarded by the way in which the Central Statistics Institute organized, conducted and finalized the census; there have been made available to the relevant authorities regarding both the demographic situation and the economic development of the country.

After 1947, with the establishment of the communist regime, society has undergone a series of radical changes, transforming its everyday life and not only. There have been political, economic, social and cultural changes. There have also been key changes to the level of human consciousness. They affected all state institutions. However, even under these conditions, despite the pressure it has been subjected to, the Romanian statistics sought and managed to maintain and observe their working principles. Thus, as far as possible, it has ensured the continuity of the data series over previous periods.

In this context, the censuses of 1948, 1956, 1966 and 1977 were carried out. As a specific and differentiating element, we note the observation unit: the 1948 census was "household" and then "family". It should also be stressed that in the 1977 census the statistical observation program comprised several indicators.

After 1990, three censuses were organized in Romania in 1992, 2002 and 2011, according to modern principles.

By conception and organization, by the methodologies used, by complexity and scope, these censuses place the Romanian statistics among the best in Europe.

An impressive amount of information has been obtained which, statistically processed, provides important data that the National Institute of Statistics provides us with as follows:

- Demographic structure
 - number and population density
 - population distribution by gender and age
 - the civil status of the population
 - fertility of the female population
 - training level
 - population migration
- Socio-economic structure of the population
 - available labour resources
 - the level of training of the active population
 - occupied population
 - unemployment
 - inactive population

- Ethnic and confessional structure
- Dwellings, buildings, households

The data obtained by processing the information gathered in the census are provided to decision-makers, governmental structures; They are an indispensable condition for the prioritization of a unitary and coherent policy in the field of population as well as of the national programs of economic and social development in general.

3. The Analysis of Demographic Indicators of Romania at the Censuses after 1990

Population censuses are important not only to know the demographic, economic, social, ethnic and confessional structure of the population at census moments, but, above all, to see its evolution.

In the following we will analyze the evolution of some demographic indicators, at the level of Romania, based on the statistical data provided by the censuses of 1992, 2002 and 2011.

The comparison of the data provided by the last three censuses highlights a new reality - the population of Romania and its demographic structure have evolved differently from those that have occurred in previous periods. These developments were determined or influenced by the convergent action of some factors of a political and economic nature specific to the post-December period.

These tendencies and peculiarities are a result of the ample and difficult process of transition, of social and moral reconstruction, of reforming the Romanian economy and society, on the road of modernization and the values of democracy. The structural changes that have occurred in these years have led to some specific features, both quantitative and qualitative, both in terms of the evolution of the population, as well as of its socio-demographic or economic characteristics. [7]

The evolution of the population of Romania is shown in Table no. 1 and Figure no. 1. The evolution is descending.

Table no. 1 Evolution of the Romanian population

<i>Census</i>	<i>No. persons</i>	Absolute increase(\square) (<i>persons</i>)		Rhythm of the variation (<i>R</i>) (%)	
		$\square_{i/0}$	$\square_{i/i-1}$	$R_{i/0}$	$R_{i/i-1}$
1992	22.810.035	0		100,00	
2002	21.680.974	-1.129.061	-1.129.035	95,05	95,05
2011	20.121.641	-2.688.394	-1.559.333	88,21	92,81

Source: processed by INS data

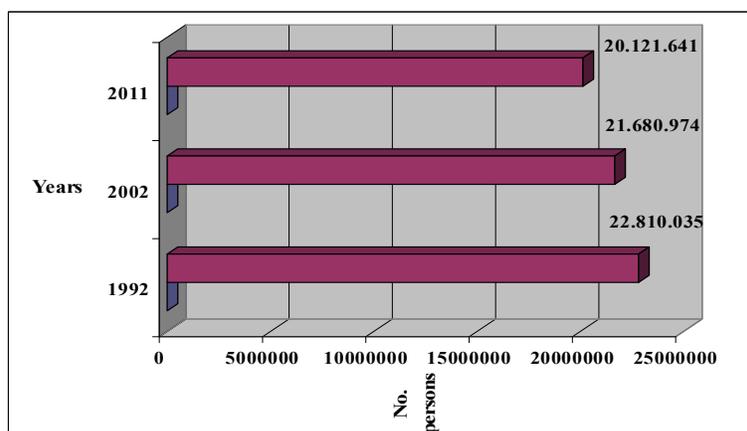


Figure no. 1 Evolution of the Romanian population

According to the data in the table, both periods (1992 - 2002 and 2002 - 2011) were characterized by a decrease in the population. It recorded a decrease of approx. 1.1 million people in the period 1992 - 2002 and approx. 1.5 million people between 2002 and 2011; In total, in approx. 20 years, the population of Romania decreased by 2,688,394 persons (by 11.79%)

The decline of the population in the analyzed period was influenced by the sharp decrease in the birth rate and the negative balance of the external migration.

The population density has decreased, corresponding to the drop in the population, from 95.7 to 84.4 inhabitants per sq km.

Table no. 2 Evolution of population density in Romania

Indicator	UM	Census 1992	Census 2002	Census 2011
Population	Persons	22.810.035	21.680.974	20.121.641
Surface	Square km.	238.391	238.391	238.391
Population density	persons / square km.	95,7	90,9	84,4

Source: processed by INS data

Population distribution by gender shows that the female population continues to be predominant in each of the censuses.

It should also be noted that between 1992 and 2011, the decrease in the female population (1,263,208 persons) was lower than the decrease of the male population (1,425,186 persons), which led to a widening of the gender gap. Thus, in 2011, 1,000 female persons accounted for 1,000 people, compared to 1,034 in 1992.

Table no. 3 Structure of the Romanian population by gender

Gender	Census 1992		Census 2002		Census 2011	
	no. persons	%	no. persons	%	no. persons	%
male	11.213.763	49,16	10.568.741	48,75	9.788.577	48,65
female	11.596.272	50,84	11.112.233	51,25	10.333.064	51,35
TOTAL	22.810.035	100,00	21.680.974	100,00	20.121.641	100,0

Source: processed by INS data

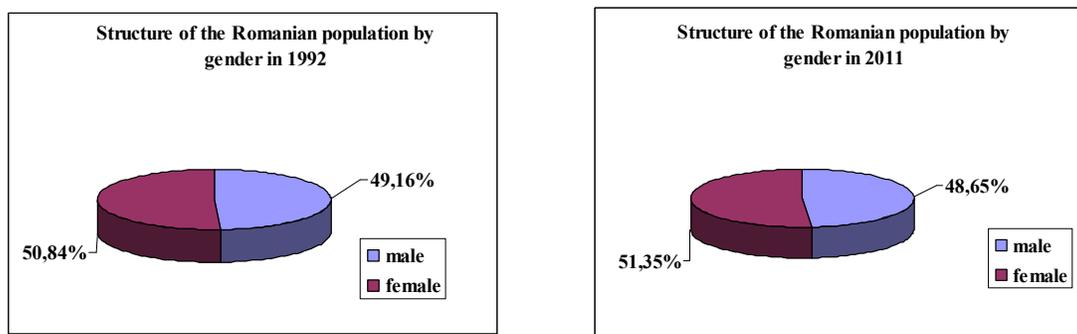


Figure no. 2 Structure of the Romanian population by gender

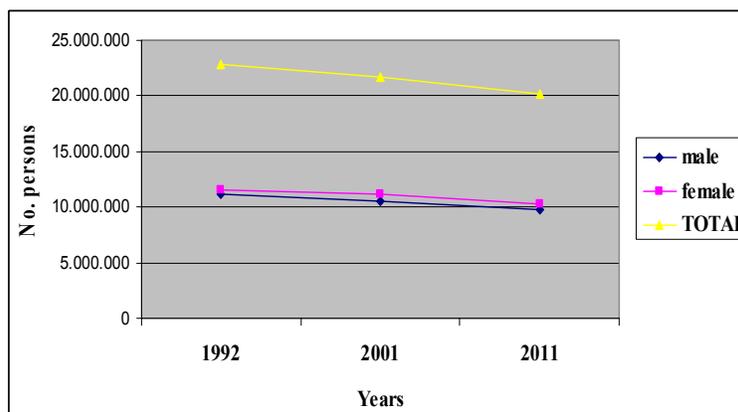


Figure no. 3 Evolution of the Romanian population – by total and by gender

The average structure of the three censuses highlights the preservation of the preponderance of the urban population of Romania at levels above 50.00% of the total population. However, between the censuses of 2011 and 1992, population declines are higher in urban areas (-12.37%) than in rural areas (-11.09%).

Table no. 4 The structure of the Romanian population by average

<i>Environment</i>	<i>Census 1992</i>		<i>Census 2002</i>		<i>Census 2011</i>	
	<i>no. persons</i>	<i>%</i>	<i>no. persons</i>	<i>%</i>	<i>no. persons</i>	<i>%</i>
<i>Municipalities and cities</i>	12.391.819	54,33	11.435.080	52,74	10.858.790	53,97
<i>Communities</i>	10.418.216	45,67	10.245.894	47,26	9.262.851	46,03
TOTAL	22.810.035	100,00	21.680.974	100,00	20.121.641	100,0

Source: processed by INS data

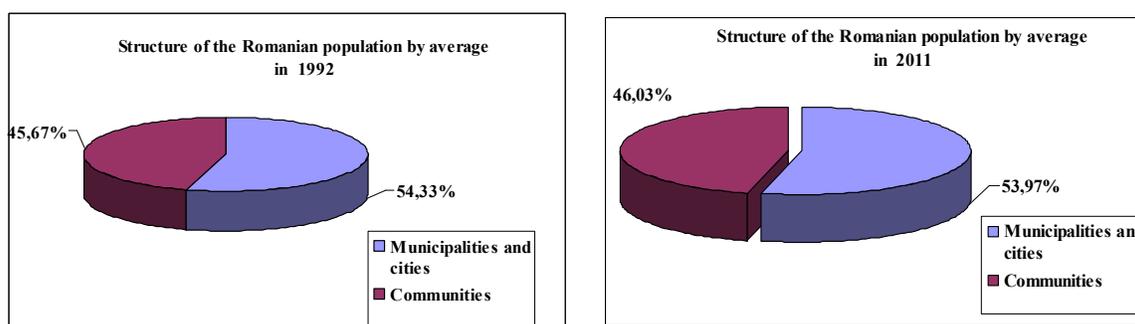


Figure no. 4 Structure of the Romanian population by average

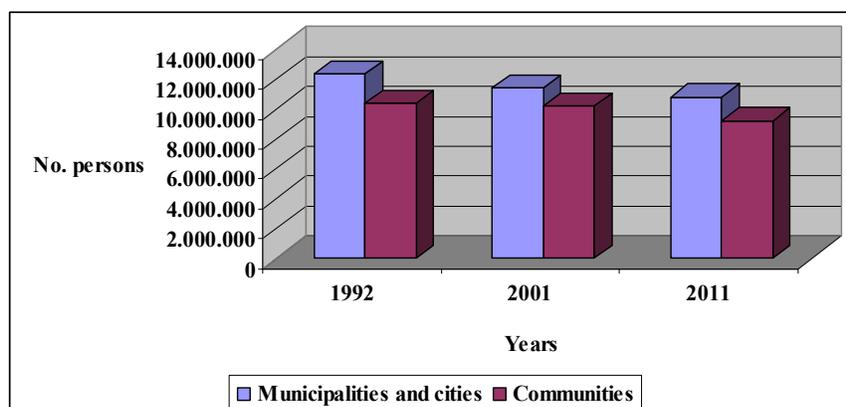


Figure no. 5 Evolution of the Romanian population by average

The structure of the population by age groups is an expression of the trends that have occurred in the last 20 years in the evolution of demographic phenomena, as well as in internal and external migration flows.

Changes in population age structure highlight the increase in the demographic aging process by reducing the number of young people (those under the age of 19), along with the increase in the elderly population (60 years and over). Thus, if we only look at the situation from the last two censuses, we will highlight:

- the decrease in absolute values of the young population by 1,158,750 persons, together with the increase of the elderly population by 298,360 persons;
- the number of young people per 1,000 adults dropped from 454 to 379 between 2002 and 2011;
- The number of the elderly that returned to 1,000 adults increased from 349 to 396;
- The number of elderly per 1000 young people was 1045 in 2011 compared to 768 in 2002, resulting in an aging index of 136%.

Table no. 5 Structure of the population of Romania by age groups

<i>Age groups (years)</i>	<i>Census 2002</i>		<i>Census 2011</i>	
	<i>no. persons</i>	<i>%</i>	<i>no. persons</i>	<i>%</i>
<i>0 – 19</i>	5.456.849	25,2	4.298.099	21,4
<i>20 – 59</i>	12.030.910	55,5	11.331.967	56,3
<i>60 and over</i>	4.193.215	19,3	4.491.575	22,3
TOTAL	21.680.974	100,00	20.121.641	100,0

Source: processed by INS data

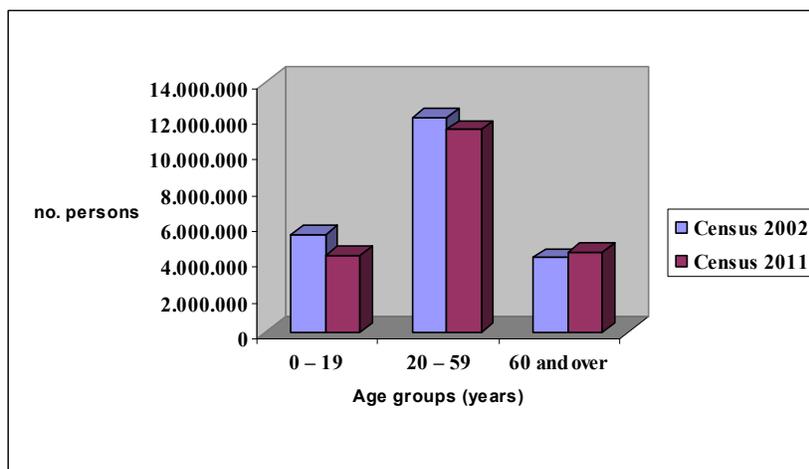


Figure no. 6 Structure of the population of Romania by age groups

The phenomenon of demographic aging needs to be carefully assessed as it has major implications for the future social and economic development of Romania.

However, in addition to population decline and the aging process, we have to highlight a number of positive aspects from statistical surveys. These include increasing the general level of education of the population and reducing illiteracy, the lack of discrimination on confessional and ethnic grounds with regard to access to education or the use of the mother tongue, the free movement of persons in internal and external migration. They demonstrate the progress made in Romanian society.

Conclusions

The population census is a large-scale statistical work that periodically produces the official population counting together with a selected number of demographic and social characteristics.

The modern Romanian statistics conceived, organized and produced a number of 12 censuses, as follows: 1859-1860 the first modern census; 1899 1912; 1930 1941; 1948 1956 1966 1977 1992; 2002; 2011.

The evolution of the demographic structure of Romania, based on the data provided by the censuses carried out after 1990, highlights the changes in the social - economic life of the country over the past 20 years.

The data obtained by processing the information gathered in the census are provided by the National Institute of Statistics to all those interested; But they must, as a matter of priority, underpin the foundation of national economic and social development policies.

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