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Census
A Useful Tool without Practical Use in Bosnia and Herzegovina

The notion and purpose of the census. Population census is used as one of the primary sources of demographic data within a territorial unit, usually a country. Census, observed as a demographic measurement tool, mainly focuses on population growth or decline within a specific population. They are usually collected once every 10 years and the collected data are compared and evaluated against each other and the results obtained in other nationwide censuses (economic, housing, government, etc.). The results obtained serve as a "calibration standard," and further sample surveys are set up in similar ways so that the obtained data could best correspond to and resemble the real state of the society.

Census procedures and data collection are legal categories, and they have a significant impact on a number of public domains, not only within the state administration but also within the private sector, which benefits from an overview of public demands for specific services or goods. For many decades, important decisions on public finances and budget distribution, as well as the availability of public services, have been made based on data collected in a census, which is made available to everyone and free of charge. Such data are also essential for local and national development, as they provide insight into how people live, and reveal more information on which areas of life are "insufficiently" addressed or secured. Some data cannot be obtained in any other way than through censuses, such as data on real residence or data on where and how often people travel and what transportation means they use, which are crucial for planning the capacities of train or bus connections within specific regions.

For example, census can provide the best possible approximation overview of the population's age structure, which serves as a drive for urban planning, construction of neighbourhoods, development of public transportation systems, kindergartens, schools, elderly homes, hospitals, and nursing services or hospice care, barrier-free accessibility for the disabled, etc. The results of the census can be utilised as the foundation for the preparation of other relevant infrastructural and development plans, various housing programs, service networks, and industrial zone planning. The size, availability, and price of apartments and the number of people in a household can also indicate the living conditions of the population and highlight neighbourhoods in which it is problematic to find housing, and whether and why families are forced to live within one housing unit. Data on population density, character of buildings, heating systems, etc., can help to plan and design various emission maps, develop programs for improving air quality, and the development of energy networks. Census data can be used to estimate potential risks in advance and prepare decision-makers to opt for the most effective method of intervention; they also help in planning anti-flood and other emergency

operational measures. The obtained data can thus save human lives, help to develop services in less developed localities, and consequently raise the living standard of the local population and support specific business projects. Census data can also support employment by promoting specific occupational fields (like crafts or trades) that need to be enhanced within the labour market or by strengthening the existing educational or life-long learning courses, as well as adjusting educational system programmes with particular labour needs. The census data can also advance the prospects of successful integration of national minorities and foreigners within the larger society; for instance, through identifying the need for support of much-needed language and other skills-building courses, or design of specific tax reduction policies, or setting local minority councils (if minimum thresholds are surpassed). In other words, statistical data have a huge influence on public policies, as they shape topics for public discussion and help to regulate many areas of social activities.

The origins of census. Available historical records show that censuses were conducted in ancient times. The Babylonians had already developed a population registration system in 3,800 BC, followed by similar enumeration techniques established in China, Egypt, Greece, the Roman Empire, and Palestine. "Population inventories" were mainly used for military and tax purposes. During the Roman Republic, the census was carried out at five-year intervals to register all free male citizens and was combined with an inventory of property (including slaves) to divide the population into "*curiae*." The census results were used to elect officials and to collect taxes.

In the Middle Ages, at the time of feudal lordships, a monarch interested in conducting censuses predominantly for tax purposes often encountered resistance from the nobility. Records of these population censuses are missing, while accurate census results of estates have been preserved only in some cities. Reliable population censuses across Europe took place with the arrival of absolutism and the development of administrative apparatuses (state and church). The first such census was conducted in France in 1666, including the French colonies in North America. The first censuses of the entire population in Europe took place around the mid-18th century. The first reliable door-to-door census was carried out in 1748 in Sweden and Prussia, followed by Finland (1749), Austria (1754), Norway and Denmark (1769), Switzerland (1789), the United States and France (1790) and Great Britain (1801). The basic principles shaping the standardised census methodology began to take shape gradually.

The modern-day type of census-taking dates to the mid-19th century. The pioneer of the methodology was Quetelet, while his population counting principles were applied for the first time in Belgium in 1846. The practical experience of carrying out the census was beneficial for the development of statistical methodology, but there were also many endeavours to ascertain other relevant social and economic data. After the establishment of the International Statistical Institute (1885), the quality of census data collection and result analyses increased, and the principle of comparability of data on an international scale became a reality. Mechanical central processing of data (using punching machines) was introduced in the second half of the 19th century. The mechanical sorting schemes led to further enhancement and improvement of data classifications. The punched cards were later replaced by reading devices.

Census in the EU. Nowadays, all European Union (EU) member states are bound by European Parliament and European Council Regulation no. 763/2008 from 2008, to conduct regular censuses of the population, houses, and apartments. In individual EU member states, census methods differ depending on the national legislation. The development of IT technologies has influenced the way censuses are carried out, as they reduce the costs of implementation and increase the overall quality of data collection and analyses.

Many countries in the EU use a traditional census method. The enumerators record the data in enumeration sheets by writing down the respondents' answers, while some countries use the self-enumeration method, where enumerated persons make the entries themselves. In some countries, questionnaires are distributed by post and sent back in the same way. The shorter versions of questionnaires are used for a nationwide enumeration, while long versions of questionnaires are used only for a selected sample of residents, households, and apartments. The disadvantage of this method is its high cost and dependence on full information disclosure and cooperation of the population, and this is why it is carried out at wider time intervals and the results obtained can soon become outdated.

An alternative to classical census-taking is obtaining data from administrative sources. Population counting based on registers containing comprehensive data on a number of examined units is used in the Nordic countries (Iceland, Denmark, Finland, Norway, and Sweden), the Netherlands, and Austria. This method reduces the cost of conducting the nationwide population census; it is possible to carry it out within a shorter time interval and thus obtain more up-to-date data. The disadvantage is the constant need to update the existing data in the registers, the limited number of collected information that could be analysed, and the potential misuse of the recorded data. Some countries use an index census containing a sample survey on a selected sample of the population to supplement their missing data and provide additional information on certain relevant topics (for instance, the Netherlands). This method is cheaper than a classical nationwide census, but it is not possible to reliably obtain data, even for the smallest territorial units.

Another alternative to the classical census-taking model is the so-called rotating census, used in France. Only part of the population is counted gradually, data is collected over a longer period, and not just at a decisive moment. The advantage of this method is more frequent data updates, even if only for part of the territory, and a reduction of the burden placed on the public. The downside is the limited capacity for comparison since data are not obtained for the entire population at one point in time.

Census in BiH. The Institute for Statistics of the Socialist Republic of Bosnia and Herzegovina (BiH) carried out all population censuses in pre-Dayton BiH. During the Population Census in 1971, 1981, and 1991, the data collected on agriculture were limited. The latest Agricultural Census in BiH was conducted in 1960. These results were later used in the livestock surveys. This means that the latest full Agricultural Census in BiH was conducted over 50 years ago.

The most recent and the only post-Dayton Census of Population, Households, and Dwellings in BiH was carried out between 1 October and 15 October 2013, exactly 22 years after the last census carried out in 1991. It was carried out based on the Law on Census of Population, Households and Dwellings in BiH (Official Gazette of BiH, 10/12 and 18/13), Law on Organisation and Implementation of the Census of Population, Households and Dwellings in the Republic of Srpska (RS) (Official Gazette of RS, 70/12 and 39/13) and on the basis of the Methodology for Preparation, Organisation, and Implementation of the Census of Population, Households and Dwellings in BiH (2013). The 2013 Census of Population was carried out by the three statistical institutions, in cooperation with other legally authorised bodies and organisations, i.e., the Agency for Statistics of BiH (BHAS) for the territory of the Brčko District, the RS Institute of Statistics (RSIS) for the territory of the RS and the Federal Institute of Statistics (FSI) for the territory of the Federation of BiH (FBiH). The BHAS and the FSI published the Census results in June 2016. The results of the 2013 Census of Population, Households, and Dwellings are available online, and they cover the following areas: demography; education; economic activity; buildings, dwellings and living conditions, and household and family structure. Other data are available from other annual statistical surveys: vital statistics - births, deaths, marriages and divorced marriages; migration statistics - internal migration trends, as well as international migration.

The enumerators used a classical enumeration method (face-to-face interviews) and processed the obtained data in accordance with the International Standards for Population and Housing Censuses defined by UNECE and Eurostat, approved by the Conference of European Statisticians and Recommendations for Population and Housing Censuses 2010; Regulation (EC) 763/2008 on Population and Housing Censuses and Implementation Measures; Regulation (EC) 1201/2009), and other relevant standards defined by the Concil of Europe Convention on the Protection of Individuals with regard to Automatic Processing of Personal Data. The Agency for Statistics of BiH has introduced a statistical register of spatial units for BiH, and its regular update is based on data obtained from the entities' authorities and BD, which are responsible for keeping a single register of spatial units within their specific competence.

The 2013 census proved to be a stumbling block in some important events in BiH, especially those related to elections and the Electoral Law of BiH. After prolonged ethnic confrontations, in the 2016 Ljubić case, the Constitutional Court of BiH (CCBiH) introduced the division of mandates based on the latest census from 2013, instead of the 1991 census, through an Instruction adopted by the Central Election Commission. Importantly, a comparison between the 1991 census and the 2013 census underlines the differences in ethnic composition before and after the 1992-1995 conflict. The comparison between the two censuses shows that ethnic affiliation has become territorially embedded which has consequences on the division of mandates. Apart from this, the census remains unused for any of the purposes stated above.

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