

QUANTITATIVE DETERMINATION OF THE DEGREE OF URBANIZATION***D. Gataric, B. Đerčan****dgataric@gef.bg.ac.rs, bojandjercan@yahoo.co.uk**University of Belgrade, Faculty of Geography, Belgrade, The Republic of Serbia**University of Novi Sad, Faculty of Sciences, Novi Sad, The Republic of Serbia*

The process of urbanization can be viewed diachronically and backwards, all the way to the formation of cities like Cairo and Rome. Thus, it cannot be treated as a new and modern process that encompasses only the emergence and development of cities and complex changes in rural areas. The term urbanization was first introduced into the scientific literature by the Spanish engineer Serda (Ildefonso Serda) in his work titled "*General Theory of Urbanization*", written in 1867 [1].

There is a great disparity in the urban concentration of the population between highly developed countries, where the impact of the industrial revolution has been stronger and more recent, and some countries that have only recently been touched by the process of industrialization. The transition from a rural to a predominantly urban society, which took place in highly industrialized countries, was accompanied by profound changes in almost every phase of the social life. It is these changes and their consequences that attract the attention of many scientists, especially in the study of the differences between the rural and the urban. Given that urbanization is closely related to industrialization, Geyer and Kontuly introduced the concept of differential urbanization in 1993, which is very important for understanding spatial-demographic and functional changes in rural settlements [2].

Quantitative determination of the urbanization degree is reduced to the share of the urban population in the current world population. However, the degree to which the modern world can be said to be "urban" is not completely or accurately determined only by the share of the total population living in cities. The influences that cities have on human social life are greater than indicated by the quantitative range of the city's population, because the city is not only a place where people work and live, but also the initiator and controlling center of economic, political and cultural life both within its administrative boundaries and beyond them [3]. Given the complexity and heterogeneity of the urbanization process, which is more an indicator than an instrument of economic development, especially in developed industrialized countries, the degree of urbanization cannot be measured by a single indicator.

The easiest way to determine the degree of urbanization is by using the quantitative parameter, but it has a number of shortcomings. One of the main shortcomings in determining the degree of urbanization is the disregard of the population that lives outside the administrative boundaries of the urban settlement and works in the city and lives "urban" lifestyle, as well as the population that lives and achieves the economic existence in urban rural settlements. In addition, the bias in determining the degree of urbanization is particularly characteristic of underdeveloped countries, which are characterized by an explosive concentration of population in urban settlements due to the relocation of population from rural and

underdeveloped areas, as well as high natural increase. On the other hand, this quantitative way of determining the degree of urbanization cannot be applied neither in highly developed countries due to the fact that there occurs the opposite process – population deconcentration. Consequently, the degree of urbanization cannot be a completely satisfactory parameter as long as numbers are considered the only criterion, and it is desirable to take into account some other variables in order to determine the degree of urbanization [4, 5]. Given that urbanization is a complex and heterogeneous socio-economic process determined by the process of industrialization and deagrarization, in order to determine the degree of urbanization, in addition to the share of urban population in the total population, other indicators of socio-economic development can be taken as well: share of non-agricultural population, national income per capita, national wealth per capita, share of used territory from the total territory of a country etc. [6].

In addition to the above mentioned shortcomings, a big problem in determining the degree of urbanization can be the criterion for determining the urban settlement and determining urban boundaries (borders), which is necessary for accurate monitoring of various phenomena in urban and non-urban settlements [7]. Recently, more and more scientific research and papers emphasize the need for methods which can be used for defining urban and rural areas, and thus the need to select different indicators and criteria for defining urbanity and rurality. The differences in administrative division and statistical practice, the inequality of conditions for defining the urban, i.e. non-urban, differ from country to country.

In the world, therefore, there is no consensus on the answer to the question of how to define an urban settlement. Some countries declare any settlement with more than 2,500 inhabitants to be urban, some take a minimum of 20,000 inhabitants, some take into account population density, some include the share of non-agricultural population, and some emphasize the importance of developing public services. Typologies vary from country to country, but they also change over time [8].

Since 2010, the European Commission has used the degree of urbanization (DEGURBA) to classify, conditionally speaking, municipalities, i.e. local administrative units LAU 2 (LAU - local administrative unit; LAU 2- Local Administrative Units - Level 2 / municipalities). This methodology, which is based on the methodology of the Organization for Economic Cooperation and Development (OECD), is based on the formation of a cluster of "urban cells" with a minimum population density of 300 inhabitants/km² and a minimum of 5,000 inhabitants. Based on that, municipalities are classified into three categories: **densely populated** (metropolises and large urban areas), in which at least 50% of the population lives in densely populated areas; **medium-populated** areas (medium-sized cities and suburban parts, small towns), in which at least 50% of the population is concentrated in densely populated zones and less than 50% of the population in urban centers; and **sparsely populated** areas, in which more than 50% of the population lives in areas recognized as rural [9, 10]. Some authors emphasize that the rural-urban dichotomy and the rural-urban continuum are especially important for the depiction of urban and rural areas [11, 12].

Indicators on the basis of which the model for determining the degree of urban settlement was induced, which was applied by Milan Vresk [7] and modified by Dragutin Tošić are: a share of active agricultural population in total population,

households without agricultural land and share of workers in active population performing this occupation. By combining the above indicators, five groups of settlements stand out: urban, more urbanized, less urbanized, on the threshold of urbanity, and rural settlements [13].

All this points to the conclusion that it is difficult to postulate a sufficiently precise and uniform way to define the urban and non-urban at the level of individual states, and especially on an international scale.

Regardless of different criteria and definitions, urbanization can be monitored not only based on social consequences manifested by unequal degrees of urbanization, the process of ruralization of cities and villages, as well as social differentiation and segregation, ecological and housing problems, lifestyle changes etc. [14, 15, 3]. Based on numerous, conditionally speaking, "dramatic" changes in the economic, social and technical and technological spheres of life in recent decades, changes in the city size, spatial and physical structure, as well as the layout and strength of urban subcenters are attracting increasing scientific attention [16]. There are various theoretical and methodological approaches to the research of urban phenomena, with the definition of numerous concepts that explain the role of cities and urban agglomerations in the functional organization and integration of space [17].

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