

## Population distribution by selected road network elements - comparison of centroids, geocoded addresses, built-up and total area for an example of Slovak communes

Vladimír Bačík<sup>1, CDFMR</sup>, Michal Klobučník<sup>2, CDFMR</sup>

Comenius University in Bratislava, Department of Human Geography and Demography, Mlynská dolina, 842 15 Bratislava, Slovakia; <sup>1</sup>e-mail: bacik@fns.uniba.sk (*corresponding author*); <sup>2</sup> e-mail: klobucnik@fns.uniba.sk

Bačík, V. and Klobučník, M., 2015: Population distribution by selected road network elements - comparison of centroids, geocoded addresses, built-up areas and total areas on the example of Slovak communes. In: Szymańska, D. and Chodkowska-Miszczuk, J. editors, Bulletin of Geography. Socio-economic Series, No. 28, Toruń: Nicolaus Copernicus University, pp. 7–20. DOI: <http://dx.doi.org/10.1515/bog-2015-0012>

### Abstract.

*In the presented paper, we can identify two research objectives. The first was the development of a point layer, which would abstract from the position of a central point depending on the shape of territory of the respective spatial unit (commune), and would express the position of a commune as regards the localization of the point in the area of commune built-up area. For such purpose, a geocoding algorithm from Google was used, for which it is possible to prepare a final dot map layer without any terrain layout, as the geocoding algorithm processes only simple text addresses of the relevant spatial unit. Such an obtained dot layer was compared with the layer of centroids and the differences achieved were visualized. Another objective was to compare different methods of interpretation for the distribution of population from selected road network elements on the level of communes. Point layers in the form of centroids and geocodes were compared with the spatial distribution of the population on the basis of the total and built-up area of commune. In particular in areas with marked vertical division of the terrain, it is more suitable to use geocodes as the holder of statistical information in comparison with commune centroids. In assessing the distribution of population, the values reached are much closer to the expression of the identical indicator calculated for the built-up area of commune that we consider the most accurate, which is also documented by the average percentage deviations between particular interpretations of population distribution.*

**The full paper is available at:**

[http://www.bulletinofgeography.umk.pl/28\\_2015/01\\_Bacik.html](http://www.bulletinofgeography.umk.pl/28_2015/01_Bacik.html)