

## **Papers Presented at International Conferences, with Program Committee, in Foreign Countries**

### **Assessment of social vulnerability using spatial multi-criteria analysis (SEVI model) and the Social Vulnerability Index (SoVI model). A case study for Bucharest city, Romania**

It was presented at the 32nd International Geographical Congress in Cologne

**Iuliana Armaş  
Alexandru Gavriş**

This study investigates two vulnerability algorithms through a spatial exploration model of social vulnerability in the Bucharest city. The research examines social vulnerability in the light of three dimensions: “Social”, “Economic” and “Housing quality”, obtained by applying the factorial reduction procedure (PCA, Varimax) on the 2002 census data at tract level of Bucharest city. The social vulnerability index (SoVI model) follows the steps indicated in 2003 by Cutter et al. Using the spatial multi-criteria social vulnerability index (SEVI model), we aggregated the scores of the indicators in which the selected factors were saturated, and introduced as multidimensional indicator maps in the spatial multi-criteria analysis (SMCA) module of Ilwis software.

The final index score was obtained by weighting sub-indices in a complex social vulnerability index (SEVI). We applied spatial statistics tools of the OpenGeoda software for exploring geographic clustering of results. The study highlighted that social vulnerability is a major spatial urban process in Bucharest city, with a tendency toward extending clusters. The main result was a significant clustering pattern in the census units, with overlap among the clustering areas affected by high social vulnerability.

The results were constrained by some limitations of the methods used, analyzed in the last part of the study.