

# **Area neighbourhood models**

**Elzbieta Lewandowicz**

Department of Surveying, University of Warmia and Mazury in Olsztyn  
12 Jana Heweliusza St., 10-957 Olsztyn, Poland  
e-mail: leela@uwm.edu.pl

## **Abstract**

In GIS systems, the neighbourhood of areas within an analysed region is a term applied usually to raster-screened data. The aim of the study was to adapt this term to vector and descriptive data as well as to systemize models of so defined neighbourhood. The starting point was the assumption that the basic area neighbourhood model may be based on spatial data illustrated with a graph and described with a neighbourhood matrix. It provides the basis for building subsequent models, that are linked with the introduction of new neighbourhood measures, i.e. measures resulting from the characteristics of areas entered in tables of their attributes. Based on the proposed models, spatial analysis related to area neighbourhood can be performed and aggregate models, considered essential in multidimensional analysis of neighbourhood can be developed.