

dist.SM(clusterSim)

**Sokal-Michener distance measure  $d_{ik}$  for nominal data**

$$d_{ik} = \frac{\sum_{j=1}^m (1 - g_{ik}^{(j)})}{m} = \frac{m - m_r}{m},$$

where:  $i, k = 1, \dots, n$  – the number of object,

$j = 1, \dots, m$  – the number of variable,

$x_{ij}$  ( $x_{kj}$ ) –  $i$ -th ( $k$ -th) observation on  $j$ -th variable,

$$g_{ik}^{(j)} = \begin{cases} 1, & x_{ij} = x_{kj} \\ 0, & x_{ij} \neq x_{kj} \end{cases},$$

$m_r$  – number of variables where  $x_{ij} = x_{kj}$  (for  $i$ -th and  $k$ -th object).

**References**

- Gatnar, E., Walesiak, M. (Eds.) (2004), *Metody statystycznej analizy wielowymiarowej w badaniach marketingowych [Multivariate statistical analysis methods in marketing research]*, Wydawnictwo AE, Wrocław, p. 43.
- Kaufman, L., Rousseeuw, P.J. (1990), *Finding groups in data: an introduction to cluster analysis*, Wiley, New York, p. 28.