

index.H(clusterSim)

Hartigan index

(for metric data only)

$$H(u) = \left(\frac{\text{tr} \mathbf{W}_u}{\text{tr} \mathbf{W}_{u+1}} - 1 \right) (n - u - 1),$$

where: \mathbf{W} – within-group dispersion matrix,

u – number of clusters ($u = 1, \dots, n - 2$),

n – number of objects.

The estimated number of clusters is the smallest $u \geq 1$ such that $H(u) \leq 10$.

References

Hartigan, J. (1975), *Clustering algorithms*, Wiley, New York.

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Tibshirani R., Walther G., Hastie T. (2001), *Estimating the number of clusters in a data set via the gap statistic*, „Journal of the Royal Statistical Society”, ser. B, vol. 63, part 2, 411-423.