

Assessment of the Ecological Quality of the Green Patterns of 116 German Regional Cities by Using different Clustering Algorithms and the Hasse Diagram Technique

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Abstract. Urban green patterns can affect the eco efficiency of towns and cities. For hundreds of years, city planners have been using green open spaces as an integrated part of the urban fabric. They provide a background for recreational activities for which the built-up area does not have enough space. They also contribute to the quality of the environment in the broadest sense, as they regulate the extremes in urban temperature and filter air pollution through the leaves of their trees. Therefore the ecological quality of urban green patterns is an important item for monitoring, modelling and evaluation in the urban ecology. In this paper, we report on the analysis of spatial green patterns in 116 German Regional Cities by using different clustering algorithms (conventional and fuzzy clustering algorithms for example fuzzy-c-means, Gath & Geva, Gustafson Kessel) and Hasse Diagram Technique in order to assess the ecological quality of these patterns.

Key words: Urban Green Pattern, Ecological Quality, Cluster Analyses, Hasse Diagram Technique.

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