

The evolution of the commuting network in German market districts: Spatial and connectivity patterns

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Abstract

The analysis of the structure and evolution of complex networks has recently received attention. Although research on networks originated in mathematical studies dating back to the nineteenth century (or earlier), and developed further in the mid-twentieth century with graph theory, interest in its application to the social sciences is currently growing--partly due to regional science and transportation, because of the spatial relevance of networks. This paper provides a dynamic outlook for the German commuting network from the perspective of the German market districts. The focus of this paper is to explore how the German commuting network has evolved from two perspectives: space and connectivity. We consider home-to-work commuters between 439 German districts for the years 1995 and 2005. The results of the present study suggest it is possible to identify, among the main German districts, the most "open" and connected districts. Emerging districts can be considered as potential "hubs" in the German commuting system. Attractors from the perspective of spatial economics, and as interconnectors from the perspective of networking.

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