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Social networks and interactions in cities. (English) Zbl 1291.91179
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Based on graph-theoretical concepts, the authors study a population of agents who have social roles and locations in a geographic space. In the model, there are two locations called center and periphery. Given a cost of commuting from the periphery, each agent has to decide the frequency he wants to visit the center. Each visit results in an interaction, and the aggregate number of visits becomes a measure of interactivity. It is shown that the agents who are more central in the social network or are located closer to the center will choose higher levels of interactions in equilibrium. Hence, the overall interactivity will rise with the density of links in the social network and with the degree to which agents are clustered in physical space. It is also shown that the market equilibrium is not optimal because of social externalities by looking at the relevant subsidy. This paper provides a mechanism by considering both social mismatch and spatial mismatch.

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MSC:

[91D25](#) Spatial models in sociology
[91D30](#) Social networks; opinion dynamics
[05C90](#) Applications of graph theory

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[social networks](#); [urban-land use](#); [network centrality](#); [geographic space](#); [social mismatch](#); [spatial mismatch](#)

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