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Spatial versus social mismatch

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ABSTRACT

The aim of this paper is to provide a new mechanism based on social interactions, explaining why distance to jobs can have a negative impact on workers' labor-market outcomes, especially ethnic minorities. Building on Granovetter's idea that weak ties are superior to strong ties for providing support in getting a job, we develop a model in which workers who live far away from jobs choose to have less connections to weak ties. Because of the lack of good public transportation in the US, it is costly (both in terms of time and money) to commute to business centers to meet other types of people who can provide other source of information about jobs. If distant minority workers mainly rely on their strong ties, who are more likely to be unemployed, there is then little chance for them of escaping unemployment. It is therefore the separation in both the social and physical space that prevents ethnic minorities from finding a job.

1. Introduction

There is ample evidence showing that distance to jobs is harmful to workers, in particular, ethnic minorities. This is known as the "spatial mismatch hypothesis". Indeed, first formulated by Kain (1968), the spatial mismatch hypothesis states that, residing in urban segregated areas distant from and poorly connected to major centres of employment growth, black workers face strong geographic barriers to finding and keeping well-paid jobs. In the US context, where jobs have been decentralized and blacks have stayed in the central parts of cities, the main conclusion of the spatial mismatch hypothesis is that distance to jobs is the main cause of their high unemployment rates. Since Kain's study, hundreds of others have been conducted trying to test the spatial mismatch hypothesis (see, in particular, the literature surveys by Ihlanfeldt and Sjoquist (1998), Ihlanfeldt (2006), and Zenou (2008)). The usual approach is to relate a measure of labor-market outcomes, typically employment or earnings, to another measure of job access, typically some index that captures the distance between residences and centres of employment. The general conclusions are: (a) poor job access indeed worsens labor-market outcomes, (b) black and Hispanic workers have worse access to jobs than white workers, and (c) racial differences in job access can explain between one-third and one-half of racial differences in employment.

Despite this huge empirical literature, few theoretical models have been proposed (for a survey on the theoretical literature, see Gobillon et al., 2007; Zenou, 2006b, 2009). The standard approach is to use a search model to show that distant workers tend to search less (due to lack of information about jobs or less opportunities to find a job) and thus stay longer unemployed (Coulson et al., 2001; Wasmer and Zenou, 2002).[1]

In the present paper, we propose an alternative explanation. Building on Granovetter's (1973, 1974, 1983) idea that weak ties are superior to strong ties for providing support in getting a job,[2] we develop a model in which workers who live far away from jobs tend to have less connections to weak ties. As underscored by Granovetter, in a close network where everyone knows each other, information is shared and so potential sources of information are quickly shaken down so that the network quickly becomes redundant in terms of access to new information. In contrast Granovetter stresses the *strength of weak ties* involving a secondary ring of acquaintances

[1] See also Brueckner and Zenou (2003) for a model of spatial mismatch but without an explicit search model. In an efficiency wage model where, in equilibrium, no worker shirks, they show that housing discrimination can lead to adverse labor-market outcomes for black workers.

[2] In his seminal papers, Granovetter (1973, 1974, 1983) defines *weak ties* in terms of lack of overlap in personal networks between any two agents, i.e. weak ties refer to a network of acquaintances who are less likely to be socially involved with one another. Formally, two agents A and B have a weak tie if there is little or no overlap between their respective personal networks. Vice versa, the tie is *strong* if most of A's contacts also appear in B's network.

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who have contacts with networks outside ego's network and therefore offer new sources of information on job opportunities.[3]

Our explanation of the spatial mismatch is that distant (black) workers live in neighborhoods with closed networks that are limited in getting information about possible jobs. Because of the lack of good public transportation in the US, it is costly (both in terms of time and money) to commute to business centers to meet other types of people (weak ties) who can provide other source of information about jobs. If distant (black) workers mainly rely on their (black) strong ties and if the latter are unemployed, there is then little chance of escaping unemployment and finding a job. In other words, in our framework, ethnic minorities experience higher unemployment rate because they are *separated both in the urban and the social space*.

This is the first aim of our paper. The second aim is to provide a unified theory linking the urban and the social space. Indeed, social interactions are a key aspect of everyday's life. People interact with each other to exert social activities, exchange information about jobs, etc. These interactions, in particular in the labor market, tend to be localized. For instance, using Census Tract data for Chicago in 1980 and 1990, Topa (2001) finds a significantly positive amount of social interactions across neighboring tracts, especially for areas with a high proportion of less educated workers and/or minorities. Bayer et al. (2008) also document that people who live close to each other, defined as being in the same census block, tend to work together, that is, in the same census block.[4] In order to understand the interactions between the labor and the land market and the role of social networks, a model incorporating all these elements is needed. Indeed, households make trade-offs among the opportunity for social interaction, commuting costs, and housing costs in deciding residential location. This, in turn, affects their opportunities in the labor market. The second aim of this paper is therefore to develop a model where social interaction, labor and land market aspects are all explicitly taken into account.

To be more precise, we consider a dynamic model of the labor market in which dyad members do not change over time so that two individuals belonging to the same dyad hold a *strong tie* with each other. However, each dyad partner can meet other individuals outside the dyad partnership, referred to as *weak ties* or random encounters. By definition, weak ties are transitory and only last for one period. The process through which individuals learn about jobs results from a combination of a socialization process that takes place *inside* the family (in the case of strong ties) and a socialization process *outside* the family (in the case of weak ties).[5] Thus, information about jobs is essentially obtained through strong and weak ties and thus word-of-mouth communication.[6] Workers commute to a business center to work and to interact with other people. We find that housing prices increase with the level of social interactions in the city because information about jobs is transmitted more rapidly and, as a result, individuals are more likely to be employed and to be able to pay higher land rents.

We then extend this framework by endogenizing social interactions. We find that workers living far away from jobs pay lower housing prices but experience higher unemployment rates than those living close to jobs because they mainly rely on their strong ties to obtain information about jobs.

This last result is important because it allows us to provide a theoretical mechanism explaining why residents in certain neighborhoods may be stuck in high unemployment 'traps' since they mostly exchange information with their strong ties, who are themselves not likely to possess much useful information about job opportunities. Since most blacks in the United States tend to live further away from jobs (Ihlanfeldt and Sjoquist, 1998), then this model could explain why they have difficulty leaving unemployment. In our model, it is due to the fact that they mainly interact with their strong ties (other blacks) and very little with their weak ties (whites) so that their information about jobs is limited since blacks tend to be more unemployed and have poorer social networks than whites (see, e.g. Wial, 1991). This is related to Putnam (2007) who finds that higher levels of ethnic homogeneity are associated with higher level of trust.[7] In other words, blacks will not interact with whites (and vice versa) because they do not trust each other. In our framework, they do not interact with each other because they are physically separated and, as a result, it is too costly for blacks to interact with whites (weak ties). Dawkins (2006) underscores this result by noticing that social networks may also influence the rate of residential mobility, if households are reluctant to move away from particular locations when local social ties are strong. We assume that strong ties are always of the same race (family, best friends) and there is no spatial costs of interacting with them because they tend to live in the same neighborhood. On the contrary, weak ties can be of either race and meeting them implies a commute to the center of activities. Our main result shows that a separation in the physical space (due, for instance, to housing discrimination) can have dramatic consequences for blacks' outcomes. In other words, even if black and white workers are totally identical in terms of income, commuting costs, job-information rate, job-destruction rate, etc., then if blacks are separated from whites in the geographical space by living further away from jobs (*spatial mismatch*), they will also separated in the social space (*social mismatch*) and will therefore experience higher unemployment rates.

1.1. Related literature

There is a growing interest in theoretical models of peer effects and social networks (see e.g. Akerlof, 1997; Glaeser et al., 1996; Ballester et al., 2006; Calvó-Armengol et al., 2009), especially in the labor market.[8] However, few models of social networks in the labor market are dynamic. Montgomery (1994) and Calvó-Armengol et al. (2007) propose a dynamic model of weak and strong ties but the former focuses on inequality while the latter on the interaction between crime and labor markets. Zenou (2011) also develops a similar model of strong and weak ties but does not model the land/housing market. Calvó-Armengol and Jackson (2004) have a more general network analysis (since they can encompass any network structure) but do not model the urban space. To the best of our knowledge, there are nearly no theoretical papers in which social interactions in the labor market are embedded in an urban space.[9] An exception is Selod and Zenou (2006) but there is no explicit analysis of the social network.

[3] The existing empirical evidence lends some support to Granovetter's ideas. Yakubovich (2005) uses a large scale survey of hires made in 1998 in a major Russian metropolitan area and finds that a worker is more likely to find a job through weak ties than through strong ones. These results come from a within-agent fixed effect analysis, so are independent of workers' individual characteristics. Using data from a survey of male workers from the Albany NY area in 1975, Lin et al. (1981) find similar results. Lai et al. (1998) and Marsden and Hurlbert (1988) also find that weak ties facilitate the reach to a contact person with higher occupational status, who in turn leads to better jobs, on average. See Topa (2011) for an overview and Patacchini and Zenou (2008) who find evidence of the strength of weak ties in crime.

[4] See also Ioannides and Topa (2010).

[5] This idea was first put forward by Bisin and Verdier (2000, 2001) in the context of the transmission of a trait like, for example, religion or identity.

[6] Resorting to word of mouth and newspaper ads are two major job-search methods used by unemployed workers (see e.g. Holzer, 1987, 1988; Wahba and Zenou, 2005). Word of mouth, in particular, seems to be of crucial importance: almost 70% of the jobs obtained by white workers and almost 60% of those obtained by black workers are found by checking with relatives or friends or through direct application without referral (Holzer, 1987). For a summary of the evidence, see Ioannides and Loury (2004) and Topa (2011).

[7] Other studies have also found that socioeconomic diversity is associated with lower level of trust (Alesina and La Ferrara, 2002; Glaeser et al., 2000). See the literature review by Costa and Kahn (2003).

[8] See the excellent literature review by Ioannides and Loury (2004).

[9] See Ioannides (2012, Chapter 5) who reviews the literature on social interactions and urban economics.