



## Ethnic networks and employment outcomes

Eleonora Patacchini <sup>a,b,c</sup>, Yves Zenou <sup>c,d,e,f,\*</sup>

<sup>a</sup> Università di Roma "La Sapienza", Italy

<sup>b</sup> EIEF, Italy

<sup>c</sup> CEPR, United Kingdom

<sup>d</sup> Stockholm University, Department of Economics, 106 91 Stockholm, Sweden

<sup>e</sup> IFN, Sweden

<sup>f</sup> GAINS, France

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### ABSTRACT

This paper explores the relationship between residential proximity of individuals from the same ethnic group and the probability of finding a job through social networks, relative to other search methods. Using individual-level data from the UK Labour Force survey and spatial statistics techniques, we find that (i) the higher is the percentage of a given ethnic group living nearby, the higher is the probability of finding a job through social contacts; (ii) this effect decays very rapidly with distance. The magnitude, statistical significance and spatial decay of such an effect differ depending on the ethnic group considered. We provide an interpretation of our findings using the network model of Calvó-Armengol and Jackson (2004).

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## 1. Introduction

Networks of personal contacts mediate employment opportunities, which flow through word-of-mouth and, in many cases, constitute a valid alternative source of employment information to more formal methods. Such methods have the advantage that they are relatively less costly and may provide more reliable information about jobs compared to other methods. The empirical evidence reveals that around 50% of individuals obtain or hear about jobs through friends and family (Granovetter, 1974; Corcoran et al., 1980; Holzer, 1988; Montgomery, 1991; Gregg and Wadsworth, 1996; Addison and Portugal, 2002; Ioannides and Loury, 2004; Wahba and Zenou, 2005; Goel and Lang, 2009; Ioannides and Topa, 2010; Pellizzari, 2010; Topa, 2011). The recent study by Bayer et al. (2008) documents that people who live close to each other, that is, in the same census block, are more likely to work together than those in nearby blocks. Do these (positive) effects extend to ethnic groups in the labor market?

Because usually ethnic minorities experience higher unemployment rates, one may think that ethnic enclaves may be harmful to labor-market outcomes of minorities. Indeed, having fewer connections to employed workers makes it more difficult to receiving information about jobs and therefore reduces the chance of obtaining a job (see, e.g., Hellerstein et al., 2008).

On the other hand, the hiring of new workers via employee referral is supposed to be important for understanding ethnic divisions of labor because it creates a built-in bias toward incumbents: members of a particular ethnic group concentrate in specific jobs and when new employment opportunities become available at their workplace, they pass this information along to social contacts, often of the same race and ethnic background.

For the US, some evidence can be found in Conley and Topa (2002). They examine the spatial distribution of unemployment in Chicago using different social and economic distance metrics. Their results indicate a clear dominance of the racial/ethnic distance metric and of the racial/ethnic composition variables in explaining the spatial correlation of unemployment. More direct evidence can be found in Falcon (2007) and Falcon and Melendez (2001). They show that Latinos in Boston are more likely to use personal networks to gain employment relative to other job search methods. Elliott

\* Corresponding author.

E-mail addresses: [Eleonora.Patacchini@uniroma1.it](mailto:Eleonora.Patacchini@uniroma1.it) (E. Patacchini), [yves.zenou@ne.su.se](mailto:yves.zenou@ne.su.se) (Y. Zenou).

(2001) finds that Latinos, especially newly arrived immigrants, are more likely than native-born Whites to enter jobs through insider referrals. He also finds that the correlation between insider referrals and ethnically homogeneous jobs is positive and significant only for native-born Blacks. Mouw (2002), using longitudinal data, finds that Black workers who used personal contacts to find employment did no worse compared to where they used formal methods. Munshi (2003) attempts to identify network effects among Mexican migrants in the U.S. labor market and to test whether the network improves labor market outcomes for its members. He finds that the same individual is more likely to be employed and to hold a higher paying non-agricultural job when his network is exogenously larger.

There are very few papers investigating this issue for Europe. Exceptions include Frijters et al. (2005) and Battu et al. (2011), both for the UK. They find that, though personal networks are a popular method among ethnic minorities, they are not necessarily the most effective method in finding a job. Using data on both legal and illegal migrants in eight Italian cities in 2009, Boeri et al. (2011) show that residential segregation can be harmful to employment when the fraction of migrants is above 15–20% of the total local population.

In this paper, we look at the acquisition and transmission of job information by job seekers through their social contacts. We first present as a theoretical background the dynamic model of Calvó-Armengol and Jackson (2004) who explicitly model social networks as graphs. If workers are linked to each other, then they exchange information about jobs. Strong ties are direct friends while weak ties are friends of friends of any length (Granovetter, 1983; Calvó-Armengol et al., 2007; Patacchini and Zenou, 2008). In this framework, the individual probability of finding a job increases with the number of strong ties and weak ties. However, the farther away is a weak tie, the lower is the individual probability of finding a job.

A precise test of this model requires detailed information on all social contacts between individuals over time, which is unfortunately not available. However, one can use this mechanism and approximate the *social proximity* by the *geographical proximity*. Since ethnic communities tend to be more socially cohesive, a reasonable conjecture is that the density of people living in the same area is a good approximation for the number of direct friends one has, i.e. *strong ties*, especially if the areas are not too large and if people belong to the same ethnic group.<sup>1</sup> In the same spirit, the density of individuals living in neighboring areas will be a measure of friends of friends, i.e. *weak ties*. Ethnicity is thus the chosen dimension along which agents' social contacts develop. Using this framework, one can thus look at the relationship between ethnic employment density and the probability of finding a job through social contacts and use *spatial data analysis techniques* to investigate the spatial scale of the effects. We collect some evidence for Europe, where these issues are scarcely investigated.<sup>2</sup>

Consistently with the theoretical model, we find that the higher is the percentage of a given ethnic group living nearby, the higher is the probability of finding a job through social contacts. We also find that such an effect is, however, quite localized. It decays very rapidly with distance, losing significance beyond approximately 60 min travel time. One possible concern in our analysis is that these correlations capture the effects of *unobserved characteristics* of areas highly populated by ethnic minorities that also affect job search methods, such as tastes for discrimination, spatial mismatch, etc. Our qualitative results remain unchanged if we instrument the contemporaneous level of ethnic population density with its value lagged in time. As labor market conditions evolve over time, our assumption is that the factors that influenced the pattern of settlement of ethnic minorities in the

past are unrelated with employment prospect today, apart from their effect through present-day ethnic population density.<sup>3</sup>

Our results can be understood within the more general existing literature on the *cumulative causation* of immigrant inflows where not only employment outcomes but also geographic origin is shared by immigrants in the same national group living in proximity. Social scientists have indeed long noted that international migration is characterized by a strong internal momentum: once a particular migration stream has been initiated, it tends to persist and grow over time and often in the same location. This is referred by sociologists to as a process of "cumulative causation" whereby social networks connecting migrants to nonmigrants make the process of migration "self-perpetuating" (Walker and Hannan, 1989; Massey, 1990). Massey and Espinosa (1997) have suggested that the persistence of migration in space and time stems from two fundamental processes: human and social capital accumulation. The former operates among individuals and the latter through the social networks in which they are embedded. Massey and Zenteno (1999) postulate that each act of migration creates social capital among those to whom the migrant is related. Once someone migrates, the costs and risks of international movement fall for that person's friends and relatives, inducing some of them to migrate, which further expands the network of people with ties to migrants, yielding more social capital, which induces new people to migrate, further expanding the network, and so on. The steady accumulation of social capital through the progressive expansion of interpersonal networks yields another powerful feedback loop that results in the cumulative causation of migration over time.<sup>4</sup>

There is also an important literature in economics on the importance of networks for outcomes such as the probability of immigration and the location decisions of recently-arrived immigrants. For example, using the 1990 Census data, Card (2001) studies the effects of immigrant inflows on occupation-specific labor market outcomes. He finds that *intercity mobility rates* of natives and earlier immigrants are insensitive to immigrant inflows. However, occupation-specific wages and employment rates are systematically lower in cities with higher relative supplies of workers in a given occupation. Using variation in the fraction of immigrants across different cities, Altonji and Card (1991) study the effects of immigration on the labor-market outcomes of the less-skilled natives. They find that a one percentage point increase in the share of immigrants in a city generates a 1% increase in the supply of labor to industries in which less-skilled natives are employed. More recently, Munshi and Wilson (2011) examine the role played by local identity, or the attachment to a home-town, in restricting occupational choice and mobility. They find that the effect of historical competition on participation in socializing institutions (such as churches and parochial schools) grows stronger over the course of the twentieth century, emphasizing the idea that small differences in initial conditions can have large long-term effects on institutions and economic choices.

Our analysis helps understand the role of local ethnic social networks on labor-market outcomes of workers from the same ethnicity and more generally how ethnic enclaves and the "cumulative causation" of immigrant inflows work in the real world. Remarkably, we find that these network effects are very localized and work differently depending on the ethnic group studied. For instance, we find that the employment status of a Chinese immigrant is strongly correlated with the size of the Chinese population living in proximity, as opposed to the size of the Pakistani population also living in proximity, or to the size of Chinese immigrant communities living in another town. Interestingly, no statistically significant effects are found for Indian and Pakistani workers. As mentioned above, our analysis has, however, some limitations, mainly because the individual social contacts (i.e. the exact social network topologies) are not known. As a result,

<sup>1</sup> A similar approximation of the social space (approximated by the physical space) is used in Wahba and Zenou (2005) for the case of Egypt.

<sup>2</sup> Although immigration-related issues are now at the forefront of the political debate in Europe, detailed data on ethnic minorities are still not available (see, e.g., Bisin et al., 2011).

<sup>3</sup> Such an approach has also been used by Rice et al. (2006).

<sup>4</sup> See Massey et al. (1998) for a review of this literature.

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