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some empirical findings*

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The dynamics of innovation in job search strategies: some empirical findings

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Abstract

We construct a database from the first 2011 wave of the Portuguese Labor Force Survey and analyze the transitions between labor market states and job search methods during six quarters. In Portugal, the individuals who use more formal job search methods are more likely to get a *stable* state of employment, while informal contacts, private agencies or newspaper adverts tend to lead to a permanent state of job seeking.

Keywords: Labor market dynamics; Networks;

1 Introduction

The importance of non-market interactions has been increasingly recognized in a variety of contexts. In the field of labor economics, there exists vast theoretical literature that examines the role of social networks in labor market dynamics. [Calvó-Armengol and Jackson \(2004\)](#) construct a model where it is shown that if social ties are important then one should observe negative duration of exit rates from unemployment. [Topa \(2001\)](#) formulates a model of local interactions in the labor market and concludes that agents are more likely to transmit useful information about jobs if they themselves are employed, which generates positive spacial correlations of unemployment. In a similar way, [Bramoullé and Saint-Paul \(2010\)](#) argue that a bond between an employed and an unemployed worker increases the unemployed's likelihood of finding a job, but is less likely to arise than between two employed workers.

A recurrent issue in this literature is why firms would wish to recruit workers through informal channels. Two main arguments are frequently reported. First, it is inexpensive and social networks operate as devices to narrow the number of applicants to manageable proportions, rather than other formal means. Second, they serve as useful screening devices. It is a well established fact in social network literature that social ties tend to occur among persons with similar attributes (see [Granovetter, 2005](#)). Given a labor market characterized by adverse selection, employers will thus solicit referrals from high-ability employees. Additionally, an employee will refer only well-qualified applicants since his reputation might be at stake. Under this assumption, [Montgomery \(1991\)](#) develops a model where it is shown that workers hired through social networks are of higher quality, receive higher wages and have lower rates of quitting.

On the empirical side, little work has tried to confront these results with real data. In this paper, we attempt to confront these findings with real data taken from the Portuguese Labor Force Survey. We examine the search methods used by job seekers and their labor market state across six quarters through a network explicit network structure.

2 Data

The Portuguese LFS is a CPS-type household survey conducted by the *Instituto Nacional de Estatística* (INE). The structure of the survey follows the instructions of Eurostat, making the definitions identical to those in other European countries. It includes around 40 000 individuals quarterly, which are interviewed for six consecutive quarters, such that each quarter $1/6$ of the sample is rotated out and $5/6$ of the sample is retained, allowing us to observe the labor force state and other characteristics in the quarter $t - 1$ and t for $5/6$ of the individuals.

The survey reports the strategies used by the respondents to find job. These are:¹

1. Contacted public employment office
2. Contacted private employment agency
3. Applied to employers directly
4. Asked friends, relatives, etc
5. Inserted or answered advertisements in newspapers or journals
6. Studied advertisements in newspapers or journals
7. Took a test, interview or examination
8. Looked for land, premises or equipment
9. Looked for permits, licences, financial resources.

The individuals may report more than one job search method in each of the six quarters. The structure of this database allows us to track during six quarters the method or the combination of job search methods . We used the first wave of 2011.

3 Method

The information on each individual is coded by a string of 10 bits where each bit identifies the choice (by the individual) of a given strategy and the bit position identifies the strategy itself. For instance, the bit string:

0 0 0 0 1 1 1 0 0 0

represents an individual who adopted the following strategies:

- Inserted or answered advertisements in newspapers or journals
- Studied advertisements in newspapers or journals
- Took a test, interview or examination

Every existing strategy is consider a specic state of the labor market. The dynamics of the model is characterized by the evolution of the individual strategies (market states) along successive quarters. The basic driver of the dynamics of the model is twofold:

- Following the characteristics of the transitions between the labor market states.
- Characterizing the matching between individual strategies.

¹See [Eurostat \(2013\)](#), pp.24-25.

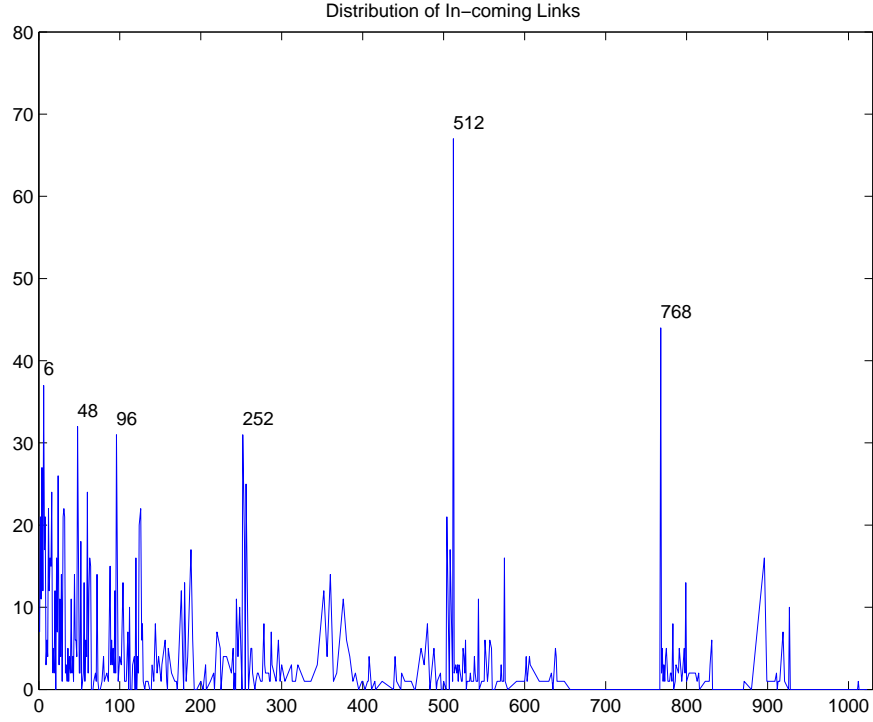


Figure 3.1: Distribution of the in-coming links across quarters

4 Results

The main results are:

- As Figure 3.1 depicts, during the six quarters the following in-coming states have the higher frequency: 512 (employed not searching), 768 (employed still searching through a public office) and 896 (employed still searching through a public office or a private agency).
- Those who use more formal means (methods 1 and 5 to 9) seem more likely to move to a *stable state*: employment without being simultaneously searching for another job (Figure 4.2).
- In turn, the usage of the previous methods jointly with contacts with a private employment agency (method 2) leaves workers in a state of employment but still seeking job through a public employment office (Figure 4.3).
- Similarly, the usage of informal contacts (method 4) and newspaper adverts (method 5) leads to state of employment and simultaneous job search through a public office and a private agency (Figure 4.4).

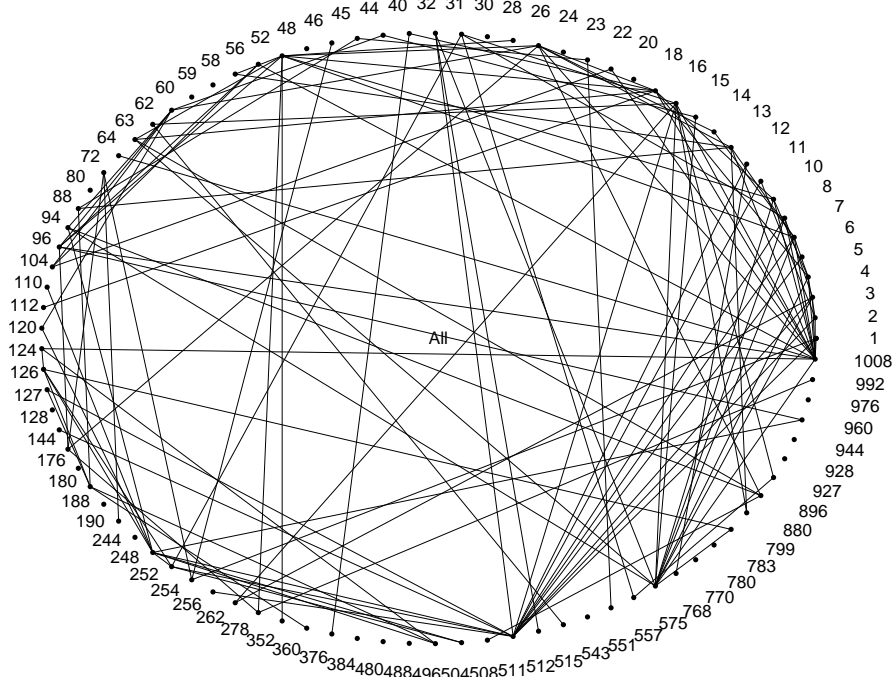


Figure 4.1: Network of transitions between labor force states and job search methods across the six quarters.

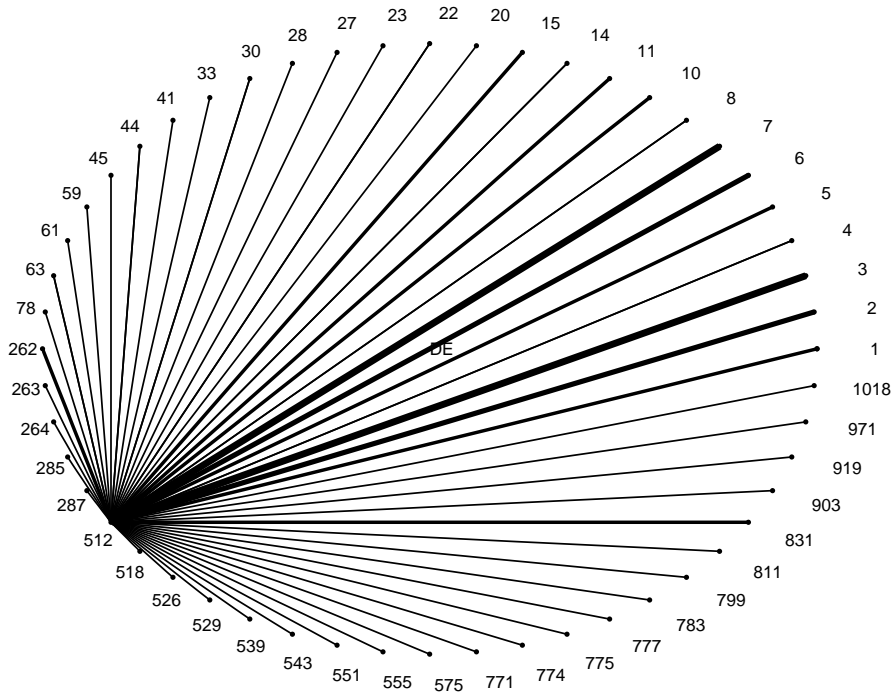


Figure 4.2: The focus (node 512) is the second link with a higher frequency (Figure 3.1) and denotes employed individuals not searching for a job, which can be viewed as a stable state of employment. To move to this state, the job search methods more efficient seem to be 1 and 5 to 9.

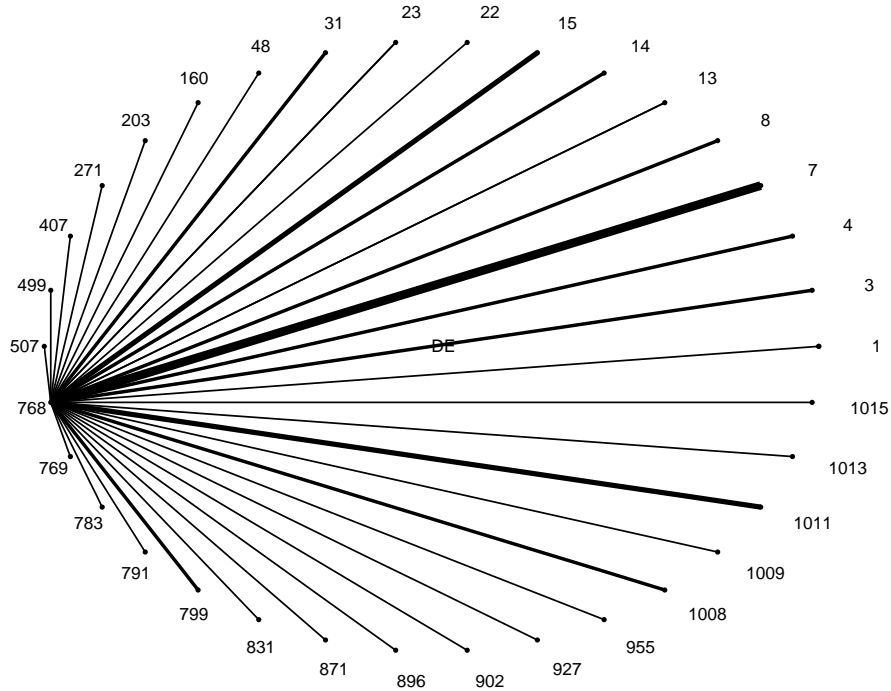


Figure 4.3: The focus (node 768) is the second link with a higher frequency (Figure 3.1) and denotes employed individuals that keep searching for a job through a public employment office. Besides the previous methods, method 2 (contacted private employment agency) emerges in high-intensity preceding states.

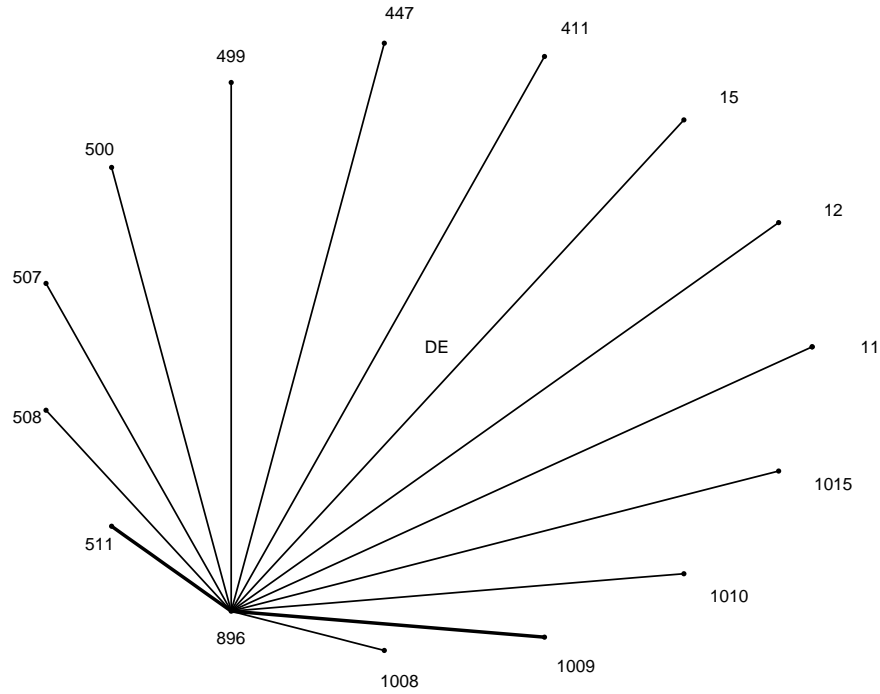


Figure 4.4: The focus (node 896) is the third link with a higher frequency (Figure 3.1) and denotes employed individuals that keep searching for a job through a public employment office or a private employment agency. The job search methods preceding this state are mainly method 4 (informal contacts) and method 5 (advertisements in newspapers or journals).

5 Discussion and conclusions

Previous research highlighted the importance of informal contacts in job search. We construct a database from the first 2011 wave of the Portuguese Labor Force Survey and analyze the transitions between labor market states and job search methods during six quarters.

In Portugal, the individuals who use more formal job search methods are more likely to get a stable state of employment, while contacts informal contacts, private agencies or newspaper adverts tend to lead to a permanent state of job seeking.

Further research should be done to clarify certain remaining issues. It would be worthwhile:

- analyze the data from the youth cohorts;
- study the relative important of each method among occupations and educational level of workers.

Continued interdisciplinary research on job search methods and networks might provide new insight of labor market mechanisms.

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