



# Public transit and labor market outcomes: Analysis of the connections in the French agglomeration of Bordeaux <sup>☆</sup>



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## ABSTRACT

This paper investigates the links between public transport and labor market outcomes in the French agglomeration of Bordeaux. Our objective is to analyze the effects and consequences of the construction of a tramway line in some neighborhoods and municipalities of the agglomeration. These localizations are confronted to isolation and concentration of unfavorable socio-economic characteristics. Among other things, this line has permitted to facilitate the access to the historical job center of Bordeaux for inhabitants concerned. We use difference-in-differences methods to compare labor market outcomes of inhabitants who benefit from this better access with others who do not, before and after the construction. Results show that if unemployment rate has globally decreased on the period observed, the decrease is more important for neighborhoods located close to tramway stations. More generally, it seems that the tramway project helped to reduce some socio-economic inequalities in the agglomeration of Bordeaux.

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## 1. Introduction

Since the late 1970s, unemployment in France reached record levels. Such a situation was favorable to the development of many works in labor economics. On the whole, these works are distinguished by the way they try to explain unemployment. Some emphasize on the role of individual characteristics during the job search process. Some others are mainly focused on the effect of public policies or the role of institutions. A third way links unemployment to spatial organization of a given area. Several mechanisms or hypotheses are often mobilized in order to explain unemployment rate in a region, a town or a neighborhood.

A large part of literature in urban economics retains the role of physical disconnection between place of residence and job centers. This phenomenon named as *Spatial Mismatch* is firstly introduced by Kain, in 1968. The author argues that being disconnected from jobs (or living far away from them) can have some important consequences on the unemployment process (Kain, 1968, 1992). On the whole, this literature identifies two broad channels linking the *Spatial Mismatch Hypothesis* to the bad labor market situations of a part of the inhabitants (Arnott, 1998). The first channel is given by commuting costs. A physical disconnection between working place and residence place can lead to substantial commuting costs as most

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suburban locations do not have an appropriate public transportation system. In this case, workers face costs that are often too important in comparison with the salary they are offered (Coulson et al., 2001). The second channel is given by different features of the job search process. First, a worker residing far away from job opportunities may encounter some difficulties in obtaining information on jobs (Rogers, 1997). Simpson (1992) argues that metropolitan areas consist in a series of “islands” with information about job opportunities, which is free within islands but has a cost among islands. In these conditions, searching a job far away from the residence area can be too costly. Jobseekers search efficiently only in a restricted area, near their residence, even if there are only poor-quality jobs (Davis and Huff, 1972; Ihlanfeldt and Sjoquist, 1990, 1991).

In this paper, we examine the connections between public transit and unemployment in the agglomeration of Bordeaux. Our approach is somewhat similar to those of Holzer et al. (2003), as we want to analyze the effect of implementation of the tramway on labor market outcomes of inhabitants located in neighborhoods that are distant from the historical job center. We focus on a tramway line making the junction between the two banks of Bordeaux, separated by the Garonne. The line was introduced and developed in order to reduce economic and social disparities between the two banks of the Garonne. Indeed, a number of neighborhoods and municipalities from the right bank were characterized by a physical disconnection to the agglomeration center located on the left bank, a concentration of social housing and a concentration of fragile populations on the labor market.

For our empirical analysis, we use French population census of 1999 and 2006, which correspond to periods before and after the introduction of the tramway line in the agglomeration of Bordeaux. In this way, it is possible to see if this public transport policy helped to improve situation on the labor market of a part of the inhabitants and to reduce inequalities between the two banks. Concretely, we first compare labor market outcomes of inhabitants of some neighborhoods located on the right bank. Some of them benefit from the implementation of the line, because they have access to tramway stations, while others do not. Then, we also compare labor market outcomes of inhabitants on the left bank to outcomes of inhabitants on the right bank. These strategies permit us to check if the tramway helped to reduce unemployment inequalities between the historical center of the agglomeration and the right bank.

The remainder of the paper is organized as follows: a literature review of various empirical works analyzing the links between accessibility to jobs and labor market outcomes is presented in Section 2. The public transport policy examined and its context are described in Section 3. The data mobilized, the method retained and the econometric strategy are presented in Section 4. Results are presented in Section 5. Conclusions and recommendations are suggested in Section 6.

## 2. Literature review

Since Kain's pioneering work on the effects of disconnection from jobs in 1968, much empirical research has been conducted<sup>1</sup>. Many works analyze to what extent neighborhood's job accessibility can explain employment probability or labor market outcomes of individuals. Some others are focused on the links between individuals' mobility and labor market outcomes as they analyze to what extent car ownership or access to public transport can improve job search process.

### 2.1. The links between accessibility to jobs and unemployment

In his seminal paper, Kain (1968) tries to explain the high unemployment rates observed for black people in Chicago and Detroit. He observes that the bad labor market outcomes of this category are explained by an unfavorable location of employment. Residential segregation is seen as the principal cause as it tends to move away black people in neighborhoods with poor job accessibility. Ihlanfeldt and Sjoquist (1990) analyze the links between proximity to jobs center and employment probability for young people in different American cities, whether they are black or white. Results show that not living far away from jobs has positive effects on employment. From data on Pittsburgh and Chicago, Rogers (1997) and Immergluck (1998) show respectively that vicinity to jobs centers is an important determinant of unemployment duration or employment rates. More recently, Weinberg (2000, 2004) and Martin (2004) find that black residential centralization is an important determinant of black employment status in metropolitan areas and that job centralization increases black employment rates relative to whites. Covington (2009) proposes a different analysis. Using U.S data for the 1990s, his results defend the idea that decentralization of jobs hurts the job access of most workers and especially the poor workers. Indeed, it appears that the poor are much more physically isolated from employment than are the non-poor.

Even though most analyzes were conducted in the U.S., some authors have studied this relationship in European countries. For the French case, Bouabdallah et al. (2002) show that the enlargement of the prospected area for jobs tends to decrease unemployment duration. The increase of job opportunities, allowed by such an enlargement, seems then to overcome the costs of searching further. The work of Matas et al. (2010) supports the hypothesis that job accessibility, by public transport, is a significant determinant of female employment probability in the metropolitan areas of Madrid and Barcelona. Analyzing a Swedish refugee dispersal policy, Aslund et al. (2010) find that the fact of having been placed in a location with a poor job access plays negatively on labor market outcomes of individuals (it decreases employment probability and annual earnings).

<sup>1</sup> Various papers provide literature review of the *Spatial Mismatch Hypothesis*. We can cite: Holzer, 1991; Kain, 1992; Ihlanfeldt and Sjoquist, 1998; Gobillon et al., 2007.

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