

***The impact of spatial factors on female exclusion from the labor market:  
empirical evidences from South of Italy***

by

Federica D'Isanto, Giorgio Liotti & Melania Verde

**Abstract**

The existence of a gender discrimination in the access to the labor market is one of the most important issue in labour economics. Many researchers have focused on social and family context as main determinants that contribute to exacerbate the problem of labour market gender discrimination. However, the gap between men and women regarding the access to the labor market could depend also on spatial factors. In this paper we test whether and what extent spatial factors feed the gender discrimination in the access to the labour market. Using a probit model and data on women and men resident in Calabria region, we controlled for a set of individual and social variables. The results show that the lack of an adequate public transport reduces the probability of women to get a job, contributing to their exclusion to the labour market.

**Keywords:** *social segregation; urban segregation; pre-labor market discrimination; female unemployment.*

**JEL classification:** J16, J71, C25

## **1. Introduction. The social exclusion, the gender pre-labour market discrimination and the gender discrimination in the labour market.**

The new condition of fragmentation and increasing complexity of the contemporary city is leading to “...rather pathological situations of uncertainty, reduced transparency, inadequacy – concerning both the system on the whole and its individual actors – which impairs the spatial mobility of the users for whom the access-fruiting times to services have become longer, generating new forms of exclusion...” (Nuvolati, 2007), particularly *social exclusion*.

The expression ‘social exclusion’ was first developed by Lenoir (1974), complementary to the framework of labor market discrimination earlier developed by Becker (1957). Social exclusion is a process by which individuals, groups and communities are increasingly marginalized from the access to health and education services, the labor market etc. (Mosse, 2007; Tilly, 2007).

Social exclusion is related to the combination of a number of factors, such as: unemployment, dequalification, low income situations, unsuitable living conditions, high environmental criminality, bad health conditions, and family disintegration.

The population segment which is most involved is composed of low income, elderly, motor impaired people, as well as women and ethnic and cultural minorities. As for women, the ancestral challenge of work-life balancing resulted – especially in many areas of economically marginal regions – in giving up any working aspiration.

Considering the social segregation from a woman’s point of view, it is observed that women are one of the most at-risk sectors in society today. This is even more evident if we take into account the aspects related to employment and their difficult access to decent work. The main critical points are: horizontal segregation (difficult access to the labor market and consequent concentration within certain occupational sectors), vertical segregation (difficult access to leading roles with consequent concentration within the lowest hierarchical levels) and income inequality (Bergman 1974; Polacheck & Salomon 1981; Anker 1997; Bettio 1990; Bettio & Veraschagina, 2008).

Segregation levels, as well as the risk of exclusion/marginalization from the formal labor market, rise if we take into account the education, training and advanced training paths from which women are frequently ruled out. Also, labor policies have registered a significant participation of women in submerged economy. In brief, the lack

of employment, the difficult conciliation of family life with the city times, the gender segregation, all contribute to increasing the risk of women's poverty and exclusion, not only from employment, but also from cultural consumption, access to credit, property, service fruition, social protection systems and the opportunity to plan their own future.

Within the social exclusion aspects, it is crucial to consider the life quality elements, interpersonal interactions, community involvement, personal factors and opinions. The worst employment perspectives within neighborhoods which are often unsuitably served by public transport and local infrastructure, with decaying buildings and bad environmental conditions, also create social problems and serious tensions. Such neighborhoods, basically excluded from the major social and economic development, become, as a matter of fact, urban areas where social and gender segregation is fostered in the labor market.

Exclusionary processes can have various dimensions (political, social, economic and cultural); this study is focused on *economic exclusion*. In this area, gender marginalization is seen under different aspects, such as the lack of access to labor market.

The issue of gender discrimination in the labor market has been highly investigated in the economics literature (Becker 1957; Cain 1986; Oaxaca & Ransom 1994; Black 1995; Flabbi, 2009). In particular, gender inequality mostly refers to disparities concerning the "access to the labor market" and the "gender wage gap" (Becker, 1985; Lazear & Rosen, 1990; Mavromaras & Kanellopoulos 2002, Browne, 2005; Addabbo & Favaro 2007; Pouliakas & Livanos 2008; D'Isanto, 2013). In fact, women encounter more difficulties accessing the labor market (and, once they are inside, they are mostly concentrated in low-paid sector). The higher concentration of women in particular sectors (such as social services, government, education) increases women labor supply thus reducing salaries (horizontal segregation explaining the issue of the gender wage difference). In 2015, the European Union reported a gender wage gap with men earning on average 16% more than women, and over the last decades, the European Commission has shown a strong interest on how to improve policies in order to equate earnings among women and men. Women hold jobs that are typically female and this offers fewer career opportunities; in their career progression, they are under-represented in managerial occupations (vertical segregation).

These phenomena are due to several reasons: cultural and social background, urban environment, labor market and pre-labor market conditions.

The traditional literature on gender inequality has studied mainly the theme of discrimination in the workplace, in the labor market (Becker, 1985; Altonji & Balank, 1999). The presence of sex discrimination in employment has placed particular emphasis on the exclusion, or restriction, based on socially constructed gender roles (Rubery, Bettio, Fagan, Maier, Quack & Villa, 1997). In other words, women's and men's chances of being attracted/rejected are determined by the characteristics attributed to each sex (Aalto & Mills, 2006): women are responsible for the household and family, the biological reproduction process of having and raising children, and workforce reproduction (taking care of the working partner). Women are thus more likely to be employed in jobs that are compatible with these roles (part-time jobs, for example).

The present work, instead, deals with the *gender discrimination in pre-labor market*. Pre-market discrimination refers to discrimination regarding a series of characteristics achieved before entering the market; it can affect a worker via low health and education levels, family finances, etc. (family background), impoverished neighborhoods, unequal schooling systems, etc. (social background).

The aim of this paper is to investigate the effects of the "social background" on economic exclusion of women in their access to the labor market. In particular, the effects of spatial organisation (*or residential segregation*) on unemployment tendencies were analyzed. Essentially, we tried to answer the following question: *What is the role of spatial factors in explaining gender unemployment probabilities?*

This paper contributes to the current literature because the issue of how 'space' or 'location' might themselves cause gender unemployment and discrimination has often been overlooked by economists. The analysis on gender discrimination (in labor market and pre-market) was carried out in a non-spatial framework.

The spatial organization of cities is an emerging key question, which will be crucial in the definition and implementation of both urbanistic and social policies in order to reduce the gender discrimination in employment.

Within this perspective, attention should be paid to segregation as a result of discrimination processes on a larger scale, particularly in the labor market and citizenship rights which promote urban contexts more and more socially divided, with consequent urban transformations which are increasingly leading to radical changes in the daily life organization with serious repercussions on the life quality and especially on urban life (Musterd, 2003).

Also, it is important to remind that segregation situations and discrimination

behaviors entail the existence of an unexploited economic growth potential, not only in terms of human resources but also in terms of economic and social relationships.

Bringing back women into social and economic structures of society, starting from the opportunity for them of finding a suitable job, having access to services and education, is one of the critical elements of active labor policies as well as a key factor for social inclusion and cohesion.

## **2. The urban factors as determinants of gender pre-labour market discrimination**

An abundant literature in sociology and urban economics, however, suggests that the spatial organization of cities can exacerbate pre-market discrimination among disadvantaged communities, through the physical disconnection from jobs (Gobillon et al., 2007); the residential segregation and the quality of the social environment affect individual socioeconomic outcomes, such as human capital (Bénabou, 1993). In theory, there are several mechanisms according to which the distance from job opportunities can be problematic. One important mechanism is that job-seekers (especially poor women) residing in areas disconnected from job opportunities are likely to reject job offers if commuting costs are too high in view of the offered wages (Brueckner and Martin, 1997). In particular, the “cost of transportation” to the city commercial centre plays a key role in affecting women’s entry into self-employment (Glick, 1999). Poverty (social exclusion) appears to be a defining factor of mobility and accessibility. The concepts are related, but readily distinguishable. “Mobility” is defined as ease of movement; “accessibility” is defined as ease of reaching destinations, it refers to people’s ability to reach goods, services, activities, job opportunities and therefore the time and money that people must devote to transportation (Hansen 1959; Engwicht 1993). Accessibility in urban areas is an important facilitator for growth and employment. However, Grieco (2003) notes that social exclusion and accessibility research (through their urban forms and transport systems) remains relatively weak.

The quality of accessibility has tremendous direct and indirect impacts, in this paper, we consider the women’s probability of being employed. Many factors affect accessibility, including mobility (physical movement), cost of transportation, the quality and affordability of transport options (public and private), efficient public transport system, transport system connectivity, density of paths and roadway connections, mobility substitutes, comfort and

safety.

A poor access to transport resources and the resultant time-poverty circumscribes employment options at shorter distances from home. Kwan (1999) restates the evidence that women have restricted space-time accessibility compared to men because they spend more time on household maintenance activities and they have less time for travel than men. Women's trip scheduling and chaining also tends to be more complex than men, especially if there are dependent children in the home, creating more spatio-temporal constraints on their activity participation (Gordon, Kumar and Richardson 1989). Many studies show that poor women spend more time travelling on slower modes of transport (on foot for example) to access work (Anand and Tiwari, 2006; Srinivasan 2008; Tanzarn 2008). Women, especially those in the lower income bracket, they have not a private means of transport, they are less likely to own a vehicle or have a license to drive it. And with restricted access to automobiles, women's daily mobilities emerge and give rise to a differentiated labour market and personalised space-time opportunities.

Another mechanism is that workers' job search efficiency may decrease with distance from jobs since it is obviously more difficult to search far away from one's place of residence (Wasmer and Zenou, 2002). Child care obligations can require low-income women to seek employment closer to home than men (Chapple 2001). The intensity of the search effort may also decrease with distance from job opportunities — for instance, workers residing far away from job centres face lower rents and thus feel less pressured to find a job quickly (Smith and Zenou, 2003). Similarly, high search costs may also deter workers from searching. Finally, firms could discriminate against distant workers — for instance, if distance makes them less productive because of long and tiring commutes (Zenou, 2002). General empirical tests confirm that the disconnection between places of residence and job locations exacerbates unemployment (Weinberg, 2004, Martin, 2004).

Other works focused on the role of residential segregation and, more generally, on the impact of the social environment on individual socioeconomic outcomes. In this respect, several mechanisms can account for an adverse effect of residential segregation, either directly on unemployment, or indirectly through low employability. One mechanism is that residential segregation can be a hindrance to human capital acquisition: in neighborhoods which concentrate low ability students, human capital externalities can lower school achievements and employability (Bénabou, 1993). Social problems which reduce the employability of

workers can also spread through neighborhood interactions

### **3. Data. The Urban segregation: the case of Calabria**

The cross sectional data used in this study was collected through face to face interviews from a sample of 9.708 observations from Calabria, South of Italy. The Region of Calabria sponsored a very interesting analysis of segregation in the metropolitan area of Reggio Calabria<sup>1</sup>, which was chosen because it is characterized by the lowest employment rate in the European Union, specifically, female employment rates are particularly low (Eurostat); its main problem is unemployment as well as the lack of infrastructure (in particular, transport infrastructure). The Calabria is a region characterized by low-density (inhabitants/sq. Km 133), it has around 2 million inhabitants in an area of 15,000 square km (Istat). A number of neighborhoods are very far from the traditional points of active socialization and access to services. The private transport is the dominant form of transportation in the region. The empirical evidence of an association between “low-density” settlement patterns and a high reliance on automobiles on the one hand and between “high-density” environments and more transit use on the other is firmly established. The higher the density, the higher the transit use. However, variables other than density – culture, household income, the design and location of transit lines, the management efficiency of transport companies, government transport policies, including subsidies – certainly also influence transit use. The relationship between density and transit use in various cities of the world has been documented by Newman and Kenworthy (1989) and Kenworthy and Laube (1999). Therefore, access to automobiles is essential for labour force participation (Burns 1996; Uteng 2006).

This survey includes a Form of First Contact for the measurement and quantification of the needs in order to reveal and examine the socio-demographic characteristics and the main needs of the individuals involved, especially those at risk of social exclusion (about 80% of them stated that they were unemployed). The data showed that the different types of spatial segregation are very present in Calabria, which is a medium sized city (Critelli, Musella, 2016).

The survey included a question about the environment where the interviewees

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<sup>1</sup> Project “Measurement of the Opposition to the Social Segregation in Urban Area” sponsored by the “Regione Calabria” with FSE funds to the Fondazione Calabria Etica.

lived. The place where they lived was interpreted in a more widely accepted sense: they tried to reveal not only variables as the existence of infrastructures, such as facilities and services (social characteristics) but also variables connected to criticalities as pollution, dirt, noise and inadequate lighting (physical characteristics). In addition to the existence of these characteristics, data was collected about users' perception of these problems. This allowed to observe how the inhabitants felt life quality/urban quality problems in their places of residence. Taking into account the variables related to the perception of life quality in Calabria, as for pollution, dirt, noise and other environmental problems, bad road conditions, inadequate lighting and public transports facilities and services, it was observed that, for more than half of them, these were very serious problems, highlighting that services and facilities are unsatisfactory. Therefore, the urban development tends to increase the social segregation in neighborhoods where there are problems of urban quality and deep problems of quality of life.

#### **4. Metodology and data analysis**

In order to analyze the presence of gender discrimination in labor market, a *Probit model* was used. Taking men with a job as the reference category, we focused on the spatial segregation and family characteristics that could affect women's probability of being employed. The econometric model includes a set of dummies variables (education levels, mothers and non-mothers, the presence of children and so on) that can have a negative impact on the likelihood for women to find a job. Moreover, in the model estimation, a fixed-effect option was used in order to control the unobserved heterogeneity of population in our dataset

The literature provides robust results about how the individual and social characteristic can affect the probability of finding a job. For example, people with higher education level – in general – show a higher probability of finding than those with lower ones.

Since the aim of this paper is to analyse the likely discrimination between men and women regarding the probability of finding a job, we start with a simple description of our sample.

Table 1 shows the distribution of the population regarding the labor condition, put in evidence the differences between men and women. The first things that we can



note is that our dataset is have an equal distribution between man and women - indeed, it is composed by 9,708 of which 4,747 (49%) are men and 4,961 (51%) are women - and this helps us to avoid critique about the composition of dataset.

**Table 1. Descriptive Statistics**

	Employed	Unemployed	Total
Num. observ	2,373	7,335	9,708
% of tot pop.	24.44	75.56	100.00
Gender			
Male	1,415	3,332	4,747
% of man population	29.81	70.19	100.00
% of total sample	59.63	45.43	48.90
Women	958	4,003	4,961
% of female population	19.31	80.69	100.00
% of total sample	40.37	54.57	51.10
Total	100.00	100.00	100.00

Author’s elaboration

Table 1 shows a dramatic situation: indeed, only 24, 4 percent of people presents in our sample have a job, while more than 3 individual on 4 are unemployed. From these preliminary results, we can note that there is a strong difference between men and women in order to get a job. Indeed, the percentage of men having a job (considering only men population) is about 30, while this percentage falls to 19 if we consider woman. Moreover, analysing whose who have a job, we note there is almost a differential of 20 percentage points between men and women (about 60 percent of employed are men, while for women this percentage falls to 40). Therefore, a first preliminary analysis shows that there exist a certain degree of discrimination in the

access to the labour market regarding women living in Calabria region. Now, we are going to investigate about the social and individual variables contributing to gender discrimination in employment in Italy.

In order to analyze the presence of gender discrimination in labor market, we used a sample representative of Calabria population limiting our analysis to individual from 17 to 65 years old. In the analysis we selected a set of individual variables (gender, education level, age, trust, family variables (marital status, the presence of child and elderly in household) and context variables (transport difficulties, Difficulties to access to services, Poor lighting). Since in the dataset the dependent variable is a binary response (we assign the value of 1 if individual has a job and 0 otherwise), we used a Probit model to investigate first of all, how family, individual and context variables affect the probability of finding a job, and secondly the eventual presence of gender discrimination in the access to labor market. The general probit with n variables can be written as following:

$$P_i(\text{Labor status} = 1|X_n) = \Phi(\beta_0 + \beta_k X_n)$$

Where  $P_i$  is the conditional probability of individual i to get a job,  $\beta_k$  are the coefficients and  $X_n$  are the explanatory variables, and  $\Phi$  is a normal cumulative density function. We first estimate a pooled model (men and woman together) and then men and women separately. Table 2 shows the results regarding a pooled estimation.

Table 2. Determinants of labor status. Pooled Probit model

Variables	(1)	(2)
Gender		-0.432*** (0.030)
Married	0.491*** (0.032)	0.527*** (0.033)
Divorced/widowed	0.321*** (0.048)	0.394*** (0.049)
Care for the children	-0.080 (0.057)	0.063 (0.058)
Care for the elderly	-0.061 (0.072)	-0.061 (0.072)
Trust	-0.002 (0.042)	-0.000 (0.042)
Education Level (tertiary education)	0.628*** (0.037)	0.669*** (0.038)
Transport difficulties	-0.031 (0.032)	-0.024 (0.032)
Difficulties to access to services	-0.025 (0.065)	-0.028 (0.066)
Poor lighting	-0.022 (0.032)	-0.014 (0.032)
Age	0.001 (0.001)	0.001 (0.001)
Observation	9705	9705
LogLikelihood	-5159.1912	-5054.3126

\*\*\*: significant at 10%, \*\*: significant at 5%, \*: significant at 1%

Look at column 1 - where we estimated the model without introducing the gender variable - we note that family variables (being married or divorced/widowed) and to have a tertiary or post-tertiary level of education have positive impact on the probability of finding a job. To be more specifically, being married or divorced/widow increase the probability of finding a job respectively of 49 and 32 percent. Moreover, if an individual has a bachelor degree, master degree or PhD, its probability of get a job increase of 62%. It is important to remember that, regarding column 1, our reference group is people (man and women) with a job, with education lower than or equal to high school. Other variables seems do not have significant on dependent variable. Column 2 shows the results introducing (unlikely the previous model) the dummy variable gender. This dummy takes the value of 1 if the individual is a woman and 0 otherwise. Looking at results immediately emerges that being woman reduces per sè the probability of finding

a job by 42 percent. The result shows a certain difficulty of women to access to the labor market, but it does not provide for which reasons this happens. Using gender-specific estimates is necessary because it allows us to individuate the individual, family or social characteristics that can affect the probability of women and men to access to the labor market. This is an important point as the standard economic theory suggests the existence of rational agent, with a unique behavior and whose objective is to maximize their own utility function. This model does not take into account that the behavior of women and men can be very different because there could be external factors whose can create barriers strong barriers that prevent women to access to the labor market. Something these factors can lead women to give up looking for work. Table 3 presents the results for gender-specific estimates.

Table 3. Labor market discrimination- Probit model

\*\*\*: significant at 10%, \*\*: significant at 5%, \*: significant at 1%

Variables	(1)	(2)
	Men	Women
Married	0.620*** (0.040)	0.185*** (0.044)
Divorced	0.408*** (0.070)	0.069 (0.063)
Care for the children	0.449*** (0.119)	-0.202*** (0.068)
Care for the elderly	-0.392** (0.153)	0.111 (0.087)
Trust	-0.082** (0.038)	-0.340*** (0.038)
Education Level (tertiary education)	0.593*** (0.053)	0.588*** (0.051)
Transport difficulties	0.038 (0.032)	-0.154*** (0.045)
Difficulties to access to services	-0.058 (0.065)	-0.084 (0.086)
Poor lighting	-0.038 (0.044)	-0.095*** (0.044)
Age	0.001 (0.001)	0.001 (0.001)
Observation	9705	9705
LogLikelihood	-5136.089	-5257.8064

The results showed evidence of gender discrimination. We start to analyse the differences considering the marital status. A married man has 62 percent of probability to find a job against only 18 percent for married woman. Moreover, being divorced has a positive impact of the probability of getting a job for men but not for women. This result could be explained considering the fact that very often divorced women have to take care of children and this, in absence of an adequate social assistance, reduces the time spent to the search of a job. This explanation is confirmed when we consider the impact of the variable “ Care for the children”: if on the one hand this variable seems to increase the probability of men of getting a job confirming previous results (see Cipollone and D’Ippoliti, 2008), for women it can be represent an obstacle. Indeed, for women, take care of children reduces the probability of finding a job of 20 percentage points compared women without children. Analysing individual characteristics, we can note that there is not much difference among men and women regarding education level. Indeed, have a tertiary or post-tertiary education level increase the probability of finding a job for men and women respectively by 59, 3 and 58, 8 percent. The negative effect of lack of self-confidence on the probability of finding a job is four time greater for women (34 percent) compared to men (8, 2 percent). Moreover, women seem to be strongly damaged from context variables. Indeed, the lack of adequate public transport and poor lighting negatively associated to the employed probability of women, while they do not affect on men. In particular, inadequate public transport reduces women probability of finding a job by 15 percent. This result can be explained considering that compared to men, women have more difficulties reaching the workplace in absence of private means of transport.

In conclusion, the results shows the presence of a strong gender discrimination for women in the access to labour market. In particular, this discrimination seems to be related mainly to three factors: a) family context), b) individual conditions (lack of self-confidence) and c) inadequate public transport.

## 5. Conclusions and Policy implications

Gender discrimination in the labour market is a complex and many-sided phenomenon.

In the last decades we passed from direct wage discrimination to allocative wage discrimination. At present it isn't so obvious to talk about labour market discrimination. This phenomenon has changed in time and can present entirely new forms and dimensions, often not easy to recognize, although they deeply affect the life of individuals and create inequalities among them.

The purpose of the following paper was to examine the phenomenon of gender discrimination through new interpretations in order to discover more hidden dimensions of the discriminatory phenomenon, such as way of the society is organised and structured.

In our paper we take into account spatial and urban factors not only as determinants of social exclusions but also as important determinants that affect and exacerbate the phenomenon of gender discrimination in the labour market. Such factors penalize mostly the women: they affect not so much the traditional discrimination indicators regarding the labour market (kind of occupation, wages, tasks to be carried out and so on), but mostly the pre-labour market condition of the accessibility to the labour, consequently amplifying the female social segregation. The social segregation affects the women quality of life, amplifies the asymmetry of familiar and house tasks and generates further inequality traps among men and women.

In order to analyse the gender discrimination in the access to labour market we used a probit model. The main conclusions are that the presence of a strong gender discrimination is confirmed. Indeed, it was found out that there are significant differences in the probability of finding a job among men and women. Indeed, the probability of finding a job is higher for women without children than for women with children. Moreover, also the lack of self-confidence represents it was also found out that, the urban characteristics of cities (lack of efficient public transport feed gender discrimination. The results suggest that the spatial segregation significantly increases women's probability of being unemployed. Gender unemployment proved to be strongly exacerbated by social and economic segregation at the place of residence.

Efficient policies of equal opportunities should pay attention not only to the

conditions inside the labour market but also to the pre-labour market conditions as the spatial and urban factors: a public transport gender audit should be made part of both public sector duty and community; enforce more rigorous monitoring of efforts to correct gender bias; recognition of women's social-reproductive work as "work", in order to design public-transport in a way that better meets women's needs and especially the inclusion into the labour market; devise methods to integrate transport and social policies to reduce social exclusion and unemployment.

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