Access to work and disability: the case of Italy

Tindara Addabbo, Elena Sarti

CAPP*aper* n. 111
ottobre 2013

Access to work and disability: the case of Italy

Tindara Addabbo[+] and Elena Sarti*

[+]Centre for the Analysis of Public Policies (CAPP) Department of Economics Marco Biagi,

Fondazione Marco Biagi, University of Modena and Reggio Emilia,

Email: tindara.addabbo@unimore.it

*Department of Economics, University of Geneva,

Email: Elena.Sarti@unige.ch

October 2013

Abstract

This paper is an empirical study on the work opportunities of people with disability using the Istat survey on health conditions 2004-2005, that collects information on the health status and disability condition on the whole Italian population and allows a comparison between disabled and not disabled persons. For this purpose we investigate the probability to be employed by disability status. People with disability show a lower probability of being employed and their employment probability is even lower if with psychic disability. By disaggregating by disability status our analysis can recognize a higher positive effect of investing in education on the probability of employment for people with disabilities.

Keywords: health condition, employment, personal characteristics and environmental factors.

JEL codes: J710, I100, I140

1. Introduction

The living conditions of people with disabilities have become a topical issue in recent years for policy-makers and scholars alike. In this paper we analyse Italian micro data on people with disability for studying their employment condition. The data confirm the role played by personal factors and the environment in determining the possibility of being in employment.

In section 2, we refer to the theoretical approaches on disability. In section 3, we briefly present the literature on disability and work. In section 4 we introduce the data and we present some descriptive statistics. In section 5 are shown the main empirical findings of the paper. Different probit models are used to identify which personal characteristics and environmental factors influence the probability of being employed. Finally, section 6 wraps up the analysis with some concluding remarks.

2. Theoretical approaches to disability

The notion of 'normality' is built during the Age of Enlightenment in the 18th century, when impairments were seen as a deficit, underlining what a person cannot do, instead of what one can do. This line of thinking is at the core issue of the called 'medical model' (Pfeifer (2001) and Mitra (2006)). In this model the disabled person is identified by his/her impairments, (s)he is considered unable to function normally (as recovered and 'normal' ones can do) and indeed are classified in specific categories, under the control of experts that can decide where they can go to school, what kind of support they get, where they have to live, what benefits they are entitled to, whether they can work and even, at times, whether they are born at all, or allowed to have children themselves.

As a reaction to the dominant medical model, in the 1960s the social model was developed. This model sees disability as a social construct, created by the external environment through the society response to disabled people. Furthermore, in 1965 the sociologist Saad Nagi introduced another model to conceptualize disability, the 'Nagi Model' (Nagi (1965) and Nagi (1991)), which underlined the importance of the environment that, together with

family, society and community factors, influence disability. It reconfigures the perception of disability away from a focus on physical limitations, defining disability as strictly correlated with the individual's roles and as expected by the society (Mitra (2006)).

The ICF has been the most recent disablement model created by the World Health Organization (WHO), after several revisions started in 1980, and it has been introduced with the goal of being used as the international standard to describe and measure health and disability. The ICF "attempts to achieve a synthesis, in order to provide a coherent view of different perspectives of health from a biological, individual and social perspective" (WHO, 2001, p. 20). The goal of the latest ICF revision is to remove the negative connotations associated with disability by using more positive terms to describe its characteristics, in line with all modern disablement models. It codes the components of health and provides an uniform perspective on health based on biological, individual and social factors.

Finally, some authors have recently used the capability approach to understand disability, since it recognizes the centrality of human diversity, considering the disability status as one of its expression. According to Mitra (2006), disability can be seen as the result of a combination of different factors. It can result from the nature of the impairment and other personal characteristics, such as age, gender and race. It can also be a consequence of the amount of available resources and of the ability to convert these resources in valuable functionings or, finally, it may be due to the physical, economic, social, political and cultural environment.

3. **Literature review**

Recent studies have explored empirically the labour market participation of disabled people. Gannon and Nolan (2003), using data from the Living in Ireland Survey 2000 and Quarterly National Household Survey 2002, show that a severely hampering chronic condition strongly reduces the probability of labour force participation, especially for men. Furthermore, married men are more likely to participate in the labour market than married women. The marginal effect of education is much higher for women and the presence of

young children (less than 12 years old) discourage women's participation, while there is no effect for men.

Jones et al. (2003), using UK data from the 2002 Labour Force Survey, compare the non-disabled to the disabled population. Their results point to a larger positive role of education on the likelihood of being employed for disabled than for non-disabled people. They find that disabled and non-disabled married men are more likely to be employed than married women. Moreover, the presence of dependent children has a negative impact on the probability of being in employment only for women.

In another study on the patterns of labour force participation in UK, Kidd et al. (2000) find substantial differences between disabled men and non-disabled ones. In particular, disabled men are more likely to work part-time and to be absent from work for sickness. Finally, the authors find that, among disabled men, psychological or learning difficulties are the most disadvantageous conditions for the probability of being in employment.

Mitra and Sambamoorthi (2006) study the employment of people with disability in India, using the National Sample Survey carried out in 2002 and representative of all non-institutionalized persons. Their findings show that the employment rate for disabled people is lower for women than for men, higher in rural areas than urban ones and lower for people with mental retardation and especially mental illness compared to those with other types of disabilities. Being married has a positive effect on the probability of being employed for men, but a negative one for women, a result that is broadly in line with the evidence reported for developed countries in the aforementioned papers. Moreover, people with mental retardation and mental illness are less likely to be employed especially in urban areas and independently of gender.

Finally, several studies deal with the relationship between disability and low-income levels in households. Among those, Parodi and Sciulli (2012) look at the Italian situation using the IT-SILC dataset for the period 2004-2007. They find that the probability of staying in a low-income status is higher for households with disabled members, and some structural variables, such as living in the South of Italy or having a small size household, increase the

probability of being in low income for households with disabled members. Furthermore, Cullinan et al. (2011), using Irish Data, and Zaidi and Burchardt (2005), with UK data, consider the presence of people with disability within the households as an additional source of expenditure that might impact the standards of living of all family members.

In this paper we contribute to the literature on labour market outcomes of disabled people in Italy, identifying which characteristics and factors increase the probability of being employed and showing the different effects by disability status and type of disability.

4. Data & descriptive statistics

In order to compare the employment status by disability we use the Istat (Italian National Institute of Statistics) survey `Health conditions and use of health services survey' 2004-2005, which collects information on the health status and socioeconomic conditions of the Italian population in 2004-2005 and that allows to compare the employment conditions of people with and without disabilities.

The 2004-2005 Istat survey on Health allows to observe 7,503 disabled (5.6% of the whole population) and 120,537 people without disability.

A crucial empirical challenge is to verify whether disabled persons have the practical opportunity to work, given their personal characteristics, the environment where they live and the resources available. After having analysed these groups within the disabled population, a further differentiation is done with respect to gender and how it affects the employment probability.

The literature on disability and employment clearly shows different likelihood of employment by types of disability and there is a strong heterogeneity according to the types of disability that should be accounted for by an applied research. This made us looking for a survey that could detect different health conditions but also that allows to distinguish the disabled population and the non-disabled one. Moreover, the sample allows to disaggregate the data by area, which is particularly relevant in a country like Italy, characterized by deep differences in the labour market among areas.

Finally, we must stress that, given the characteristics of our data, the definition of disabled person is already built in the surveys. We have selected a sample of 71,032 individuals aged 25 to 64 to focus on their employment status. Amongst the selected sample 2,585 are disabled and 68,447 are without disabilities. Within disabled 57% are male and 43% female (Figure 1).

Figure 1 - The sample by gender and disability: individuals aged 25 to 64
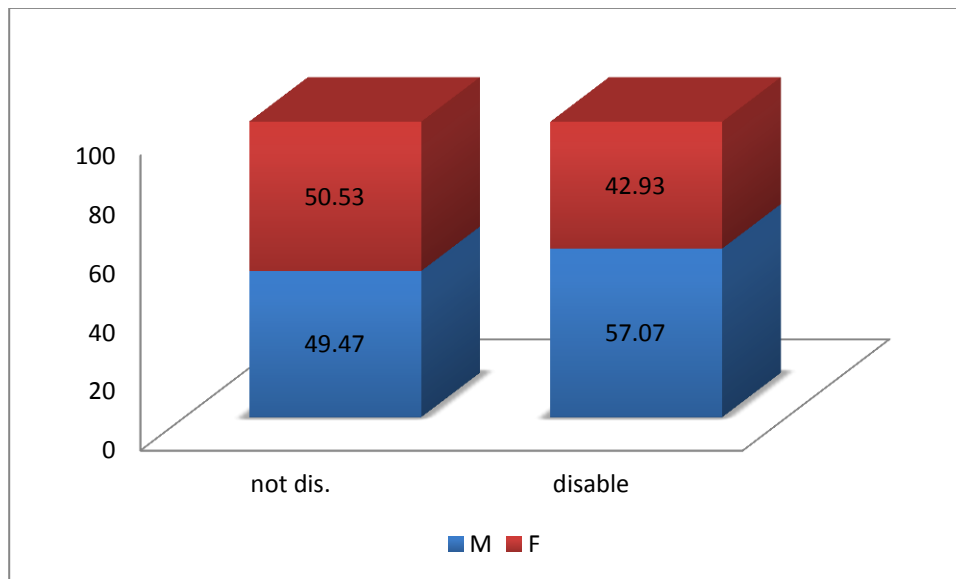
Source: Our elaborations on Istat 2004-2005 microdata

Within disabled people in the sample 73% have sensorial mobility types of disability and 27% mental or intellectual disabilities. The distribution by type of disability being similar by gender (Table 1).

Table 1 - Disabled by type of disability

	sensorial	psychic	Total
M	73,8	26,2	100
F	72,24	27,76	100
Total	73,13	26,87	100

Source: Our elaborations on Istat 2004-2005 microdata

Analysing the sample by level of education (Table 2) one can see how people with disabilities show on average a lower level of education than people without any disabilities. Amongst people without disability 37% hold high school level of education against 23% of people with disabilities and turning to those who hold degree or higher level of education there are 5% of disabled people having degree against 13% of not disabled. The difference being statistically significant.

Table 2 - Level of education by disabily status. Individuals aged 25-64

Education	not dis.	disabled	Total
without	2,67	7,91	2,85
elementary	13,81	27,27	14,28
secondary	34,22	36,56	34,3
high school	36,7	23,16	36,23
degree & more	12,59	5,11	12,33
Total	100	100	100

Source: Our elaborations on Istat 2004-2005 microdata

Within people with disabilities those with intellectual or mental disabilities show the lower level of education (Table 3).

Table 3 - Level of education by type of disabily. Disabled aged 25-64

education	sensorial	psychic	Total
without	4	18,52	7,91
elementary	27,91	25,52	27,27
secondary	35,82	38,58	36,56
high school	25,8	15,98	23,16
degree & more	6,47	1,4	5,11
Total	100	100	100

Source: Our elaborations on Istat 2004-2005 microdata

Turning to the employment status of individuals in our sample by gender and type of disabilities our descriptive statistics show much lower employment rates for people with disabilities (Table 4). Disabled have an employment rate by 35% against 66% for the whole

population. The gender disadvantage in the access to employment being 29 percentage points less for women not disabled and 20 percentage points for women with disabilities. The lowest employment rates are to be found amongst people with intellectual or mental disabilities who show also a lower gender gap in the access to employment. However this gender gap occurs in the presence of a very low employment rate for people with this type od disability: 15% for men and 11% for women against 54% for men and 29% for women if they have a sensorial or mobility disability.

Table 4 - Employment rates by gender, disability and type of disabily status. Individuals aged 25-64

	M	F	T
not disabled	81%	52%	66%
disabled	44%	24%	35%
sens.mob.	54%	29%	43%
psychic	15%	11%	14%

Source: Our elaborations on Istat 2004-2005 microdata

5. Employment probability and disability

In this section, we go beyond simple descriptive evidence to draw more robust inference from the data focussing on the employment probability of people with a different disability status.

A probit model is used to identify the personal characteristics and environmental factors that affect the probability of being employed, with a focus on the differences between people with and without disability by using the Istat 2004-2005 survey.

The dependent variable is equal to 1 if the person is employed, and 0 otherwise. Potential determinants of employment include the following: chronic diseases, type of disability and disability status age, age squared, education level, place of residence, gender and marital status.

We estimate the probit models using the Istat 2004-2005 survey on health. We first estimate the model for the full sample, pooling together people with and without disabilities. In Table 5 we show that controlling for individual and area characteristics, being disabled reduces by 26% the employment probability. This brought us to estimate two different models one for people with disabilities and one for people without disabilities (Table 6) to disentangle the different effect that the observable factors have on employment probability by disability status.

Table 5 - Employment probability. Individuals aged from 25 to 64

VARIABLES		
	Coeff.	dy/dx
Age	0.307***	0.108***
	(0.00525)	(0.00186)
Age Squared	-0.00380***	-0.00133***
	(5.95e-05)	(2.12e-05)
Female	-0.445***	-0.155***
	(0.0220)	(0.00754)
Married	0.428***	0.154***
	(0.0214)	(0.00781)
Married Woman	-0.864***	-0.313***
	(0.0274)	(0.00994)
Disabled	-0.678***	-0.261***
	(0.0683)	(0.0268)
Chronic	-0.0391***	-0.0137***
	(0.0138)	(0.00486)
Disabled with chronic diseases	-0.189**	-0.0691**
	(0.0797)	(0.0301)
Secondary	0.220***	0.0757***
	(0.0191)	(0.00644)
High school	0.565***	0.188***
	(0.0198)	(0.00620)
Degree	0.879***	0.244***
	(0.0263)	(0.00527)
Centre	0.439***	0.142***
	(0.0187)	(0.00540)
North East	0.590***	0.184***
	(0.0170)	(0.00461)
North West	0.517***	0.168***
	(0.0172)	(0.00502)
Constant	-5.639***	
	(0.110)	
Observations	71,032	
Robust standard errors in parentheses		
*** p<0.01, ** p<0.05, * p<0.1		
Pseudo R^2	0,2689	

Source: Our elaborations on Istat 2004-2005 microdata

The probit model coefficients show a significant inverted-U shape relationship between the likelihood of being employed and age. Therefore, being older decreases the chances of being employed. Consistently with the literature on female employment and the employment condition of Italian women, we find a negative effect of being women and of being married. Turning to the effect of regional dummy variables a higher positive effect on the employment probability of disabled people with respect to not disabled ones occurs for people living in the North-East of the country. Turning to gender differences we notice that being a woman decreases the employment probability of disabled people by 2% and by 16% for those without disability, being woman and married has a negative effect on the employment probability for disabled (-27%) and not disabled (-30% people). Being married has a higher positive effect on the employment probability for disabled people and we found a much higher negative effect of having a chronic disease for people with disabilities whose employment probability decreases by 12% against a decrease by 1% for not disabled. Table 6 shows that disabled people employment probability is more sensitive to education status: having a secondary school certificate increases the employment probability of people with disability by 13% against 7% for people without disability. Having a high school diploma increases the employment probability by 29% for disabled people and by 18% for people without disability whereas having a university degree or a higher education level increases by 45% the probability of employment for people with disability and by 23% for people without disability.

Table 6 - Employment probability by disability status. Individuals aged from 25 to 64

VARIABLES	disabled		not disabled	
	coeff.	dy/dx	coeff.	dy/dx
Age	0.258***	0.0907***	0.312***	0.107***
	(0.0279)	(0.00975)	(0.00538)	(0.00187)
Age squared	-0.00311***	-0.00109***	-0.00386***	-0.00133***
	(0.000301)	(0.000105)	(6.11e-05)	(2.13e-05)
Female	-0.0584	-0.0205	-0.470***	-0.160***
	(0.0970)	(0.0339)	(0.0228)	(0.00763)
Married	0.846***	0.285***	0.396***	0.140***
	(0.0921)	(0.0291)	(0.0222)	(0.00799)
Married woman	-0.912***	-0.271***	-0.843***	-0.301***
	(0.134)	(0.0321)	(0.0283)	(0.0102)
Chronic	-0.317***	-0.115***	-0.0329**	-0.0113**
	(0.0756)	(0.0283)	(0.0139)	(0.00479)
Secondary	0.351***	0.126***	0.212***	0.0712***
	(0.0796)	(0.0287)	(0.0197)	(0.00649)
High School	0.788***	0.294***	0.551***	0.180***
	(0.0896)	(0.0337)	(0.0204)	(0.00626)
Degree	1.187***	0.447***	0.863***	0.234***
	(0.151)	(0.0499)	(0.0268)	(0.00523)
Centre	0.361***	0.133***	0.440***	0.138***
	(0.0931)	(0.0355)	(0.0191)	(0.00535)
North East	0.592***	0.220***	0.590***	0.179***
	(0.0827)	(0.0317)	(0.0174)	(0.00456)
North West	0.384***	0.141***	0.522***	0.166***
	(0.0865)	(0.0328)	(0.0176)	(0.00497)
Constant	-5.954***		-5.692***	
	(0.627)		(0.112)	
R^2	0,23		0,26	
Observations	2,585		68,447	

Source: Our elaborations on Istat 2004-2005 microdata

Furthermore to disentangle the different effect of the types of disabilities we have estimated the same model on the group of disabled controlling for different types of disabilities as explanatory variables. Consistently with the literature, with respect to people with a

sensorial or mobility disability, people with intellectual or mental disabilities experience the higher decrease in the probability of employment (-34%).

Table 8 Probit: population with disability (differences by type of disabilities)

VARIABLES	employed	dy/dx
Age	0.269***	-0.0201***
	(0.0296)	(0.00165)
Age squared	-0.00329***	
	(0.000320)	
Female	-0.125	-0.226***
	(0.101)	(0.0257)
Married	0.596***	0.0942***
	(0.0967)	(0.0296)
Married woman	-0.831***	
	(0.139)	
Psychic dis.	-0.859***	-0.340***
	(0.181)	(0.0714)
Sensorial Mob.	0,02	0.00755
	(0.192)	(0.0761)
Chronic	-0.224***	-0.0886***
	(0.0775)	(0.0307)
Secondary	0.282***	0.107***
	(0.0828)	(0.0311)
High School	0.650***	0.253***
	(0.0911)	(0.0344)
Degree	0.977***	0.374***
	(0.155)	(0.0538)
Centre	0.313***	0.121***
	(0.0983)	(0.0384)
North East	0.507***	0.198***
	(0.0841)	(0.0325)
North West	0.314***	0.122***
	(0.0867)	(0.0337)
Constant	-5.678***	
	(0.707)	
R^2	0,27	
Observations	2,585	

Source: Our elaborations on Istat 2004-2005 microdata

Conclusions

This paper focus is on the different access to employment shown by people according to their disability status. Empirical evidence is provided by analysing the Istat (Italian National Institute of Statistics) survey `Health conditions and use of health services survey' 2004-2005, which collects information on the health status and socioeconomic conditions of the Italian population in 2004-2005. By estimating probit models on the employment probability according to disability status we could confirm the lower access to employment shown by disabled people and, by estimating different models by disability status, we could see how investment in education has a higher positive effect on the probability of being employed for disabled than for not disabled people. Moreover our results on the effect of different types of disability on the employment probability are consistent with the literature result of a lower probability of being employed for those people showing intellectual or mental diseases. These results call for an effort on the policies that can increase the level of education of people with disabilities to increase their chances to be employed. Special attention should also be paid to the access to work of peopole with mental or intellectual diseases who show the lowest probability to be employed.

Further analysis will be carried out on the differences in the type of employment and hours of work by gender and disability status to disentangle further inequalities in the type of employment and discuss possible outcomes in terms of public policies aiming to increase disabled employment probability and their quality of work.

References

- Cullinan, John, Brenda Gannon, and Sean Lyons (2011) 'Estimating the extra cost of living for people with disabilities.' Health Economics 20(5), 582-599.

- Gannon, Brenda, and Brian Nolan (2003) 'Disability and Labour Market Participation.' Papers HRBWP04, Economic and Social Research Institute (ESRI).

- Jones, Melanie K., Paul L. Latreille, and Peter J. Sloane (2003) 'Disability, Gender and the Labour Market.' IZA Discussion Papers 936, Institute for the Study of Labor (IZA).

- Jones, Melanie K., Paul L. Latreille, and Peter J. Sloane (2006) 'Disability, gender, and the British labour market.' Oxford Economic Papers 58(3), 407-449.

- Kidd, Michael P., Ivan Ferko, and Peter J. Sloane (2000) 'Disability and the labour market: an analysis of British males.' Journal of Health Economics 19(6), 961-981.

- Mitra, Sophie (2006) 'The Capability Approach and Disability.' Journal of Disability Policy Studies 16(4), 236-247.

- Mitra, Sophie, and Usha Sambamoorthi (2006) 'Employment of Persons with Disabilities: Evidence from the National Sample Survey.' Economic and Political Weekly 41(3), 199-203.

- Nagi, Saad Z. (1965) 'Some conceptual issues in disability and rehabilitation.' Sociology and rehabilitation pp. 100-113.

- Nagi, Saad Z. (1991) 'Disability concepts revisited: Implications for prevention.' Disability in America: Toward a national agenda for prevention pp. 309-327.

- Parodi, Giuliana, and Dario Sciulli (2012) 'Disability and low income persistence in Italian households.' International Journal of Manpower 33(1), 9-26.

- Pfeiffer, David (2001) 'The conceptualization of disability.' Research in Social science and disability 2, 29-52.

- WHO (2001) 'International Classification of Functioning, Disability and Health'.

- Zaidi, Asghar, and Tania Burchardt (2005) 'Comparing incomes when needs differ: Equalization for the extra costs of disability in the U.K.' Review of Income and Wealth.