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### Access to work and disability: the case of Italy

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# **Access to work and disability: the case of Italy**

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## **Abstract**

This paper is an empirical study on the work opportunities of people with disability using the ISTAT survey on Health Conditions and Use of Health Services Survey 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, the availability of data on the type of disability allows to detect amongst disabled a lower employment probability for individuals 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 and how their employment probability is related to the type of disability and to the efficiency of the public policies by area. The analyses confirm the role played by personal factors and the environment in the employment probability.

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 (International Classification of Functioning, Disability and Health) 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 a 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.

Differently from the above approach we use a definition of disability that is built in the data set taking into account different types of disability and their interaction with individual, family and social conversion factors. Our aim is to analyse how the probability of being employed is affected by disability and we survey the specific literature in the following Section.

### **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) discourages women's participation, while there is no effect for men's employment probability.

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 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 and descriptive evidence**

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 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 Conditions allows to observe 7,503 disabled people (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.

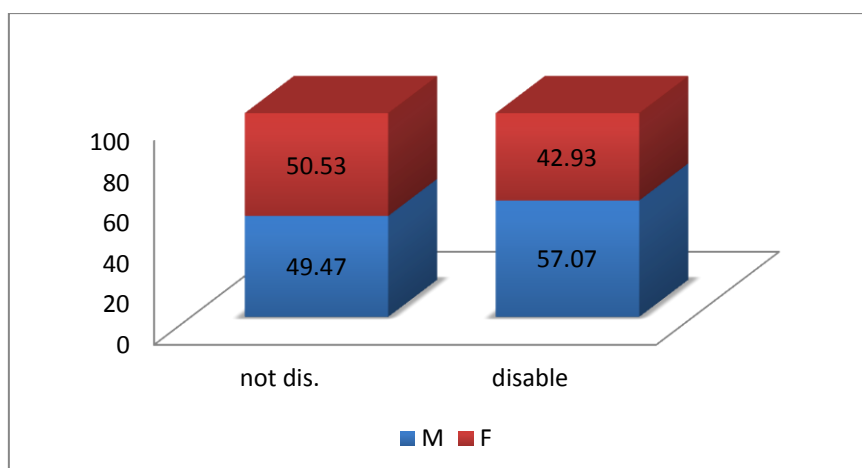
The literature on disability and employment clearly shows different likelihood of employment by types of disability and there is a strong heterogeneity according to the types of disability that should be accounted for by an applied research. This made us looking for a survey that could detect different 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 and in public policies among areas.

Finally, we must stress that, given the characteristics of our data, the definition of disabled person is already built in the survey.

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 is similar by gender (Table 1).

Table 1 - Disabled people 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 disability 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 disability. Disabled people 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 not disabled women 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 of 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 disability 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 focusing 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 the employment probability by 26%. 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*** (0.00525)	0.108*** (0.00186)
Age Squared	-0.00380*** (5.95e-05)	-0.00133*** (2.12e-05)
Female	-0.445*** (0.0220)	-0.155*** (0.00754)
Married	0.428*** (0.0214)	0.154*** (0.00781)
Married Woman	-0.864*** (0.0274)	-0.313*** (0.00994)
Disabled	-0.678*** (0.0683)	-0.261*** (0.0268)
Chronic	-0.0391*** (0.0138)	-0.0137*** (0.00486)
Disabled * Chronic	-0.189** (0.0797)	-0.0691** (0.0301)
Secondary	0.220*** (0.0191)	0.0757*** (0.00644)
High school	0.565*** (0.0198)	0.188*** (0.00620)
Degree	0.879*** (0.0263)	0.244*** (0.00527)
Centre	0.439*** (0.0187)	0.142*** (0.00540)
North East	0.590*** (0.0170)	0.184*** (0.00461)
North West	0.517*** (0.0172)	0.168*** (0.00502)
Constant	-5.639*** (0.110)	
Observations	71,032	
Pseudo R <sup>2</sup>	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 people (-30%). 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*** (0.0279)	0.0907*** (0.00975)	0.312*** (0.00538)	0.107*** (0.00187)
Age squared	-0.00311*** (0.000301)	-0.00109*** (0.000105)	-0.00386*** (6.11e-05)	-0.00133*** (2.13e-05)
Female	-0.0584 (0.0970)	-0.0205 (0.0339)	-0.470*** (0.0228)	-0.160*** (0.00763)
Married	0.846*** (0.0921)	0.285*** (0.0291)	0.396*** (0.0222)	0.140*** (0.00799)
Married Wom	-0.912*** (0.134)	-0.271*** (0.0321)	-0.843*** (0.0283)	-0.301*** (0.0102)
Chronic	-0.317*** (0.0756)	-0.115*** (0.0283)	-0.0329** (0.0139)	-0.0113** (0.00479)
Secondary	0.351*** (0.0796)	0.126*** (0.0287)	0.212*** (0.0197)	0.0712*** (0.00649)
High School	0.788*** (0.0896)	0.294*** (0.0337)	0.551*** (0.0204)	0.180*** (0.00626)
Degree	1.187*** (0.151)	0.447*** (0.0499)	0.863*** (0.0268)	0.234*** (0.00523)
Centre	0.361*** (0.0931)	0.133*** (0.0355)	0.440*** (0.0191)	0.138*** (0.00535)
North East	0.592*** (0.0827)	0.220*** (0.0317)	0.590*** (0.0174)	0.179*** (0.00456)
North West	0.384*** (0.0865)	0.141*** (0.0328)	0.522*** (0.0176)	0.166*** (0.00497)
Constant	-5.954*** (0.627)		-5.692*** (0.112)	
R <sup>2</sup>	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 (Table 7).

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

VARIABLES	Employed	dy/dx
Age	0.269*** (0.0296)	-0.0201*** (0.00165)
Age squared	-0.00329*** (0.000320)	
Female	-0.125 (0.101)	-0.226*** (0.0257)
Married	0.596*** (0.0967)	0.0942*** (0.0296)
Married woman	-0.831*** (0.139)	
Psychic dis.	-0.859*** (0.181)	-0.340*** (0.0714)
Sensorial Mob.	0,02 (0.192)	0.00755 (0.0761)
Chronic	-0.224*** (0.0775)	-0.0886*** (0.0307)
Secondary	0.282*** (0.0828)	0.107*** (0.0311)
High School	0.650*** (0.0911)	0.253*** (0.0344)
Degree	0.977*** (0.155)	0.374*** (0.0538)
Centre	0.313*** (0.0983)	0.121*** (0.0384)
North East	0.507*** (0.0841)	0.198*** (0.0325)
North West	0.314*** (0.0867)	0.122*** (0.0337)
Constant	-5.678*** (0.707)	
R <sup>2</sup>	0.27	
Observations	2,585	

Source: Our elaborations on ISTAT 2004-2005 microdata

### 5.1 The implementation of Law 68/1999 on targeted employment

As a further analysis we built an index on the efficiency in the access to work for people with disability by macro-area and we add this information as an explanatory variable in a probit model on the probability of being employed. More specifically the index is constructed by dividing the number

of those disabled people that got a job thanks to the Law 68 of March 1999 on targeted employment on the active population with disability<sup>1</sup>.

This Law, 'Regulation on the right to work of disabled persons', represents a real innovation for the integration of disabled people in the labour market and introduces the principles of targeted employment. It is based on the concept of matching the needs of the enterprises with the disabled person's characteristics, aiming at putting the right person in the right place (Article 2).

Law 68/1999 concerns public and private employers with more than 15 employees, who are obliged to employ disabled workers according to the following proportions:

- 15-35 employees: 1 disabled worker (nominative call);
- 36-50 employees: 2 disabled workers (1 nominative call and 1 numerical call);
- More than 50 employees: 7% of employees (60% nominative calls and 40% numerical calls). Furthermore, this law also comprises a benefits framework for partial relief from social security contributions and financial measures to support any adaptation of work environment. It also introduces sanctions for employers who do not meet the disability employment target, through a compensation fee to a specific fund managed at regional level. Finally, it assigns a high responsibility for its application to regional authorities, which have to coordinate employment offices, schools, provinces, associations, cooperatives, unions, etc. for implementing the law.

Even though, Law 68 of 1999 aims at introducing measures for promoting an individual based plan addressing the integration and placement of disabled persons in the labour market, the lack of cohesion and coordination among the different actors involved, the significant differences across regions and the propensity of private and public bodies not to comply

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<sup>1</sup> The data used for this purpose are those in the Report on the implementation of Law 68/1999 of the Italian Ministry of Labour 2006 (Ministero del Lavoro (2006)).



with their obligations (preferring the risk to be sanctioned and counting on delays in public controls and verifications) do not facilitate its implementation<sup>2</sup>.

More specifically, we obtain the following scores per macro-area and they refer to the disabled population aged between 15 and 64 years old.

Table 8 – Scores on the efficiency in the access to work of disabled people by macro-area. Individuals aged 15-64<sup>3</sup>

Area	Score	Freq.	Percent	Cum
South/Islands	0.034	52,565	41.05	41.05
Centre	0.044	22,682	17.71	58.77
North East	0.083	27,086	21.15	79.92
North West	0.089	25,707	20.08	100.00
Total	0.059	128,040	100.00	

Source: Our elaborations on Ministry of Labour (2006) data

The data show that in the South/Islands and in the Centre of Italy the scores are the lowest and, in addition in the South/Islands is found to be the highest number of active disabled people (193,000), while the lowest is in the North East of Italy (88,000).

If we perform the same calculation by gender, we find that the lowest score is performed by women for each macro area except for the North West.

<sup>2</sup> For further information on the implementation of Law 68/1999, see Ministero del Lavoro (2006, 2008, 2011).

<sup>3</sup> The scores have been obtained by dividing the number of those disabled people that got a job thanks to the Law 68 of March 1999 on targeted employment on the active population with disability.

Table 9 – Differences by gender on the scores on the efficiency in the access to work of disabled people by macro-area. Individuals aged 15-64

Area	Score M	Score F
South/Islands	0.042	0.025
Centre	0.058	0.032
North East	0.098	0.076
North West	0.080	0.087
Total	0.066	0.050

Source: Our elaborations on Ministry of Labour (2006) data

Adding a categorical variable representing the scores obtained by each area in a probit model on the probability of being employed we obtain, as expected, a negative and significant coefficient for the Centre and the South/Islands with respect to the North West (the reference group). In addition, it is found a positive and significant coefficient for the North East.

Furthermore, living in an area rather than in another one has a significant effect on the likelihood of being employed. More specifically, the effect is always positive for those living in the North part of Italy. Living in the North East has a statistically different effect from being in the West part and living in the Centre rather than in the South/Islands has a positive and statistically significant effect.

Table 10 – Probit model on the probability of being employed – efficiency scores as explanatory variable. Individuals aged 15-64

VARIABLES	Coeff.	dy/dx
Age	0.330***	0.00154***
	-0.00309	-0.000134
Age Squared	-0.00406***	
	-3.79E-05	
Female	-0.435***	-0.212***
	-0.0177	-0.00308
Married	0.429***	-0.00255
	-0.0201	-0.00335
Married Woman	-0.879***	
	-0.0242	
Disabled	-0.679***	-0.234***
	-0.066	-0.0161
Chronic	-0.0331**	-0.00902***
	-0.013	-0.00297
Disabled * Chronic	-0.194**	
	-0.0776	
Secondary	0.221***	0.0634***
	-0.0189	-0.0057
High School	0.489***	0.124***
	-0.0194	-0.00566
Degree	0.786***	0.173***
	-0.0255	-0.00592
Eff_North East	0.0817***	0.0143***
	-0.0182	-0.00321
Eff_Centre	-0.0971***	-0.0190***
	-0.0194	-0.00384
Eff_South/Islands	-0.523***	-0.129***
	-0.0159	-0.00369
Constant	-5.547***	
	-0.0593	
Observations	84,646	
Pseudo R <sup>2</sup>	0.3021	

Place of residence

Dif North East – North West	.0816684
DifSE North East – North West	(.0182395)
Dif Centre – South/Isl	.4257161
DifSE Centre – South/Isl	(.0169728)

Dif North West – Centre	.0971012
DifSE North West – Centre	(.0194336)
Dif North East – Centre	.1787696
DifSE North East – Centre	(.0192399)
Dif North West – South/Isl	.5228173
DifSE North West – South/Isl	(.0158592)
Dif North East – South/Isl	.6044857
DifSE North East – South/Isl	(.0156818)

t statistics in parentheses in the upper part of the table.

Standard errors in parentheses in the lower part.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

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Source: Our elaborations on Ministry of Labour (2006) data

In addition, splitting the sample between men and women is confirmed a negative sign for the South/Islands of Italy and a positive one for the North East for the probability of being employed (Tables 11 and 12). It has to be noted that the marginal effects are higher for women than for men for all the areas considered.

Moreover, the effect of living in the North is always positive, and living in the North East has a statistically different effect from being in the West part. Finally, living in the Centre rather than in the South/Islands has a positive and statistically significant effect for both men and women.

Table 11 – Probit model on the probability of being employed – efficiency scores as explanatory variable. Individuals aged 15-64 - Males

VARIABLES	Coeff.	dy/dx
Age	0.371***	0.000695***
	-0.00433	-9.61E-05
Age Squared	-0.00461***	
	-5.28E-05	
Married	0.454***	0.0494***
	-0.0241	-0.0029
Disabled	-0.861***	-0.179***
	-0.0806	-0.0166
Chronic	-0.140***	-0.0163***
	-0.0201	-0.00231
Disabled * Chronic	-0.116	
	-0.097	
Secondary	0.133***	0.0170***
	-0.0291	-0.00393
High School	0.199***	0.0241***
	-0.0294	-0.00395
Degree	0.397***	0.0415***
	-0.0397	-0.00429
Eff_North East	0.0702**	0.00563**
	-0.0278	-0.00224
Eff_Centre	-0.0643**	-0.00580**
	-0.0291	-0.00265
Eff_South/Islands	-0.411***	-0.0498***
	-0.024	-0.00291
Constant	-6.034***	
	-0.0831	
Observations	41,857	
Pseudo R <sup>2</sup>	0.3351	

Place of residence

Dif North East – North West	.0701647
DifSE North East – North West	(.0278302)
Dif Centre – South/Isl	.3471794
DifSE Centre – South/Isl	(.0254123)
Dif North West – Centre	.0642671
DifSE North West – Centre	(.0291126)

Dif North East – Centre	.1344319
DifSE North East – Centre	(.0290184)
Dif North West – South/Isl	.4114465
DifSE North West – South/Isl	(.0240185)
Dif North East – South/Isl	.4816112
DifSE North East – South/Isl	(.0240321)

t statistics in parentheses in the upper part of the table.

Standard errors in parentheses in the lower part.

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

Source: Our elaborations on Ministry of Labour (2006) data

Table 12 – Probit model on the probability of being employed – efficiency scores as explanatory variable. Individuals aged 15-64 – Females

VARIABLES	Coeff.	dy/dx
Age	0.285***	0.00293***
	-0.0044	-0.000277
Age Squared	-0.00345***	
	-5.36E-05	
Married	-0.397***	-0.141***
	-0.0189	-0.00656
Disabled	-0.422***	-0.211***
	-0.111	-0.0265
Chronic	0.0389**	0.0112*
	-0.017	-0.006
Disabled * Chronic	-0.283**	
	-0.126	
Secondary	0.314***	0.124***
	-0.0259	-0.0102
High School	0.749***	0.276***
	-0.0263	-0.01
Degree	1.100***	0.370***
	-0.0331	-0.0107
Eff_North East	0.0940***	0.0282***
	-0.0237	-0.00712
Eff_Centre	-0.120***	-0.0389***
	-0.0256	-0.00832
Eff_South/Islands	-0.616***	-0.224***
	-0.0211	-0.00717
Constant	-5.440***	

	-0.0846
Observations	42,789
Pseudo R <sup>2</sup>	0.2238

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Place of residence

Dif North East – North West	.0940306
DifSE North East – North West	(.0237082)
Dif Centre – South/Isl	.4960877
DifSE Centre – South/Isl	(.0227697)
Dif North West – Centre	.1202731
DifSE North West – Centre	(.025632)
Dif North East – Centre	.2143037
DifSE North East – Centre	(.0252379)
Dif North West – South/Isl	.6163608
DifSE North West – South/Isl	(.0211102)
Dif North East – South/Isl	.7103914
DifSE North East – South/Isl	(.020639)

t statistics in parentheses in the upper part of the table.

Standard errors in parentheses in the lower part.

\* p < 0.10, \*\* p < 0.05, \*\*\* p < 0.01

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Source: Our elaborations on Ministry of Labour (2006) data

## 6. Conclusions

The focus of this paper is on the different access to employment by disability status. Empirical evidence is provided by analysing the ISTAT survey on health conditions and use of health services 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. Moreover, different models estimated by disability status

show how investment in education has a higher positive effect on the probability of being employed for disabled than for not disabled people.

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 people 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. Moreover, we plan to use the Health conditions and use of health services survey 2012-2013 that will soon be made available by ISTAT to analyse to what extent the employment probability by disability status has been affected by the crisis.

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