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# On-the-job Search in Italian Labour Markets: An Empirical Analysis

Michela Ponzo\*

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*This paper analyses the determinants of on-the-job search activities of Italian workers. On-the-job search is a good indicator of labour turnover, overcoming the limitations due to a lack of adequate data about labour turnover. Using several waves of the Bank of Italy Survey on Household Income and Wealth (SHIW) we estimate with a Probit model how individual socio-demographic characteristics and economic variables affect the probability of on-the-job search. We find that the probability of being engaged in job-search activities is higher for males, when wage is lower, for workers with low tenure and higher levels of education and for residents in large cities. Public sector workers show a considerable lower probability of on-the-job search, suggesting higher satisfaction on the job. White-Collars and Teachers search much less than Blue-Collars. The number of job held and the average number of hours worked per week are important factors that increase the probability of on-the-job search. Married women and women with children are less likely to be looking for an alternative employment.*

*Keywords: Job search, labor mobility.*

*JEL classifications: J28, J62, M51.*

## 1. Introduction

Labour turnover typically imposes very large costs on firms and organizations in terms of loss of valuable human resources, disruption of ongoing activities, additional recruitment and training costs of new employees. On the other hand, labour mobility is the mechanism that labour markets use to correct job matching errors and might lead to a better and efficient allocation of human resources. Understanding the factors which determine worker's initiated mobility is therefore an important economic topic, relevant also for decisions of firms and organizations.

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At the theoretical level, labour turnover has been analyzed by Becker (1962). His theory of human capital provides important elements for the analysis of determinants of worker turnover. One fundamental idea in the Beckerian framework is that an important part of skills that workers develop are learned on the job and are mainly useful in the current firm (firm-specific human capital). Hence, both firms and workers invest in workers' skills in order to increase labour productivity and the longer an employee works for a given employer, the more specific capital he accumulates. For this reason, the propensity of workers to move from the current firm is lower the longer the job tenure is.

Labour mobility and the costs for the firms related to it has been extensively analyzed by the efficiency wage literature which considers the wage that the firm pays as an important instrument to reduce labour turnover costs (Stiglitz, 1974; Salop, 1979). The labour turnover model of efficiency wages derives the result that firms with higher turnover costs tend to pay higher wages in order to discourage workers from turnover.

Empirically, a number of studies have analyzed the determinants of on-the-job search propensity. A major line of research has been developed regarding the effect of wage level on the incidence of on-the-job search. Black (1981), using data from the United States, finds that one of the main determinants that encourage individual's decision of whether or not to search for another job is the potential wage gain he could obtain, estimated as the residual from a regression of the wage on human capital, demographic variables and local labour market conditions. Similarly, Hartog and van Ophem (1994) model the probability of US workers to search on-the-job as a function of a wage residual derived from a wage equation with years of education and labour market experience as explanatory variables. They find a significant negative effect of the wage residual on the job search decisions. Allen and van der Velden (2001) analyse job search behaviour of a sample of graduates from tertiary education and find instead insignificant effects of workers wages on the job search decision on the UK *Labour Force Survey*. All mentioned studies show a positive effect of the status of temporary employment on-the-job search. Moreover workers with short job tenure and high qualifications are more likely to search. Other studies (Pissarides and Wadsworth, 1994), for example, including variables capturing labour market conditions, find that local unemployment has a negative effect on the propensity to search.

Another stream of literature investigates the relationship between labour market turnover and education on job mismatches (Topel, 1986; Hersch, 1991), occupational

choice (Viscusi, 1979) and job satisfaction considering the propensity to move from a firm as a proxy of job satisfaction, that is, the workers' evaluations of the job (Tsang and Levin, 1985).

Freeman (1978) has shown that the probability that a worker leaves his job decreases with job satisfaction. The presence of a negative relation between job satisfaction and turnover has been confirmed by Clark *et al.* (1998), Clark (2001), Akerlof *et al.* (1988). The general finding is that workers reporting dissatisfaction with their job are more likely to search. In other words, the self-reported level of job satisfaction is a good predictor for job mobility.

In a cross-national analysis covering 25 countries, Sousa-Poza and Henneberger (2004) report strong negative relations between job satisfaction and turnover intention that reflects the probability that an individual will change his job within a certain time period, while Böckerman and Ilmakunnas (2007), using Finnish data, find the same link between job satisfaction and both intention to quit and job search. Turnover intentions are often associated with job search behaviour. The relationship between job search, job offers and mobility is analyzed in Hartog *et al.* (1988), Hartog and Van Ophem (1996) for Dutch employees during the eighties suggesting little stability in structural models of job mobility.

Another possible explanation for the existence of on the job search is the adverse working conditions, that is, the possibility for employees of switching jobs when the actual wage level does not compensate the current working conditions (Blau, (1991), Hwang, Mortensen and Reed, (1998), Lang and Majumdar (2004)). In most of these studies the data on working conditions rely on, for example, industry injury rates or work attributes typical of different occupations.

The aim of this study is to investigate the impact of worker's socio-economic and firm characteristics on the probability of on-the-job search for workers Italian labour market. To the best of our knowledge, there are no other studies investigating the determinants of on-the-job search for Italy.

We use the latest six waves of the Survey on Household Income and Wealth (hereafter indicated as SHIW), conducted by the Bank of Italy from 1995 to 2006 in which personal and family information are combined with information on labour market behaviour of individuals. The Survey asks to workers and unemployed if they have carried out some actions to start searching for a new job opportunity. We restrict the analysis to public and private employees and self-employed. We define the dependent

variable as *on-the-job search*, which is set equal to one if individuals did some actions to look for a new occupation. We estimate a number of pooled Probit model for on-the-job search in order to verify empirically the relationship existing between on-the-job search activities and several socio-demographic and economic variables.

Our main findings are the following. We find that the wage level considerable decreases the probability to search for a new job, while a high educational level makes job search more likely. The probability of search is negatively related to the worker's tenure. Individuals living in large city are more willing to change job, public sector workers show a considerable lower probability of on-the-job search compared to private sector workers, implying probably a much higher satisfaction for their job (due to better worker conditions, strong job security, better social climate, lower pressure to put effort on the job). All those factors reduces the probability to search for a new job for public employees with respect to private one. The number of jobs held and the average number of hours worked per week have a positive effect on the probability of searching to another job. Married women are less likely to be looking for an alternative employment and there is a very large effect from the presence of children on female job search. White-Collars and teachers search much less than blue-collars.

The paper is organized as follows. Section 2 describes the SHIW dataset we use and gives some descriptive statistics. Section 3 reports and discusses many different specifications explaining the probability of job search. Section 4 concludes.

## **2. The Data**

The data source we use for our empirical analysis is the *Survey of Household Income and Wealth* (SHIW) which is conducted every two years by the Bank of Italy on a representative sample of about 8,000 Italian households.<sup>1</sup> The SHIW contains a rich set of information on demographic and social characteristics of all individuals in the households (age, gender, marital status, education, region of residence, etc.), and on their working activity (earnings, employment status, type of occupation, industry and so on). We pool together SHIW data drawn from the six latest waves, conducted respectively in 1995, 1998, 2000, 2002, 2004 and 2006.

The Survey asks to workers and unemployed if they have searched for another job or position during the reference year. We focus on employed individuals (employees

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<sup>1</sup> SHIW data are freely available at [www.bancaditalia.it](http://www.bancaditalia.it).

and self-employed) and define a dichotomous variable *On-the-job Search* that takes the value of one if the respondent reports that he has searched for a new job, and zero otherwise.

Table 1 presents descriptive statistics for the main variables used in the analysis. The mean value of *On-the-job Search* is 0.081 with a standard deviation of 0.27. Education represents the years of schooling.<sup>2</sup> The average number of years of education for workers in the sample is 11. Females make up 39% of the sample. Married people<sup>3</sup> 66%. The average level of labor income (in log) is 9.5.

**Table 1. Descriptive statistics**

| Variables                       | Mean    | St. Dev. | Min  | Max    | Obs.  |
|---------------------------------|---------|----------|------|--------|-------|
| <i>On-the-Job Search</i>        | 0.081   | 0.273    | 0    | 1      | 44721 |
| <i>Female</i>                   | 0.387   | 0.487    | 0    | 1      | 44721 |
| <i>Education</i>                | 10.952  | 3.876    | 0    | 20     | 44721 |
| <i>Married</i>                  | 0.657   | 0.475    | 0    | 1      | 44721 |
| <i>Labor Income</i>             | 9.520   | 0.621    | .081 | 13.852 | 41207 |
| <i>Public Employee</i>          | 0.216   | 0.411    | 0    | 1      | 44721 |
| <i>Self Employed</i>            | 0.218   | 0.413    | 0    | 1      | 44721 |
| <i>Tenure</i>                   | 15.177  | 11.392   | 0    | 57     | 44263 |
| <i>Tenure2</i>                  | 360.107 | 439.965  | 0    | 3249   | 44263 |
| <i>North-West</i>               | 0.252   | 0.434    | 0    | 1      | 44263 |
| <i>North-East</i>               | 0.232   | 0.422    | 0    | 1      | 44721 |
| <i>Centre</i>                   | 0.217   | 0.412    | 0    | 1      | 44721 |
| <i>South</i>                    | 0.201   | 0.400    | 0    | 1      | 44721 |
| <i>Islands</i>                  | 0.098   | 0.298    | 0    | 1      | 44721 |
| <i>Very Small City (&lt;20)</i> | 0.285   | .452     | 0    | 1      | 44721 |
| <i>Small City (20-40)</i>       | 0.204   | 0.403    | 0    | 1      | 44721 |
| <i>Medium City (40-500)</i>     | 0.424   | 0.494    | 0    | 1      | 44721 |
| <i>Large City (&gt;500)</i>     | 0.086   | 0.281    | 0    | 1      | 44721 |
| <i>Small Firm</i>               | 0.252   | 0.434    | 0    | 1      | 44721 |
| <i>Medium Firm</i>              | 0.157   | 0.364    | 0    | 1      | 44721 |
| <i>Large Firm</i>               | 0.158   | 0.365    | 0    | 1      | 44721 |
| <i>White-Collar</i>             | 0.283   | 0.450    | 0    | 1      | 44721 |
| <i>Teacher</i>                  | 0.068   | 0.251    | 0    | 1      | 44721 |
| <i>Junior Manager</i>           | 0.048   | 0.215    | 0    | 1      | 44721 |
| <i>Manager</i>                  | 0.019   | 0.138    | 0    | 1      | 44721 |
| <i>Temporary Contract</i>       | 0.055   | 0.228    | 0    | 1      | 44721 |
| <i>Number of Jobs Held</i>      | 1.959   | 1.679    | 0    | 82     | 44685 |
| <i>Hours worked pr week</i>     | 37.817  | 8.888    | 0    | 150    | 35084 |
| <i>Number of Children</i>       | 0.457   | 0.733    | 0    | 5      | 44721 |

Public employees are 22% and self-employed are 21% of the sample. The average level of tenure is 15. Individuals living in the North-West or North-East constitute the 48% while 30% live in the South and on the Islands<sup>4</sup>. Individuals working

<sup>2</sup> *Education* is set at 0 for no educational qualification; 5 for elementary school; 8 for middle school; 11 for some high school; 13 for high school; 18 for university; 20 for postgraduate qualification.

<sup>3</sup> We set *Married* equal to zero if the individual has never got married, is widowed, separated or divorced.

<sup>4</sup> North-West includes the following regions: Piedmont, Valle d'Aosta, Lombardy, Liguria; North-East includes Veneto, Trentino Alto Adige, Friuli Venezia Giulia, Emilia Romagna; Centre includes Tuscany, Lazio, Marche, Umbria; South includes Abruzzi, Campania, Apulia, Molise, Basilicata, Calabria; Islands includes Sicily and Sardinia.

in small firms (below 20 workers) make up 25%. The average number of jobs performed is 1.95. The average number of hours worked per week is 38.

### ***3. An Empirical Analysis of On-the-Job Search Activities in Italy***

In this Section in order to analyze the determinants of on-the-job search activities, we estimate a number of specifications of a probit regression on pooled data.

The dependent variable is *On-The-Job Search*. We restrict our sample to public and private employees and self-employed, aged between 15 and 65 years. The reported coefficient in the Tables are the marginal effects, evaluated at the mean values of the explanatory variables in the sample. In all the equations sample weights provided in the SHIW dataset are used. In all the regressions we control for dummy year variables (not reported).

**Table 2. Determinants of *On-The-Job Search*. Probit estimations.**

| <i>Variables</i>                     | (1)                  | (2)                  | (3)                  | (4)                  |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| <i>Female</i>                        | -0.011***<br>(0.003) | -0.009***<br>(0.003) | -0.008**<br>(0.003)  | -0.009**<br>(0.004)  |
| <i>Education</i>                     | 0.001***<br>(0.000)  | 0.002***<br>(0.000)  | 0.002***<br>(0.000)  | 0.002***<br>(0.001)  |
| <i>Married</i>                       | -0.009***<br>(0.003) | -0.006**<br>(0.003)  | -0.005**<br>(0.002)  | -0.006***<br>(0.002) |
| <i>Labor Income</i>                  | -0.057***<br>(0.002) | -0.055***<br>(0.002) | -0.047***<br>(0.002) | -0.055***<br>(0.003) |
| <i>North-East</i>                    | -0.006**<br>(0.003)  | -0.007**<br>(0.003)  | -0.007**<br>(0.003)  |                      |
| <i>Centre</i>                        | -0.010***<br>(0.003) | -0.008***<br>(0.003) | -0.009***<br>(0.003) |                      |
| <i>South</i>                         | -0.007**<br>(0.003)  | -0.004<br>(0.003)    | -0.008***<br>(0.003) |                      |
| <i>Islands</i>                       | 0.000<br>(0.004)     | 0.005<br>(0.004)     | -0.001<br>(0.004)    |                      |
| <i>Small City (20-40)</i>            | 0.012***<br>(0.003)  | 0.011***<br>(0.003)  | 0.011***<br>(0.003)  | 0.011**<br>(0.005)   |
| <i>Medium City (40-500)</i>          | 0.013***<br>(0.003)  | 0.012***<br>(0.003)  | 0.012***<br>(0.003)  | 0.012**<br>(0.005)   |
| <i>Large City (&gt;500)</i>          | 0.023***<br>(0.005)  | 0.023***<br>(0.005)  | 0.023***<br>(0.005)  | 0.025**<br>(0.012)   |
| <i>Tenure (years)</i>                | -0.008***<br>(0.000) | -0.007***<br>(0.000) | -0.007***<br>(0.000) | -0.007***<br>(0.000) |
| <i>Tenure Squared</i>                | 0.000***<br>(0.000)  | 0.000***<br>(0.000)  | 0.000***<br>(0.000)  | 0.000***<br>(0.000)  |
| <i>Number of Jobs Held</i>           | 0.007***<br>(0.001)  | 0.007***<br>(0.001)  | 0.007***<br>(0.001)  | 0.007***<br>(0.001)  |
| <i>Number of Children</i>            | 0.000<br>(0.001)     | 0.000<br>(0.001)     | 0.000<br>(0.001)     | 0.000<br>(0.002)     |
| <i>(Female)*(Number of Children)</i> | -0.010***<br>(0.003) | -0.010***<br>(0.003) | -0.010***<br>(0.003) | -0.010***<br>(0.003) |
| <i>Public Employee</i>               |                      | -0.031***<br>(0.002) | -0.031***<br>(0.002) | -0.031***<br>(0.003) |
| <i>Self Employed</i>                 |                      | -0.020***<br>(0.002) | -0.013***<br>(0.002) | -0.020***<br>(0.003) |
| <i>Temporary worker</i>              |                      |                      | 0.093***<br>(0.007)  |                      |
| <i>Regional Unemployment Rate</i>    |                      |                      |                      | 0.001<br>(0.000)     |
| <i>Observations</i>                  | 40703                | 40703                | 40703                | 40703                |
| <i>Pseudo R-squared</i>              | 0.206                | 0.213                | 0.227                | 0.213                |
| <i>Log-likelihood</i>                | -9275.608            | -9193.776            | -9034.064            | -9198.047            |

Notes: Pooled Probit estimates. The dependent variable is *On-the-Job Search*. The coefficients represent the marginal effects. Standard errors (robust to heteroskedasticity) are reported in parentheses. The symbols \*\*\*, \*\*, \* indicate that coefficients are statistically significant, respectively, at the 1, 5, and 10 percent level. Sample weights are used. Year dummy variables are included in all the regressions (not reported). Data source: SHIW 1995-2006. The standard errors reported in column (4) are corrected for the potential clustering of the residual at the regional level.

Column (1) shows the estimated coefficients concerning all workers in a model in which we only use socio-demographic and job characteristic as explanatory variables.

Results show, in accordance with the existing literature, that the educational level has a positive impact on actual job search probably because a high level of education is often associated with better labour market alternatives. Education is highly statistically significant (p-value 0.000).

Looking at the gender, females turn out to be significantly less prone to search for a new job. Being married shows a negative significant effect on job search since it is plausible more costly for a worker to move with a family (Holmlund, 1984; Zimmermann, 1984).

In column (1) we consider, as determinant of on-the-job search activity among the employed, the *Total Labour Income*. A very clear prediction from turnover models is that the intensity of search is decreasing in the wage because the higher the wage level, the less the potential gain from job search is, as there are fewer higher wage jobs to find. This factor has received a lot of attention in the literature: human capital theory predicts that, other things being equal, a worker will have a greater probability of quitting if his wage is lower, simply because workers have more possibility to find a better-paid job by changing employers. Efficiency wages theories have shown the interest of firms to pay a higher wage in order to discourage worker turnover and avoid to bear the related turnover costs.

Our analysis strongly confirms this prediction: estimations show an inverse relation between labour income and the probability of job search (the effect of labour income is highly significant ( $t$ -stat is 30.05)). A wage increase of 1,000 euro (%) (starting from the average level) leads to a reduction of 5.7% in the probability to search for a new job. We obtain similar results if income is specified in linear and squared terms. In both cases, results show that labour income greatly decreases on-the-job search, but also, that a concave relationship exists between on-the-job search behaviour and labour income.

In column (1) we control for geographical dummy variables to capture the effects of different regional labour market (while in column 4 we also consider the unemployment regional rate). With respect to the geographical areas, our results show that the probability of job search is lower in the Centre and in the South respect to the North West (the reference category).

In regression (1) we also control for city size dummies. Results show that job search activity appears to increase with the size of the town where individuals live: workers search about 2.3 percentage points more in very large cities respect to the reference category (towns with fewer than 20,000 inhabitants). This finding is probably due to the fact that large cities are characterized by thicker labour markets, in which search activities are more productive in terms of probability of job matching.

Following the existing literature, in column (1) we also introduce *Tenure* and *Tenure Squared* as explanatory variables. The job tenure variables reflects the returns to the accumulation of firm specific human capital. Tenure is calculated as the difference between the worker's age and the age in which he/she has started to work in the current firm.

Results show that *Tenure* is negative and highly significant. The longer is the tenure, the higher is the accumulation of firm specific human capital and therefore the higher is the productivity in the current firm: this tends to create a wedge between the wage earned with the current employer and the wage that can be expected with a different employer, and therefore it makes job search less likely. *Tenure Squared* turns out to be positive, implying that the marginal effects of tenure are decreasing.

In our regressions we consider also the *Number of Jobs Held* previously by the worker as a factor that may affect the probability of on-the-job search behaviour. The results of the estimates show that one more job experience in the past increases the probability of being engaged in job search activities. This is probably due to a larger network of acquaintances acquired on previous jobs which may help to find a new job or to a greater individual propensity to move from one job to another.

We have run separate regressions for men and women (not reported), in order to check the relative importance of factors in on-the-job search activities. The results show that men and women do not exhibit significant differences in on-the-job search behaviour. The only relevant differences concern the following aspects: other things being equal, married women are more strongly discouraged to search for another job compared to married men (but in both cases the married dummy is significant at 1% level). At the same time, having children does not seem to affect job search propensity of men while there is a large negative effect from the presence of children on-the-job search of females (the effect is significant on the 1% level): having a child reduces the probability to be looking for an alternative employment of 2.1%.

In column (2) we examine if there exist differences in job-search activities between public employees, private employees and self-employed. These differences may represent different levels of on-the-job satisfaction related to the different working conditions of these types of jobs. Estimates show that being employed in the public sector reduces the probability to search for a new job of about 3% respect to private employees (the coefficient is significant at the 1 percent level). This remarkable difference – obtained controlling for wage levels – is probably due to better working

conditions, lower effort and strong job security associated with public employment in Italy. This is an important result which proves the attractiveness of Italian public jobs, beyond the anecdotal evidence of large queue in competitions for public jobs.

Being self-employed reduces on-the-job search of 2% respect to private employees. Self-employed appear also to be more satisfied with their job with respect to private employees.

In column (3) we include as explanatory variable *Temporary Contract* status to verify the effects of a non permanent position of the worker on the probability to search for a new job. As we expected, workers holding temporary contracts suffer worse working conditions than workers holding permanent contracts and they search for new jobs much more frequently: it emerges an increase of 9.3 percentage points in the probability of engaging of on-the-job-search activity in case of temporary labour contracts.

In column (4) we consider the unemployment rate at regional level. Regional unemployment rates are taken by Labor Force Survey conducted by ISTAT (the National Statistic Institute). It is plausible to think that the propensity to search for another job depends on the state of the regional labour market. According to the existing literature, workers search less in regional labour markets with high unemployment rate. This may be a sign of the discouraged worker effect. In fact workers will have a higher probability of search for a different job when it is relatively easy for them to obtain a better job quickly. Thus, when jobs are more plentiful relative to job seekers, one would expect the search rate to be higher than when few jobs are available and many workers are being laid off.

Note that since the unemployment rate is defined at regional level, perfect collinearity does not allow us to estimate regional dummies. The standard errors reported in column (4) are corrected for the potential clustering of the residual at the regional level.

In contrast to theoretical predictions, in our specification the *Unemployment* coefficient has a positive sign and it is not significant. This result can be probably explained by the fact that regions with high levels of unemployment tend also to provide worse jobs, that is, less stable and with worse working conditions (unobservable characteristics in the data) and therefore there is the tendency for employees to search for better jobs in these markets, offsetting the effects of looking at job opportunities.

To better evaluate the possible differences existing between public and private employees, in Table 3 we divide the sample into two different categories: firstly we take into account public and private employees (columns 1-3), while in column (4) we only consider self-employed.

**Table 3. Determinants of on-the-job-search. Probit estimations. Dependent Variable: *On-The-Job Search*. Sample: Private and Public Employees (1-3), Self-Employed (4).**

| Variables                            | (1)                                 | (2)                                 | (3)                                 | (4)                  |
|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|
|                                      | <i>Public and Private Employees</i> | <i>Public and Private Employees</i> | <i>Public and Private Employees</i> | <i>Self-employed</i> |
| <i>Female</i>                        | -0.010***<br>(0.004)                | -0.010***<br>(0.004)                | -0.009**<br>(0.004)                 | 0.008<br>(0.008)     |
| <i>Education</i>                     | 0.003***<br>(0.000)                 | 0.003***<br>(0.000)                 | 0.003***<br>(0.000)                 | 0.000<br>(0.001)     |
| <i>Married</i>                       | -0.002<br>(0.003)                   | -0.002<br>(0.003)                   | -0.002<br>(0.003)                   | -0.014***<br>(0.005) |
| <i>Labor Income</i>                  | -0.066***<br>(0.002)                | -0.066***<br>(0.002)                | -0.066***<br>(0.003)                | -0.036***<br>(0.003) |
| <i>North-East</i>                    | -0.007**<br>(0.003)                 | -0.007**<br>(0.003)                 | -0.007**<br>(0.003)                 | -0.003<br>(0.006)    |
| <i>Centre</i>                        | -0.009***<br>(0.003)                | -0.009***<br>(0.003)                | -0.010***<br>(0.003)                | -0.009<br>(0.006)    |
| <i>South</i>                         | -0.006*<br>(0.003)                  | -0.006*<br>(0.003)                  | -0.006*<br>(0.003)                  | -0.006<br>(0.006)    |
| <i>Islands</i>                       | 0.003<br>(0.004)                    | 0.003<br>(0.004)                    | 0.004<br>(0.004)                    | 0.002<br>(0.008)     |
| <i>Small City (20-40)</i>            | 0.011***<br>(0.004)                 | 0.011***<br>(0.004)                 | 0.011***<br>(0.004)                 | 0.018**<br>(0.008)   |
| <i>Medium City (40-500)</i>          | 0.011***<br>(0.003)                 | 0.011***<br>(0.003)                 | 0.012***<br>(0.003)                 | 0.023***<br>(0.006)  |
| <i>Large City (&gt;500)</i>          | 0.018***<br>(0.006)                 | 0.018***<br>(0.006)                 | 0.018***<br>(0.006)                 | 0.063***<br>(0.016)  |
| <i>Tenure (years)</i>                | -0.008***<br>(0.000)                | -0.008***<br>(0.000)                | -0.008***<br>(0.000)                | -0.005***<br>(0.001) |
| <i>Tenure Squared</i>                | 0.000***<br>(0.000)                 | 0.000***<br>(0.000)                 | 0.000***<br>(0.000)                 | 0.000***<br>(0.000)  |
| <i>Number of Children</i>            | 0.001<br>(0.001)                    | 0.001<br>(0.001)                    | 0.001<br>(0.001)                    | -0.004**<br>(0.002)  |
| <i>(Female)*(Number of Children)</i> | -0.008**<br>(0.004)                 | -0.008**<br>(0.004)                 | -0.008**<br>(0.004)                 | -0.017***<br>(0.006) |
| <i>Hours worked per week</i>         | 0.001***<br>(0.000)                 | 0.001***<br>(0.000)                 | 0.001***<br>(0.000)                 |                      |
| <i>Medium Firm</i>                   |                                     | -0.001<br>(0.003)                   | -0.001<br>(0.003)                   |                      |
| <i>Large Firm</i>                    |                                     | 0.003<br>(0.003)                    | 0.003<br>(0.003)                    |                      |
| <i>White-Collar</i>                  |                                     |                                     | -0.009***<br>(0.003)                |                      |
| <i>Teacher</i>                       |                                     |                                     | -0.013**<br>(0.006)                 |                      |
| <i>Junior manager</i>                |                                     |                                     | 0.009<br>(0.006)                    |                      |
| <i>Manager</i>                       |                                     |                                     | 0.013<br>(0.012)                    |                      |
| <i>Observations</i>                  | 33955                               | 33955                               | 33955                               | 6726                 |
| <i>Pseudo R-squared</i>              | 0.218                               | 0.218                               | 0.219                               | 0.196                |
| <i>Log-likelihood</i>                | -7831.676                           | -7831.065                           | -7820.127                           | -1324.082            |

Notes: Pooled Probit estimates. The dependent variable is *On-the-Job Search*. The coefficients represent the marginal effects. Standard errors (robust to heteroskedasticity) are reported in parentheses. The symbols \*\*\*, \*\*, \* indicate that coefficients are statistically significant, respectively, at the 1, 5, and 10 percent level. Sample weights are used. Year dummy variables are included in all the regressions (not reported). Data source: SHIW 1995-2006.

Respect to the previous analysis, in this specification we control for some additional variables that are only available for employees.

We introduce the average *Number of Hours Worked* per week. As we expected, the hours worked have a positive impact on the probability of search for another job. One more hour worked increases the probability of on-the-job search of 0.1%. The coefficient is significant at 1% level.

In column (2) we also consider firm size dummies: Medium Firm (20-99 employees) and Large Firm (100 or more employees)<sup>5</sup>. Our results show that firm size does not have an impact on the probability of job search. This result is probably due to the fact that, controlling for labour income variable, the wage level captures the effect of large firms that generally pay higher wages to reduce the probability of worker turnover. In particular, large firms have substantial firm-specific screening investments in their workers and so firms encourage their employees to search less for a new job. In fact, if we do not control for individual labour income, we obtain the traditional effect showing a drastically decrease in the job search as the firm size increases.

In column (3) we control for the professional qualifications of private and public employees. It emerges that white collars and teachers search less respect to the blue collars, whereas cadres and manager variables do not show significant differences in job search behaviour.

Column (4) shows the results for the self-employed sub-sample. It emerges that the education level does not have a statistically significant effect for self-employed on the probability of on-the-job search. Women and men do not show significant different levels in their job search activity.

#### **4. Concluding Remarks**

This study has explored on-the-job search behaviour of workers in Italian labour markets. Due to a lack of available data, allowing to match workers' and firms' characteristics with decisions of turnover, we have used on-the-job search intensity as a proxy of workers job mobility. This is the first empirical analysis of on-the-job search for Italian workers.

Our econometric estimations for Italy largely confirm the main findings obtained from turnover studies for other countries but in addition we provide some novel findings.

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<sup>5</sup> We have six categories for firm size and we tried to use all of them but the results are very similar.

We find that the probability of being engaged in job-search activities is higher for males, when wage is lower, for workers with low tenure and higher levels of education and for residents in large cities. Public sector workers show a considerable lower probability of on-the-job search, compared to private sector workers, even controlling for wage levels, suggesting higher satisfaction on the job due to job security or other unobservable aspects. Especially in Italian labour market public sector reflects better worker conditions in terms of strong job security that reduces the threat of unemployment among public workers, higher job stability, better social climate, lower pressure to put effort on the job, thus affecting productivity levels. All those factors reduces the probability to search for a new job for public employees with respect to private one.

Number of jobs held such as the average number of hours worked par week have a positive effect on the probability of searching to another job. Married women are less likely to be looking for an alternative employment and there is a very large effect from the presence of children on female job search. White-Collars and Teachers search much less than Blue-Collars. As this study is based on household survey data, it was possible to include firm characteristics only by introducing firm size and professional qualifications as controls variables. Further research into this topic should link employer-employee data providing much more detailed firm-individual level information not available in this phase on the analysis.

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