Università degli Studi di Salerno
CENTRO DI ECONOMIA DEL LAVORO E DI POLITICA ECONOMICA

Giuseppina Autiero*, Fernanda Mazzotta*

THE CHOICE OF SEARCH METHODS: SOME EMPIRICAL EVIDENCE FROM ITALY

** University of Salerno, Department of Economics - CELPE*
Via Ponte Don Melillo, Fisciano, Salerno.
pinaut@tin.it
mazzotta@bridge.diima.unisa.it

DISCUSSION PAPER 55
giugno 2000

Index

Abstract

In labour market part of the coordination process involves the matching between job skills and vacancies requiring specific skills. On the side of unemployed workers, the process requires a searching activity based on the gathering of information on available vacancies, the related wages and skills. The distinction among search methods plays a significant role as to the success of individual job search. The factors characterising the methods and the individuals searching for a job influence their choice. The specific aim of this empirical analysis is to understand how individual look for a job and, thus, how they decide to choose the search methods drawn from the set of search actions as specified in the 1993 Bank of Italy Survey.

Theme

labour supply

Keywords

labour supply, unemployment: Models and job search
J22, J64

1. Introduction

It is well known that the lack of information often leads to the difficulty of decentralised decision units solving coordination problems through market functioning. In labour market the lack of information is often characterised by asymmetric information on heterogeneous labour skills and the related productive capabilities [Spence, 1973] and coordination mainly concerns the matching of vacant jobs with unemployed individuals, which results from a costly and time-consuming process. Coordination involves also the matching between job skills and vacancies requiring specific skills. This process is characterised by the existence of uncertainty as unemployed individuals know the general features of wage distribution in an area but ignore which firms are offering each wage. Accordingly, coordination on the side of unemployed workers involves a searching activity based on the gathering of information on available vacancies, the related wage and skill, whereas on the side of firms the gathering of information on the characteristics of individuals willing to fill the vacancies like their skills. As to job search of unemployed workers, an important factor is search intensity, the fraction of the period considered during

which workers are actively searching[1]. Search intensity affects the transition probability into employment by influencing the probability of receiving a job offer. Its choice is determined by the factors that contribute to worker's expected utility during search and can be characterised by several methods with a different productivity and varying costs in terms of time and pecuniary search costs. Thus, the distinction among search methods plays a significant role as to the success of individual job search.

Since recently empirical studies have focussed on the decision-making process of individuals looking for a job and on their searching behaviour in order to verify the effectiveness of the search methods adopted, including informal networks [Casavola-Sestito, 1995; Holzer, 1988; Montgomery, 1991]. It is generally accepted that people can quite often get information on job vacancies through friends and relatives, as it is less costly in terms of time and money. On the one hand, employers may regard referrals coming from their current employees, acquaintances and relatives as more reliable and informative than job applications. On the other hand, unemployed workers may consider their employed friends, relatives and acquaintances as a very useful and reliable source of information on the type of job available, the skills required and work environment.

Starting from this analytical strand, in this paper we will focus our attention on the factors affecting the individual choice of different search methods and, in particular, on resorting to family-and-friend networks. Our aim, in fact, is to verify for what type of individuals looking for a job this channel is productive and less costly and is used as a device to overcome asymmetric information problems. The analysis cannot overlook one of the structural characteristics of the Italian economy defined by its striking regional dualism (Amendola, Caroleo, Coppola, 1999). In fact, from the sixties to the nineties the difference between the unemployment rate in the South and the one in Centre-North rose from about one to twenty percentage points. In 1998 the unemployment rate in the South was 22%, while in the Centre-North was

* We are grateful to the participants in 1999 EALE conference for their helpful comments.

1. Search intensity is an important factor for firms as well, which is not taken into consideration in this paper.

about 8%. Though the labour market dualism between the North and South has been prevalently sharpened by a negative trend in labour demand in Southern Italy, there are also other variables that can be considered as partly explaining the difference between the two areas like structural and institutional factors (Costabile, 1996): nominally the role of family, cultural heritage, the weight of informal sector, social discouragement effects and the efficiency of public institutions. For this reason we retain important to analyse the behaviour of labour supply by comparing the North-Centre with the South of Italy.

Our analysis is empirical and takes into consideration the case of Italy using the 1993 Survey of Household Income and Wealth (SHIW) of the Bank of Italy. The paper consists of the following parts: in §2 the theoretical aspects are underlined; in §3 the dependent and explanatory variables are illustrated; in §4 the data and the econometric model are explained; in § 5 we describe the empirical results; §6 contains the conclusion.

2. How individuals search: theoretical aspects

As partly specified above, the objective of this empirical analysis is to understand how individual look for a job and, thus, how they decide to choose the search methods within the set of methods as will be specified below following the Bank of Italy Survey. It is well known from the literature on job search that the relevance of this aim is related to the fact that the intensity of search can affect the transition probability of individuals from unemployment into employment. Accordingly a crucial role is played by the factors affecting the behaviour of unemployed when searching for a job. Individual behaviour concerns the choice not only of the time to devote to search but also of particular search methods which are known as being more effective as to the specific job individuals look for, according to their own characteristics and the socio-economic features of their geographical area. In this respect, Osberg highlights the fact that 'individuals have different levels of skill

and possess different resources, while fish (jobs) of various types are known to respond to different strategies' (Osberg, 1993: 394). This is due both to the recruitment strategy of employers and to the specific economic and institutional characteristics of the country where individuals live, constraining their choice of search methods. As to the latter aspect, for instance, in Italy often one has to be registered in the queue at the state job agency in order to be regularly hired in some formal economic sectors. The above discussion implies that the choice is based on the evaluation of costs and benefits associated with search intensity along with the perceived productivity of specific search methods in terms of generating job offers.

Taking into account the above considerations, we decided to analyse the impact of several elements on the choice of *specific search methods* as described below, rather than either on the choice of the number of search actions characterising the search method used by unemployed, or on the time spent searching. This does not rule out the analysis of the factors affecting the choice of search intensity, which will be considered along with the others.

The theoretical background partly underpinning our empirical analysis draws on a standard job search model in which search intensity is chosen in order to maximise the present discounted value of unemployed workers' income [Pissarides, 1990][2]. As the distinction among the types of search methods is crucial, we draw on the theoretical model elaborated by Holzer [1988], who considers the optimal choice of search intensity concerning different methods. The choice is influenced by the productivity of the search methods in terms of receiving job offers, their own costs, non wage income and income expected from employment. This theoretical background underpins the choice of the explanatory variables as well and, consequently, their expected impact on the selection of a specific search method follows the predictions of theory. Thus:

- The variables representing the income of individuals when unemployed (UY) like family financial support, are expected to

2. For other theoretical models with the choice of search effort see Barron and Mc Cafferty (1977), Barron and Mellow (1979), Seater (1979) and Burdett (1980). For a complete survey see Amendola, (1984).

have a negative impact on the intensity of search by increasing the utility from not being employed.

- The variables characterising the costs of search (C), nominally the pecuniary ones and the value of leisure to individuals. Temporary changes are expected to negatively influence search intensity by only reducing current utility. The permanent ones positively affect time and effort devoted to search if their positive expected effect on future utility from becoming employed[3] is greater than the negative effect on current utility, given the independence of each search method with respect to the others in the production of job offers. This implies that when search is highly costly individuals may prefer to search more intensely rather than affording higher costs in a greater span of time. On the contrary, if the expected effect on future utility from employment are smaller than the negative impact on current utility, cost variation inversely influence search intensity. (Holzer, *idem)*.
- The variables individuating the expected income from being employed (EW) are anticipated to have a positive impact by increasing the utility from employment.
- The variables representing the productivity of search methods across individuals with different characteristics (Π), are anticipated to have a positive effect on search intensity in case of temporary changes. If changes are permanent one has to consider the gain in utility from future employment along with the expected negative influence of productivity changes on the latter[4]. If the net result is positive, variations in productivity always increment search intensity. Whereas if the net result is negative, due to the prevalence of the negative effect of productivity changes, search intensity and productivity are inversely related to each other (Holzer, *idem*).
- The variables indicating labour-market tightness[5] (Pissarides, *idem*),(T) are expected to positively affect the productivity.
- Moreover, as previously specified, we hold that the productiv-

3. For instance, rising costs reduce reservation wages and increment the utility from work in the next period.

4. For instance, an increase in productivity raises reservation wages and reduces the utility from work in the next period.

5. Number of vacancies over the number of unemployment.

ity of a specific search method is linked to the type of job one has been looking for and that individuals have learnt it through their own search experience or the experience of others. This implies that in the former case, resorting to a search method may result effective if one searches in a particular economic sector and less effective if the same search method is used to look for a job in another sector. Thus, among the explanatory variables there are some variables representing the composition of the economy by sector ($L\Pi$) as it is also believed that individuals tend to look for a job in the economic sector prevalent in the geographical area to which they belong, and that may have learnt how to search also from the experience of the people employed in their own family.

In our paper we also consider resorting to family-and-friend networks as a search method. Networks are taken as the complex of family members and friends' personal ties, which are supposed to facilitate the access to information and its transmission by reducing the time taken to get it, on the one hand, and to support its reliability on the other. Information in turn concerns, for instance, job vacancies, the skills required and the skills of unemployed workers. This helps the matching between unemployed workers and vacancies. The embeddedness in networks of social relations can be considered as a source of mutual trust among the agents involved. As, for instance, the iterated interaction not only between agent *i* and *j* but also between agent *i* and the other members of the network fosters the emergence of reputation mechanisms. Accordingly if an individual embedded in the network provides information both on the skill of an unemployed worker to a potential employer and on the characteristics of the job available to an unemployed individual, the reliability of the information may be guaranteed by the reputation effect. As cheating behaviour on information, can be sanctioned by all the individuals belonging to the network (multilateral punishment strategy) (Raub-Weesie, 1990). Thus, the choice of this search method is also based on the evaluation of the reliability of information, the rapidity of its transmission and accordingly the productivity. As networks of personal ties are more frequent in small communities where individuals are more likely to know each oth-

ers, the variables considered as affecting the choice of this search method, are characterised by the dimension of the community which unemployed belong to (N). Thus, we expect that being in a small community induces individuals to resort to informal networks to find a job. Social ties developed through past job experience are taken into consideration as well.

3. Dependent and explanatory variables

The dependent variable is the probability of the i*th* unemployed selecting the j*th* alternative among the different types of search methods, SMs, whose choice is affected by the explanatory variables for any given individual:

$$SM_{ij} = f(UY_i, C_i, EW_i, T_i, \Pi_i, L\Pi_i, N_i) \qquad (1)$$

As in the BI Survey the questions concern several types of search actions[6], we decided to aggregate them according to a homogeneity criterion reflecting the related type of effort (**Tab. 1**). In fact, going to the state job agency, to personnel selection agencies and inserting curricula in a data base require an *una tantum* effort. Whereas, taking a competitive examination to enter the Public Administration, looking up into the newspaper and answering job adverts, sending curricula and going for interviews imply, for instance, constantly checking whether and where job positions have been advertised.

6. Question B15 “How have you searched for a job?” Through: 1) State job agency; 2) taking a competitive examination to enter PA; 3) answering advertisements of job positions on the newspapers; 4) sending curricula; 5) personnel selection private agencies; 6) signalling of parents, friends and relatives to potential employers; 7) inserting personal data in a data base; 8) starting an autonomous activity.

TAB. 1 - SPECIFICATION OF EACH SEARCH METHOD

TYPE OF SMS	**Percentage of unemployed who used each SM**		
	Italy n. 1962	**North-Centre n. 825**	**South n. 1137**
Informal channels: signalling of relatives, friends and acquaintances of available unemployed workers to potential employers; other types of informal search not specified (**INFOR**).	15	13	17
Formal channels: going to the job state agencies (collocamento), to personnel selection agencies and inserting curricula in a data base (**FORM**).	16	11	19
Informal channels + Formal = **INFORFOR**	14	6	19
Direct channels: taking a competitive examination to enter the Public Administration (PA), looking up into the newspaper and answering job adverts, sending curricula or beginning an autonomous activity (**DIR**).	15	21	11
Informal + Direct = **INFORDIR**	11	14	9
Formal + Direct = **FORMDIR**	15	18	12
Informal + Formal + Direct = **ALL**	14	16	13

It is useful to underline the main difference between the formal and the direct channels on the one hand, and the informal channel on the other. The former are solely based on a voluntary choice whereas the latter is not only defined by an intentional effort to search but also by the gathering of information as a result of the externality from being embedded in family-and-friend networks. Thus, the informal channel embodies the variable we call informal network deriving from the signalling of relatives, friends and acquaintances of available jobs to potential employers. Which is held to imply both that unemployed workers have been informed on the vacancies available and that individuals signalling the availability of

unemployed workers also guarantee for their skills and their suitability to the job. Friends, relatives and acquaintances may know the employers either because they are still or used to be their employees, or through other channels.

We have also considered each SM associated with the others (FORMDIR, INFORDIR, INFORFOR, INFORDIR) and the combination of all SMs (ALL), which are taken as capturing search intensity and the complementarity (substitutability) among the methods used.

The variables have been specified as follows:

- Individuals' age (AGE), affecting the productivity of each search method as it can induce a discriminating behaviour of employers, and representing the value of leisure.
- A set of dummies indicating the geographical location (NORTH and CEN - Centre) considered with respect to the South, which are taken as representative of the level of economic activity in each area and, thus, as proxies of the tightness of the market. Notoriously, the economic activity level is higher in the North and the Centre of Italy in comparison to the South.
- A dummy variable for gender (FEMALE), influencing both the productivity of search methods via a discriminating behaviour of employers, and the value of leisure to women.
- Two dummy variables for education respectively defined as compulsory and high secondary education (COMPULSORY and HIGHSEC), considered with respect to university education, influencing the productivity of each search method through a discriminating behaviour of employers as the education level can be taken as a signal of individual skills. They are considered also as a proxy of the wage expected from work.
- A dummy corresponding to having had at least a job in the past (EXPER), which represents individual work experience and implies that human capital is based on the learning-on-the-job process. It is a signal of the skills of unemployed to employers and affects the productivity of search methods. Moreover, we decided to take it as a control variable of the network impact as individuals through their past work experience may have more easily access to the information on va-

cancies and the required skills in their previous work place or elsewhere.

- A set of dummies representing the number of inhabitants of the municipalities (*comuni*) to which individuals belong (COM020, COM2040, COM>500, (.000)) with respect to the municipalities of medium size (COM40500, (.000)), which embodies the impact of being embedded in informal networks where people tend to know each others.
- The number of employed in a family (NEMPL), which embodies family financial support.
- Two dummy variables indicating the individual position in a family: being head and son with respect to being spouse (HEADFAM, SON), which are considered to affect individuals' value to leisure and, therefore, search costs in terms of time. They also capture the marginal value of income related to the individuals' financial responsibilities in a family, which allows considering this variable as a proxy of search costs across individuals rather than the costs of each search method.
- The composition of employed by economic sectors taken as the ratio of employed in a specific sector over the total number of employed, based on the distinction by gender and the province to which individuals belong. The economic sectors considered are agriculture, manufacturing, construction**,** transport, trading, banking, public administration and other sectors like services to families (AGR, MANU, BUILD, TRANS, TRAD, BANK, PA, OTHER). These variables capture the fact that the productivity of a specific search channel is influenced by the type of job that individuals have been looking for according to the economic activity prevalent in the area where they live in. It is assumed that they have learnt how to look for a job through their search experience and that, thus, use the search method more respondent to each specific economic sector. This allows considering the productivity of search methods as influenced by the economic sector characterising the geographical location of unemployed.

TAB. 2 - SPECIFICATION OF THE INDEPENDENT VARIABLES

UY = income of individuals when unemployed.	**NEMPL** indicating the number of employed in a family embodying family financial support.
C = costs of search in terms of time and money.	**AGE**; **FEMALE**; **HEADFAM** and **SON** indicating the individual position in a family: being head and son with respect to spouse.
EW = expected income from being employed.	**COMPULSORY** and **HIGHSEC** education.
T = labour-market tightness.	**NORTH** and **CENTRE**, indicating the geographical location.
P = productivity of search methods across individuals with different characteristics.	**AGE**; **FEMALE**; **COMPULSORY** and **HIGHSEC**; **EXPER** corresponding to having had at least one job in the past and signalling skills to employers.
LP = the productivity of a specific search method, linked to the type of job one has been looking for.	**AGR**, **MANU**, **CONSTR**, **TRANS**, **TRAD**, **BANK**, **PA**, **OTHER**, the ratio of employed in a specific sector over the total number of employed, based on the distinction by gender and the province to which individuals belong.
N = being embedded in networks of social ties.	**COM020**, **COM2040**, **COM>500**, **(.000)** representing the number of inhabitants of municipalities with respect to COM40-500(000); **EXPER.**: social ties developed through past job experience.

4. Data and econometrics aspects

The data used in this paper are drawn from the 1993 Survey of Household Income and Wealth (SHIW) of the Bank of Italy. The SHIW surveys a representative sample of the Italian resident population and collects detailed data on demographics, household's consumption, income and balance sheets, and also on labour and job search condition of families' members[7].

7. In the SHIW there is not any information about the duration of unemployment.

The sample used for the estimates is taken from the set of individuals seeking for a job in 1993 (n. 2.402), from which we excluded the employed and those in the Redundancy Fund all over 1993. The other individuals partly remained unemployed over the year (n. 1.488) and partly modified their labour condition during the same period (n. 529). From the latter we excluded the individuals who were self-employed at the end of the 1993.

The total number of individuals is 1.962 (**Tab. 3**) and 24% (n. 474) changed their occupational condition whereas 76% (n. 1.488) remained unemployed during the 1993. The 99% of the job seekers who changed their labour condition (n. 474) received al least a job offer, whereas the others had a job that they lost at the beginning of 1993, and did not receive any offer. Besides, about 40% were employed during the last three months of the year considered, whereas 78% was employed for a great part of the year. Finally, among those people who did not find a job, only 2,3% received an offer and refused it.

TAB. 3 - JOB SEEKERS CHARACTERISED BY THE NUMBER OF RECEIVED JOB OFFERS

	Total	**0 Offers**	**At least an offer**
Unemployed during 1993	1.488	1.455 (97,7%)	33 (2,3%)
Job seekers who changed their position in 1993	474	5 (1%)	469 (99%)

Source: Elaboration on the Bank of Italy Survey (1993).

As to the distribution of unemployed by type and number of search actions related to each SM, it is possible to see from **Tab. 4** that the percentage of unemployed choosing each SM varies from 11% to 16%. The lowest percentage is for INFORDIR (11,3), while the highest is for FORM (15,6). High is also the percentage of individuals choosing DIR (15,4%) and FORMDIR (14,7%), followed by

the percentage of ALL (14,2%). Lower is the percentage of INFO-FOR (13,6%).

Search actions (Sms) chosen more often alone (14%) or combined with another (40%) are Sm1 (registering in the queue at the state job office - included in FORM) and Sm6 (signalling of parents, friends and relatives - included in INFORM). Nearly 12% of individuals associate Sm1 with Sm6 (INFORFOR).

As to the direct channel (DIR), search actions resorted to more frequently, are sending curricula (Sm4) followed by taking a public examination (Sm2), looking up into the newspaper and answering job adverts (Sm3). The direct search actions generally used alone are Sm4 (5%) and Sm2 (4%). Participation in public examinations (Sm2) along with registering in the queue at the job office (Sm1) are chosen by 4% of the individuals, whereas sending curricula (Sm4) is prevalently associated with family and friend networks (Sm6) (4%). Finally about 2% of individuals associate Sm1 with Sm6 and Sm3, the same percentage associates Sm1 with Sm6 and Sm2 and more than 3% combines Sm1 with Sm6 and Sm4. In conclusion, one can say that search actions are usually combined with others and the relevant regularities are:

1) registering in the queue at the job office combined with family and friend networks (12%);
2) registering in the queue at the job office combined with taking a public examination (4%);
3) resorting to friends and relatives mixed with answering job advertisements in the newspapers and sending curricula (4%).

TAB. 4 - DISTRIBUTION OF UNEMPLOYED BY TYPE (*) AND NUMBER OF SEARCH ACTIONS (1993)

	Number of unemployed by type of search action									
	Sm1	**Sm2**	**Sm3**	**Sm4**	**Sm5**	**Sm6**	**Sm7**	**Sm8**	**Sm9**	
FORM 97% only one Sm	282	-	-	-	23	-	1	-	-	306 *15,6%*
INFORM 99% only one Sm	-	-	-	-	-	272	-	-	25	299 *15,2%*
INFORFOR 96% two Sms	261	-	-	-	16	164	-	-	4	267 *13,6%*
DIR 76% only one Sm 22% two Sms 2% three Sms	-	127	91	151	-	-	-	11	-	303 *15,4%*
FORMDIR 63% two Sms, 29.86% three Sms, 6% four Sms, 1% five Sms	264	136	108	139	41	-	10	4	-	288 *14,7%*
INFORDIR 74% two Sms 24% three Sms 2% four Sms,	-	50	87	136	-	219	-	9	2	221 *11,3%*
ALL 61% three Sms 9.3% five Sms, 2% six Sms, 1% eight Sms.	264	104	127	156	40	277	13	9	3	278 *14,2%*
Total	1071 *54,5%*	417 *21,2%*	413 *21,0%*	582 *29,6%*	120 *6,0%*	1032 *52,7%*	24 *1,2%*	33 *1,7%*	34 *1,7%*	1962

Source: elaboration on BI data.

** The detailed specification of search actions within each SM, corresponds to the following question B15 of the BI survey: How have you searched for a job? through: Sm1) registering in the queue at the job office; Sm2) taking a competitive examination to enter PA; Sm3) answering adverts in the newspapers; Sm4) sending curricula; Sm5) going to private job agencies; Sm 6) signalling of parents, friends and relatives; Sm7) inserting your name in a data base; SM 8) starting an autonomous activity; Sm 9) others; (Sms have been added).*

As to the characteristics of the sample, we can see from **Tab. A1** (**appendix**) that the average age is 28,28 years and is about the same in the different geographical areas. Females are 50% of the individuals in the sample, 57% has only a compulsory school education and is prevalent in the South while individuals with a university degree are slightly prevalent in the North and the Centre. In the South, there is less than 19% of individuals having had at least a job in the past. This percentage rises in the North and the Centre to 43%. In Italy, individuals live prevalently in municipalities of 40.000 - 500.000 inhabitants, and 57% percent of the southern job seekers live in this type of municipality. In the North and in the Centre, there is a higher ratio of job seeker living either in the smallest municipalities or the biggest ones. The average number of employed in a family is slightly higher in the North and Centre (1,08) than in the South (0,89). Regarding the position of individuals in a family, job seekers are mainly sons (64%), heads of a family are prevalently located in the South whereas spouses in the North and the Centre.

Finally, in Italy the ratio of employed by sectors of economic activity shows that the predominant sector regards Public Administration (PA - 44,5%) followed by manufacturing (MANU - 21,2%) and trading (TRAD - 12%). In the South, the percentage of employed in Public Administration is higher (+13) than in the North-Centre, whereas in the North and the Centre the percentage in manufacturing is of 16,2 points higher than in the South.

To test the effects of individual preferences, search costs, and productivity on the alternative probabilities of choosing different types of search, we estimated a multinomial logit model. This model jointly analyses the probabilities of selecting each search method (SM) drawn from the set of the seven types - INFOR, FORM, INFORFOR, DIR, INFORDIR, FORMDIR, ALL - as previously specified.

We estimated the following model:

$$\text{Prob}(SM_i = j) = \Lambda(\beta' x_i) + u_i \qquad \text{for } j = 0,1,2,\ldots 6 \qquad (2)$$

It represents a behavioural equation defining how individuals choose each search method. SMs are the search methods to be chosen, x_i is the vector of characteristics for any individual *i* and

$\Lambda(.)$ indicates the logistic cumulative distribution function[8]. The logit equations are estimated for the whole sample of unemployed (n. 1.962) and separately for the North-Centre (n. 825) and South (n. 1.137).

The multinomial logit has some weaknesses. One is that the choices made are assumed independent of the remaining alternatives. This is known as the independence of the irrelevant alternatives. In order to check for a latent dependence of the disturbances we run the Hausman and McFadden (1984) test, whose result was the acceptance of the null hypothesis of a non-systematic difference in coefficients. As the seven alternatives are mutually exclusive and exhaustive, only six of the seven sets of coefficients are uniquely defined. The logit parameters are somewhat difficult to interpret, for this reason the derivatives are evaluated at the means and are reported in the tables. The derivatives indicate the marginal effect of a change in the explanatory variable on the absolute probability of a given SM choice in the vicinity of the sample mean. The derivatives are reported also for all search methods.

5. How people search: the results of the multinomial logit model

The results of the logit model allow the description of the impact of the independent variables on the probability of using each SM and their combinations (**Tab. 6-8**). The probability estimates, assuming mean values, are showed in **Tab. 5** and the derivatives reported in **Tab. 6-8** indicate the variation in the probability of choosing each SM for each independent variable:

8. For a discussion of the logit framework see Nerlove and Press (1973).

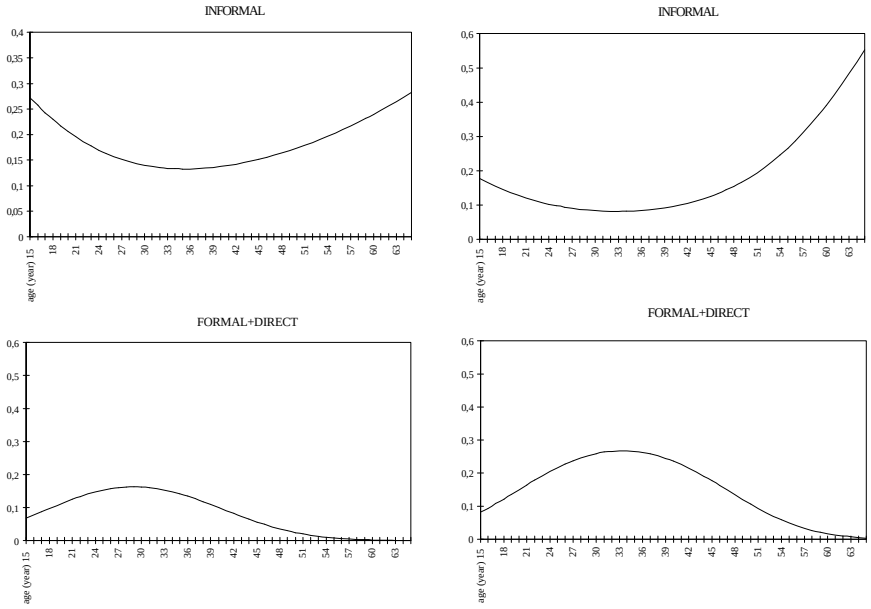
TAB. 5 - PROBABILITY ESTIMATES ASSUMING MEAN VALUES

Search Methods	NORTH-CENTRE	SOUTH	ITALY
FORM	0,100	0,190	0,153
INFOR	0,116	0,174	0,152
INFOFOR	0,059	0,195	0,115
DIR	0,222	0,110	0,157
FORMDIR	0,182	0,111	0,152
INFORDIR	0,146	0,085	0,118
ALL	0,173	0,134	0,154

When age (**AGE**) increases, the probability of using the informal channel (INFOR) decreases until the age of 35 in the South, and 33 in the North-Centre, and then increases. Whereas the probability of combining the formal search method with the direct one (FORMDIR) increases up to the age of 29 in the South, and 33 in North-Centre, and then decreases. From these results, following the theory, one may infer that young unemployed have a temporary lower value of leisure, which will increase with age in their life time. Moreover young individuals have a higher probability of receiving job offers till the average age of 33 (Mazzotta, 1998). The former factor, representing a lower search cost, along with the latter positively influence search intensity characterised by combining an *una tantum* effort (FORM) with a more intensive one (DIR) (**Graph. 1**). This confirms the predictions of the theoretical model considered (Holzer, *idem*).

GRAPH. 1 - ESTIMATED PROBABILITY BY AGE AND AREA

South *North-Centre*



The impact of being in the North (**Tab. 8**) rather than in the South decreases the probability of using the formal channel alone (FORM) by 0,08 whereas increases the probability of associating it with the direct SM (FORMDIR) by 0,09 and also increases the probability of choosing all the strategies (ALL) by 0,08. Being located in the North and Centre increases the probability of resorting to the direct channel (DIR) by 0,07 and decrease the probability of combining the formal channel with the informal one (INFO-FOR) by respectively 0,16 and 0,06. These results, in particular, imply that in the South lower trading externalities decrease search intensity especially with respect to the North and induce unemployed to use more the informal and formal search methods. In this case a permanently lower probability of finding a job,

due to the structural characteristics of the southern economy, goes along with a discouragement effect and does not raise the expected utility from future employment and, thus, search intensity.

In the North-Centre, being a female (**FEMALE**) decreases the probability of resorting to the formal channel (FORM) by 0,11, and to the informal one (INFORM) by 0,08 (but only at the 7% significance level). There is also a positive impact on the probability of mixing the informal type of search with the direct one (INFORDIR) by the 0,16. In the South, it raises the probability of using the formal SM (FORM) by 0,27 whereas decreases the probability of associating all the strategies together (ALL) by 0,11. This result reveals the existence of a discouragement effect only in the South due to the lower productivity of search, which may be due to several factors, like for instance, a stronger discriminating behaviour of employers and female cultural heritage. The latter aspect is especially linked to the fact that in the South women use the formal channel more than anywhere else as they may perceive themselves as being secondary workers. This self-perception induces them to choose the formal channel as it includes registering in the queue at the state job agency, which offers some benefits concerning, for instance, national health service, the state school fees for their sons, the access to council housing. It is important to highlight that the lower probability of finding a job does not positively affect search intensity of women in the South due to the prevalence of the discouragement effect.

Interestingly both in the North-Centre and the South, individuals with compulsory and high secondary schooling (**COMPULSORY** and **HIGHSEC**) have a lower probability of using the direct channels (DIR). Moreover, in the North- Centre the probability of resorting to the informal SM (INFOR) is 0,17 higher for unemployed with a compulsory school education. In the South, the probability of low educated individuals (**COMPULSORY**) resorting to the formal channel (FORM) and combining it with informal networks (INFORFOR) is greater respectively by 0,29 and 0,27, whereas both types have a lower probability of mixing the informal with the direct channel (INFORDIR) by respectively 0,15 and by 0,08. The results show that individuals with low and intermediate education expect to receive a low wage and, therefore, a low utility

from future employment and accordingly resort to less intensive search.

In the North-Centre, unemployed with at least a job in the past (**EXPER**) have a 0,06 lower probability of resorting to the formal channel associated with the direct one (FORMDIR). In the South, job experience increases the probability of combining all the strategies (ALL). In the North-Centre unemployed who have a higher probability of receiving job offers through the signalling effect of their job experience, tend to search less intensively. Following the theory, this can be attributed to the prevalence of the expected negative influence of the permanent productivity increase on search intensity. In fact, it raises reservation wages of unemployed and reduces the expected gain in utility from becoming employed. On the contrary, in the South, the same type of individuals search more intensely**,** which implies that they gain a positive benefit from future employment. This difference can be attributed to the fact that in the South though unemployed have a permanent higher probability of receiving job offers deriving from their job experience, they are aware of a *lower structural probability* affecting all types of individuals. Thus, they try to exploit their own advantage by searching more actively.

The impact of networks is prevalent in the South as in small municipalities (**COM020**, **COM2040**, **(.000)**) the probability of unemployed resorting to family and friend ties (INFOR) taken alone, increases respectively by 0,09 and 0,05 but there is also a 0,05 lower probability that it is mixed with the direct SM (INFORDIR) in the second type of municipalities. Another important result is that in small municipalities (**COM020**) there is an increase in the probability of employing the formal channel (FORM) by 0,07 whereas a decrease in the probability of combining it with the informal one (INFOFOR) by 0,09. Belonging to bigger municipalities (**>500 (000)**) raises the probability of using the direct methods alone (DIR) by 0,07 and of mixing it with the informal one (INFORDIR) by 0,05. Whereas, in the North-Centre individuals in the municipalities with 20.000 to 40.000 inhabitants (**COM2040**) have a 0,08 lower probability of associating family and friend ties with the direct SM (INFORDIR) and a 0,06 higher probability of using the formal channel (FORM). From these results it seems that particularly in southern small municipalities, the informal

channel alone rather than mixed with other search methods has a great importance. One can say that networks due to their externality effect, are considered as more productive in small municipalities in comparison with the bigger ones where the informal channel alone is believed as being not enough productive and, therefore, a more intensive search is chosen. Finally, both in the South and in the North-Centre small municipalities the choice of the formal channel alone may be attributed to the fact that local state job agencies are more effective especially as to the offer of unstable jobs. This seems to be confirmed by the higher percentage of individuals searching on the job in order to find a better or more stable work in these areas.

The marginal effect of the number of employed in a family (**NEMPL**) both in the North-Centre and the South increases the probability of using the direct SM (DIR) by 0,04 and by 0,03. Only in the South it lowers the probability of choosing the formal alone (FORM) by 0,04 and of combining it with the formal one (INFOFOR) by 0,04. This implies that as the direct channel is characterised by a demanding effort in terms of money, it is confirmed the role of the family as providing the financial support to search of unemployed individuals.

In the North-Centre, household heads (**HEADFAM**) do not have a different behaviour from their spouses' whereas in the South their probability of adopting the informal SM (INFOR) is greater by 0,12 and the probability of using the formal channel (FORM) is lower by 0,12. The latter result conforms to the one regarding female unemployed, who use more the formal channel with respect to males. In the North-Centre and the South, sons (**SON**) have a greater probability of resorting to all types of search (ALL) respectively by 0,14 and by 0,11. This may reveal that they have temporary lower costs of search in terms of time, generally due to their young age, than the other components of the family and, thus, spend more time searching. It is interesting to underline that the results also show that household heads and spouses may have permanently higher costs of search in comparison with sons and that may face a reduction in their current utility higher than the expected rise in utility from becoming employed in the future. This leads them to search less intensively.

As to the composition of employed by economic sectors dis-

tinguished by gender and province, one can see that, in the South, for individuals living in areas with a higher ratio of employed in the building sector (BUILD), there is a rise in the probability of resorting to the formal channel alone (FORM) and a decrease in the probability of combining all the strategies together (ALL). Besides there is a lower probability of choosing the informal channel (INFOR) in comparison with those individuals living in areas with a higher ratio of employed in trading (TRAD) and other private services (OTHER). In fact, for unemployed living in areas where the ratio of employed in agriculture (AGR), trading (TRAD) and other services (OTHER) is higher, the probability of resorting to the informal channel (INFORM) increases whereas declines where the ratio of employed in manufacturing (MANU) and building (BUILD) is higher. In the same areas where it is higher the probability of using the informal channel alone, there is a lower probability of mixing it with the formal one (INFOFOR) whereas there is an increase in the probability of combining it with the direct SM (INFORDIR) except for the areas more interested by other services like services to families. For the latter the probability of INFORDIR declines while the probability of associating all the strategies (ALL) raises. The probability of combining family and friend ties with the direct SM (INFORDIR) also increases where it is higher the ratio of employed in manufacturing (MANU). Finally, for individuals located in areas with a higher ratio of employed in transport (TRANS) and banking (BANK), the probability of resorting to the formal channel (FORM) grows and the one of using the direct one (DIR) alone and combined (INFORDIR) declines.

In the North it is confirmed the higher probability of selecting the formal channel (FORM) for individuals living in areas where there is a higher ratio of employed in the banking sector (BANK). It also results an increasing probability of choosing the formal channel alone when there is a higher ratio of employed in Public Administration (PA). Differently from the South, in the North-Centre the probability of associating the informal channel with the direct one (INFORDIR) where it is prevalent the building sector (BUILD), increases.

In conclusion, in the South, according to our hypothesis - that individuals tend to look for a job in the economic sector prevalent

in the area where they live and use the search method more specific to find a job in that sector - unemployed individuals consider family and friend networks alone or combined with the direct channel as effective to look for a job in the agriculture, trading and private service sectors, but not as sufficient in manufacturing. Moreover the informal channel does not seem to be important in those areas where banking, construction and transport are widespread, where, on the contrary, formal SM is taken as more productive. In the North -Centre the results are less clear-cut as individuals do not differ from each other as to their searching behaviour in relation to the economic sector prevalent in the area to which they belong. This result may be due to the fact that almost all types of search methods are equally productive independently of the specific job one has been looking for. But it remains the effectiveness of the formal channel in the banking sector while the importance of networks along with the direct channel -mainly answering job advertisements in the newspapers and sending curricula- is greater in the building one. Such evidence can be explained with the fact that in the North-Centre firms in this sector are bigger and may adopt recruitment criteria other than resorting to the job office.

TAB. 6 - MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS(§)
Number of obs = 825 (NORTH-CENTRE)

Dependent vbs	FORM	INFOR	INFOFOR	DIR	FORMDIR	INFORDIR	ALL
AGE	0,002 (0,326)	-0,021 (-2,919)***	0,010 (1,504)	-0,020 (-1,789)*	0,040 (3,578)***	-0,012 (-1,309)	0,0006 (0,066)
AGEQ	0,000004 (0,045)	0,0003 (3,383)***	-0,0002 (-1,710)*	0,0003 (1,672)*	-0,0006 (-3,575)***	0,0001 (1,101)	0,00003 (0,196)
FEMALE	-0,113 (-2,667)***	-0,077 (-1,820)*	0,017 (0,534)	0,0005 (0,010)	-0,057 (-1,090)	0,163 (3,385)***	0,067 (1,290)
COMPUL-SORY	0,068 (1,182)	0,173 (1,723)*	0,082 (1,457)	-0,257 (-4,151)***	-0,038 (-0,656)	-0,025 (-0,397)	-0,003 (-0,047)
HIGHSEC	0,054 (0,919)	0,154 (1,514)	0,046 (0,795)	-0,216 (-3,495)***	-0,044 (-0,750)	0,002 (0,028)	0,003 (0,052)
EXPER	-0,013 (-0,547)	-0,012 (-0,460)	-0,007 (-0,387)	0,036 (1,044)	-0,058 (-1,807)*	0,035 (1,214)	0,018 (0,581)
COM020	-0,017 (-0,531)	0,042 (1,392)	0,0304 (1,485)	0,041 (1,024)	-0,004 (-0,115)	-0,045 (-1,311)	-0,047 (-1,239)
COM2040	0,061 (2,367)**	0,046 (1,535)	0,026 (1,225)	-0,051 (-1,153)	0,033 (0,876)	-0,081 (-2,147)**	-0,035 (-0,888)
COMP500	0,009 (0,276)	0,008 (0,221)	-0,015 (-0,465)	0,016 (0,321)	0,040 (0,927)	-0,048 (-1,063)	-0,010 (-0,225)
NEMPL	-0,003 (-0,199)	0,0003 (0,019)	0,006 (0,550)	0,035 (-1,916)*	-0,004 (-0,208)	-0,011 (-0,652)	-0,024 (-1,391)
HEADFAM-ILY	-0,040 (-1,049)	0,009 (0,231)	0,014 (0,486)	-0,069 (-1,069)	0,054 (1,018)	0,034 (0,723)	-0,003 (-0,043)
SON	-0,023 (-0,710)	-0,063 (-1,601)	-0,019 (-0,745)	-0,031 (-0,615)	0,028 (0,615)	-0,029 (-0,695)	0,137 (2,880)***
AGR	0,0007 (0,238)	-0,0006 (-0,171)	0,001 (0,719)	-0,003 (-0,873)	0,001 (0,320)	-0,002 (-0,507)	0,002 (0,743)
BANK	0,006 (2,150)**	0,003 (1,144)	0,0005 (0,232)	-0,008 (-1,805)*	-0,002 (-0,548)	-0,003 (-0,829)	0,004 (1,014)
BUILD	-0,004 (-1,176)	-0,001 (-0,463)	0,003 (1,677)*	-0,0009 (-0,231)	-0,002 (-0,535)	0,008 (2,840)***	-0,003 (-0,757)
TRANS	-0,003 (-0,830)	0,004 (1,163)	0,003 (1,204)	-0,003 (-0,582)	-0,0005 (-0,096)	0,0005 (0,098)	-0,001 (-0,192)
TRAD	0,0005 (0,379)	0,002 (1,303)	-0,00003 (-0,031)	-0,001 (-0,488)	0,0001 (0,058)	-0,0006 (-0,395)	-0,001 (-0,514)
OTHER	0,004 (1,480)	0,004 (1,285)	-0,00006 (-0,029)	-0,001 (-0,248)	-0,002 (-0,542)	-0,003 (-0,894)	-0,002 (-0,477)
PA	0,004 (4,174)***	-0,0006 (-0,615)	-0,00007 (-0,091)	-0,0014 (-1,073)	0,002 (1,246)	-0,002 (-2,187)**	-0,0006 (-0,513)
CONS	-0,244 (-1,573)	0,142 (0,751)	-0,278 (-2,154)	0,722 (3,119)	-0,532 (-2,422)	0,258 (1,326)	-0,069 (-0,332)
CHI2(114) =	186,50						

(§) For each variables we reported the derivative (at sample means), and the value of the asymptotic t-statistic, The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero, All variables and samples are defined in Table A1 in appendix.

TAB. 7 - MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS(§)
Number of obs = 1137 (SOUTH)

Dependent vbs	FORM	INFOR	INFOFOR	DIR	FORMDIR	INFORDIR	ALL
AGE	-0,004 (-0,488)	-0022 (-3,065)***	0,015 (1,892)*	-0,009 (-1,526)	0,027 (2,955)***	-0,004 (-0,796)	-0,003 (-0,435)
AGEQ	0,00006 (0,554)	0,0003 (3,213)***	-0,0002 (-1,784)*	0,0002 (1,856)*	-0,0005 (-2,978)***	0,0001 (1,160)	0,00007 (0,645)
FEMALE	0,268 (4,918)***	-0,089 (-1,738)*	0,005 (0,084)	-0,068 (-1,594)	0,015 (0,348)	-0,026 (-0,661)	-0,105 (-2,311)**
COMPUL-SORY	0,287 (2,571)***	0,084 (1,023)	0,271 (2,797)***	-0,257 (-6,417)***	-0,078 (-1,646)*	-0,152 (-4,273)***	-0,155 (-2,932)***
HIGHSEC	0,173 (1,509)	-0,029 (-0,335)	0,074 (0,725)	-0,140 (-3,677)***	0,032 (0,707)	-0,083 (-2,410)**	-0,027 (-0,535)
EXPER	-0,070 (-1,756)*	-0,004 (-0,124)	-0,004 (-0,115)	0,022 (0,772)	-0,011 (-0,349)	0,008 (0,342)	0,058 (1,881)**
COM020	0,075 (2,087)**	0,087 (2,593)***	-0,086 (-2,134)**	0,034 (1,200)	-0,047 (-1,440)	-0,041 (-1,395)	-0,021 (-0,614)
COM2040	0,038 (1,144)	0,054 (1,650)*	-0,029 (-0,843)	-0,017 (-0,591)	-0,006 (-0,228)	-0,052 (-1,975)**	0,012 (0,410)
COMP500	-0,074 (-1,473)	0,003 (0,054)	-0,057 (-1,180)	0,075 (2,349)**	0,007 (0,213)	0,050 (1,836)*	-0,0031 (-0,080)
NEMPL	-0,043 (-2,152)**	0,0007 (0,036)	-0,041 (-2,013)**	0,029 (2,138)**	0,013 (0,981)	0,018 (1,475)	0,022 (1,450)
HEADFAM-ILY	-0,119 (-2,437)**	0,120 (2,739)***	-0,065 (-1,380)	0,064 (1,526)	-0,044 (-0,955)	0,032 (0,965)	0,012 (0,223)
SON	-0,084 (-2,244)**	-0,069 (-1,706)*	-0,047 (-1,194)	0,059 (1,670)*	0,023 (0,773)	0,009 (0,327)	0,108 (2,602)***
AGR	0,011 (2,583)***	-0,006 (-1,183)	0,008 (1,738)*	-0,008 (-1,708)*	0,005 (1,507)	-0,008 (-1,957)**	-0,003 (-0,717)
BANK	0,002 (1,481)	-0,005 (-3,500)***	0,004 (2,250)**	-0,0006 (-0,482)	0,0005 (0,410)	-0,0002 (-0,189)	-0,0007 (-0,489)
BUILD	0,012 (3,253)***	-0,009 (-2,493)**	0,008 (2,237)**	-0,002 (-0,766)	0,001 (0,403)	-0,004 (-1,513)	-0,006 (-2,095)**
TRANS	0,015 (4,795)***	-0,003 (-1,169)	0,003 (0,975)	-0,009 (-2,960)***	0,0002 (0,068)	-0,005 (-1,658)*	-0,0008 (-0,276)
TRAD	0,002 (0,884)	-0,001 (-0,630)	-0,005 (-1,963)**	-0,0003 (-0,154)	0,001 (0,595)	0,004 (2,629)***	-0,0003 (-0,156)
OTHER	0,0006 (0,251)	-0,001 (-0,552)	0,005 (2,195)**	-0,0008 (-0,457)	0,001 (0,530)	-0,006 (-3,124)***	0,002 (1,000)
PA	0,002 (1,631)	-0,003 (-2,615)***	0,005 (3,029)***	-0,0009 (-0,816)	0,0002 (0,160)	-0,001 (-1,471)	-0,002 (-1,218)
CONS	-0,484 (-2,150)	0,721 (3,408)	-0,662 (-2,883)	0,372 (2,200)	-0,410 (-2,267)	0,258 (1,761)	0,204 (1,064)
CHI2(114) =	393,75						

(§) For each variables we reported the derivative (at sample means), and the value of the asymptotic t-statistic, The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero, All variables and samples are defined in Table A1 in appendix.

TAB. 8 - MULTINOMIAL LOGIT ESTIMATES OF THE DETERMINANTS OF CHOOSING THE SEARCH METHODS(§)
Number of obs = 1962 (ITALY)

Dependent vbs	FORM	INFOR	INFOFOR	DIR	FORMDIR	INFORDIR	ALL
AGE	-0,002 (-0,314)	-0,021 (-4,161)***	0,010 (2,093)**	-0,013 (-2,262)**	0,032 (4,532)***	-0,007 (-1,394)	0,001 (0,117)
AGEQ	0,00004 (0,590)	0,0003 (4,496)***	-0,0001 (-2,207)**	0,0002 (2,346)**	-0,0005 (-4,520)***	0,0001 (1,408)	0,00002 (0,231)
NORTH	-0,084 (-2,769)***	-0,018 (-0,625)	-0,162 (-5,739)***	0,066 (2,327)**	0,093 (3,448)***	0,028 (1,116)	0,078 (2,783)***
CENTRE	-0,020 (-0,739)	-0,041 (-1,440)	-0,058 (-2,461)**	0,068 (2,534)**	0,047 (1,744)*	0,019 (0,774)	-0,014 (-0,477)
FEMALE	0,099 (2,872)***	-0,098 (-2,996)***	0,016 (0,556)	-0,031 (-0,933)	-0,028 (-0,833)	0,080 (2,639)***	-0,037 (-1,113)
COMPUL-SORY	0,200 (3,302)***	0,147 (2,420)**	0,178 (3,406)***	-0,264 (-7,782)***	-0,063 (-1,666)*	-0,115 (-3,498)***	-0,083 (-2,046)**
HIGHSEC	0,111 (1,776)*	0,066 (1,049)	0,064 (1,184)	-0,178 (-5,289)***	0,008 (0,221)	-0,061 (-1,874)*	-0,011 (-0,272)
EXPER	-0,046 (-1,982)**	-0,008 (-0,379)	-0,007 (-0,359)	0,036 (1,620)	-0,035 (-1,593)	0,026 (1,348)	0,035 (1,559)
COM020	0,038 (1,585)	0,064 (2,802)***	-0,017 (-0,805)	0,028 (1,212)	-0,037 (-1,433)	-0,044 (-1,947)*	-0,033 (-1,296)
COM2040	0,051 (2,337)**	0,056 (2,480)***	-0,0004 (-0,022)	-0,033 (-1,313)	0,006 (0,268)	-0,072 (-3,109)***	-0,008 (-0,351)
COMP500	-0,018 (-0,591)	-0,0009 (-0,028)	-0,034 (-1,286)	0,045 (1,634)	0,025 (0,933)	0,003 (0,111)	-0,019 (-0,670)
NEMPL	-0,026 (-2,065)**	-0,0001 (-0,010)	-0,020 (-1,805)*	0,032 (2,872)***	0,005 (0,402)	0,006 (0,587)	0,004 (0,324)
HEADFAM-ILY	-0,094 (-2,938)***	0,079 (2,709)***	-0,017 (-0,657)	0,005 (0,148)	-0,011 (-0,298)	0,034 (1,181)	0,003 (0,078)
SON	-0,057 (-2,194)***	-0,069 (-2,431)**	-0,028 (-1,281)	0,013 (0,462)	0,028 (1,044)	-0,008 (-0,305)	0,120 (3,861)***
AGR	0,007 (2,892)***	-0,002 (-0,726)	0,002 (0,996)	-0,007 (-2,015)**	0,002 (0,583)	-0,004 (-1,406)	0,0009 (0,304)
BANK	0,0008 (0,677)	-0,004 (-3,207)***	0,002 (2,239)**	0,001 (0,673)	0,0001 (0,113)	0,0008 (0,692)	-0,001 (-1,052)
BUILD	0,004 (1,932)*	-0,008 (-3,618)***	0,005 (2,413)**	-0,001 (-0,230)	-0,0006 (-0,248)	0,004 (1,905)*	-0,003 (-1,491)
TRANS	0,010 (4,666)***	-0,002 (-0,879)	0,002 (1,014)	-0,007 (-2,326)**	-0,0002 (-0,076)	-0,003 (-1,169)	-0,0003 (-0,110)
TRAD	0,0008 (0,595)	-0,002 (-1,212)	-0,002 (-1,459)	0,0002 (0,151)	0,001 (0,688)	0,001 (1,191)	-0,0002 (-0,115)
OTHER	0,001 (0,831)	-0,0007 (-0,450)	0,002 (1,595)	-0,0001 (-0,079)	0,0004 (0,228)	-0,005 (-2,650)***	0,002 (0,927)
PA	0,002 (2,162)**	-0,003 (-2,801)***	0,002 (2,299)**	-0,0002 (-0,119)	0,0007 (0,553)	-0,001 (-0,868)	-0,001 (-1,035)
CONS	-0,316 (-2,014)	0,584 (3,707)	-0,384 (-2,890)	0,398 (2,354)	-0,491 (-2,865)	0,167 (1,151)	0,043 (0,260)
CHI2(114) =	575,97						

(§) For each variables we reported the derivative (at sample means), and the value of the asymptotic t-statistic, The chi2 reported in the bottom line tests the null hypothesis that all parameters except the constant are zero, All variables and samples are defined in Table A1 in appendix.

6. Conclusions

From the results discussed above, it is possible to stress that resorting to family and friend networks is more widespread in small municipalities in the South where it can be considered as the outcome of individual reaction to the greater uncertainty of the economic environment in comparison to the North-Centre. In addition, unemployed are more likely to use the formal channel similarly to the individual behaviour in small municipalities in the North. The choice of the formal channel alone may be attributed to the fact that local state job agencies are more effective especially in the small municipalities as to the offer of unstable jobs. This seems to be confirmed by the higher percentage of individuals searching on the job in order to find a better or more stable work in these areas. The use of this SM, including mainly registering in the queue at the state job agency, also concerns southern women and, particularly, the married ones. As the benefits from being registered in the queue at the state job agencies are nearly the same all over Italy, this leads to believe that the persisting weak labour condition of women along with a greater uncertainty of the environment in the South brings about a searching behaviour affected by discouragement and aimed at achieving a minimum of security, guaranteed by the benefits of the formal channel.

Individuals searching more intensively, are prevalently characterised by being young (approximately under 30), sons in a family with a temporary lower search cost and a higher probability of finding a job. Moreover they belong to families with a positive number of employed, which confirms that families play the role of providing the financial support to search. A more intensive search concerns also unemployed with a higher expected wage from employment deriving from a more qualified education, and the ones living in big municipalities, where it is less likely being embedded in networks of social ties and individuals resort to impersonal search methods. In the South, search intensity rises for those individuals who have at least a job experience**,** which can be explained as a reaction to a *lower structural probability* of finding a job.

As to the ratio of employed in the specified economic sectors, interestingly the results concerning the South are more clear-cut

than the ones in the North-Centre. In the former case they show that individuals consider the informal channel alone and combined with the direct channel as effective to look for a job in the agriculture, trading and private service sectors. The informal channel does not seem to be important in those areas where banking, construction and transport are widespread, where, on the contrary, the formal search method is taken as more productive. The fact that almost all types of search methods may be equally productive independently of the specific job one has been looking for, can shed some light on the results in the North-Centre, where individuals do not differ from each other in a relevant way as to their searching behaviour. In the building sector, in particular, the importance of networks along with the direct channel differently from the South where it is used the formal channel, can be explained through different recruitment strategies.

Is it possible to derive any policy implications from our results? At this stage, it is possible to give only preliminary indications as policy implications are tightly linked to the effectiveness of search, which will be the object of further investigation. Despite this limit and the structural problems of the economy in the South, one can suggest that policy interventions should be aimed at stimulating a more intensive search of those individuals strongly affected by discouragement like women, and at helping a more focused search of the unemployed who, though looking for a job very intensively- the ones with at least a job experience- may disperse their effort among all the strategies.

APPENDIX A1 - Descriptive statistics

		Type of research							
		formal	**informal**	**informal +formal**	**direct**	**formal +direct**	**informal +direct**	**all**	**Total**
AGE									
NORTH	mean	30,78	32,35	28,04	27,19	27,89	27,96	27,30	28,56
&CENTRE	std dev	10,84	13,79	8,59	9,35	8,01	9,97	9,29	10,15
AGE									
SOUTH	mean	27,84	30,52	28,48	27,91	25,71	28,82	26,50	28,08
	std dev	10,79	12,17	9,55	9,62	5,75	10,15	8,23	9,74
AGE									
ITALY	mean	**28,73**	**31,17**	**28,39**	**27,50**	**26,82**	**28,36**	**26,89**	**28,28**
	std dev	**9,91**	**12,78**	**9,36**	**9,46**	**7,06**	**10,04**	**8,75**	**9,91**
NORTH	dummy	92	106	53	174	146	119	135	825
&CENTRE	1/0	11%	13%	6%	21%	18%	14%	16%	42%
SOUTH	dummy	214	193	214	129	142	102	143	1137
	1/0	19%	17%	19%	11%	12%	9%	13%	58%
ITALY		**306**	**299**	**267**	**303**	**288**	**221**	**278**	**1962**
		16%	**15%**	**14%**	**15%**	**15%**	**11%**	**14%**	
FEMALE	dummy								
NORTH	1/0	58	51	28	104	81	76	86	484
&CENTRE		12%	11%	6%	21%	17%	16%	18%	59%
FEMALE	dummy								
SOUTH	1/0	119	75	87	56	70	45	53	505
		24%	15%	17%	11%	14%	9%	10%	44%
FEMALE	dummy								
ITALY	1/0	**177**	**126**	**115**	**160**	**151**	**121**	**139**	**989**
		18%	**13%**	**12%**	**16%**	**15%**	**12%**	**14%**	**50%**
MALE	dummy								
NORTH	1/0	34	55	25	70	65	43	49	341
&CENTRE		17%	28%	13%	36%	33%	22%	25%	41%
MALE									
SOUTH	dummy	95	118	127	73	72	57	90	632
	1/0	15%	19%	20%	12%	11%	9%	14%	56%
MALE									
ITALY	dummy	**129**	**173**	**152**	**143**	**137**	**100**	**139**	**973**
	1/0	**13%**	**18%**	**16%**	**15%**	**14%**	**10%**	**14%**	**50%**
COMPULSORY SCHOOL									
NORTH	dummy	53	49	24	83	80	66	75	430
&CENTRE	1/0	19%	17%	8%	29%	28%	23%	26%	52%
COMPULSORY SCHOOL									
SOUTH	dummy	164	156	175	46	50	44	59	694
	1/0	24%	22%	25%	7%	7%	6%	9%	61%
COMPULSORY SCHOOL									
ITALY	dummy	**217**	**205**	**199**	**129**	**130**	**110**	**134**	**1124**
	1/0	**19%**	**18%**	**18%**	**11%**	**12%**	**10%**	**12%**	**57%**
HIGHSECONDARY									
NORTH	dummy	28	31	15	67	56	47	54	298
&CENTRE	1/0	16%	18%	9%	39%	33%	27%	32%	36%
HIGHSECONDARY									
SOUTH	dummy	48	33	36	61	84	46	74	382
	1/0	13%	9%	9%	16%	22%	12%	19%	34%
HIGHSECONDARY									
ITALY	dummy	**76**	**64**	**51**	**128**	**140**	**93**	**128**	**680**
	1/0	**11%**	**9%**	**8%**	**19%**	**21%**	**14%**	**19%**	**35%**

A1 - Descriptive statistics (continue)

		Type of research							
		formal	**informal**	**informal +formal**	**direct**	**formal +direct**	**informal +direct**	**all**	**Total**
UNIVERSITY									
NORTH	dummy	3	1	1	21	13	6	8	53
&CENTRE	1/0	9%	3%	3%	62%	38%	18%	24%	6%
UNIVERSITY									
SOUTH	dummy	2	4	3	22	8	12	10	61
	1/0	3%	7%	5%	36%	13%	20%	16%	5%
UNIVERSITY									
ITALY	dummy	**5**	**5**	**4**	**43**	**21**	**18**	**18**	**114**
	1/0	**4%**	**4%**	**4%**	**38%**	**18%**	**16%**	**16%**	**6%**
EXPER (>=1 WORK EXPERIENCES)									
NORTH		39	52	24	73	53	56	56	353
&CENTRE		17%	23%	10%	32%	23%	24%	24%	43%
EXPER (>=1 WORK EXPERIENCES)									
SOUTH	dummy	27	50	45	23	16	21	28	210
	1/0	13%	24%	21%	11%	8%	10%	13%	18%
EXPER (>=1 WORK EXPERIENCES)									
ITALY	dummy	**66**	**102**	**69**	**96**	**69**	**77**	**84**	**563**
	1/0	**12%**	**18%**	**12%**	**17%**	**12%**	**14%**	**15%**	**29%**
NO WORK EXPERIENCES									
NORTH	dummy	53	54	29	101	93	63	79	472
&CENTRE	1/0	20%	21%	11%	39%	36%	24%	31%	57%
NO WORK EXPERIENCES									
SOUTH	dummy	187	143	169	106	126	81	115	927
	1/0	20%	15%	18%	11%	14%	9%	12%	82%
NO WORK EXPERIENCES									
ITALY	dummy	**240**	**197**	**198**	**207**	**219**	**144**	**194**	**1399**
	1/0	**17%**	**14%**	**14%**	**15%**	**16%**	**10%**	**14%**	**71%**
COM020 (COMMUNE 0-20.000 INHAB.)									
NORTH	dummy	12	22	15	41	26	23	23	162
&CENTRE	1/0	13%	24%	16%	44%	28%	25%	25%	20%
COM020 (COMMUNE 0-20.000 INHAB.)									
SOUTH	dummy	50	43	26	21	12	9	16	177
	1/0	28%	24%	15%	12%	7%	5%	9%	16%
COM020 (COMMUNE 0-20.000 INHAB.)									
ITALY	dummy	**62**	**65**	**41**	**62**	**38**	**32**	**39**	**339**
	1/0	**18%**	**19%**	**12%**	**18%**	**11%**	**9%**	**12%**	**17%**
COM2040 (COMMUNE 20-40.000 INHAB.)									
NORTH	dummy	26	25	13	27	31	16	22	160
&CENTRE	1/0	33%	32%	17%	35%	40%	21%	28%	19%
COM2040 (COMMUNE 20-40.000 INHAB.)									
SOUTH	dummy	46	38	39	19	25	12	26	205
	1/0	22%	19%	19%	9%	12%	6%	13%	18%
COM2040 (COMMUNE 20-40.000 INHAB.)									
ITALY	dummy	**72**	**63**	**52**	**46**	**56**	**28**	**48**	**365**
	1/0	**20%**	**17%**	**14%**	**13%**	**15%**	**8%**	**13%**	**19%**
COM40500 (COMMUNE 40-500.000 INHAB.)									
NORTH	dummy	40	46	21	83	65	69	73	397
&CENTRE	1/0	16%	18%	8%	33%	26%	27%	29%	48%
COM40500 (COMMUNE 40-500.000 INHAB.)									
SOUTH	dummy	105	99	133	71	88	67	87	650
	1/0	16%	15%	20%	11%	14%	10%	13%	57%
COM40500 (COMMUNE 40-500.000 INHAB.)									
ITALY	dummy	**145**	**145**	**154**	**154**	**153**	**136**	**160**	**1047**
	1/0	**14%**	**14%**	**15%**	**15%**	**15%**	**13%**	**15%**	**53%**

A1 - Descriptive statistics (continue)

		Type of research							
		formal	**informal**	**informal +formal**	**direct**	**formal +direct**	**informal +direct**	**all**	**Total**
COMP500 (COMMUNE >500.000 INHAB.)									
NORTH	dummy	14	13	4	23	24	11	17	106
&CENTRE	1/0	21%	19%	6%	34%	36%	16%	25%	13%
COMP500 (COMMUNE >500.000 INHAB.)									
SOUTH	dummy	13	13	16	18	17	14	14	105
	1/0	12%	12%	15%	17%	16%	13%	13%	9%
COMP500 (COMMUNE >500.000 INHAB.)									
SOUTH	dummy	**27**	**26**	**20**	**41**	**41**	**25**	**31**	**211**
	1/0	**13%**	**12%**	**9%**	**19%**	**19%**	**12%**	**15%**	**11%**
N. EMPLOYMENT IN FAMILY*									
NORTH	mean	1,03	1,00	1,09	1,23	1,03	1,05	1,05	1,08
&CENTRE	std dev	0,80	0,73	0,90	0,87	0,82	0,80	0,92	0,84
N. EMPLOYMENT IN FAMILY*									
SOUTH	mean	0,71	0,67	0,62	1,32	0,83	0,83	0,83	0,75
	std dev	0,61	0,69	0,69	0,94	0,67	0,73	0,71	0,70
N. EMPLOYMENT IN FAMILY*									
ITALY	mean	**0,81**	**0,79**	**0,72**	**1,08**	**0,93**	**0,95**	**0,94**	**0,89**
	std dev	**0,69**	**0,72**	**0,76**	**0,87**	**0,76**	**0,78**	**0,83**	**0,78**
HEAD OF FAMILY									
NORTH	dummy	12	27	9	15	19	18	12	112
&CENTRE	1/0	19%	42%	14%	23%	30%	28%	19%	14%
HEAD OF FAMILY									
SOUTH	dummy	27	67	44	22	9	21	16	206
	1/0	13%	33%	21%	11%	4%	10%	8%	18%
HEAD OF FAMILY									
ITALY	dummy	**39**	**94**	**53**	**37**	**28**	**39**	**28**	**318**
	1/0	**12%**	**30%**	**17%**	**12%**	**9%**	**12%**	**9%**	**16%**
SON									
NORTH	dummy	47	52	30	119	95	73	100	516
&CENTRE	1/0	15%	17%	10%	39%	31%	24%	33%	63%
SON									
SOUTH	dummy	130	95	126	94	112	67	115	739
	1/0	18%	13%	17%	13%	15%	9%	16%	65%
SON									
ITALY	dummy	**177**	**147**	**156**	**213**	**207**	**140**	**215**	**1255**
	1/0	**14%**	**12%**	**12%**	**17%**	**16%**	**11%**	**17%**	**64%**
SPOUSE									
NORTH	dummy	31	25	12	34	31	21	20	174
&CENTRE	1/0	30%	24%	12%	33%	30%	20%	19%	21%
SPOUSE									
SOUTH	dummy	51	27	23	9	17	10	7	144
	1/0	35%	19%	16%	6%	12%	7%	5%	13%
SPOUSE									
ITALY	dummy	**82**	**52**	**35**	**43**	**48**	**31**	**27**	**318**
	1/0	**26%**	**16%**	**11%**	**14%**	**15%**	**10%**	**8%**	**16%**

**excluded the intervieer if employed.*

A1 - Descriptive statistics (continue)

		Type of research							
		formal	**informal**	**informal +formal**	**direct**	**formal +direct**	**informal +direct**	**all**	**Total**
NORTH &CENTRE									
AGRICULTURE	mean	1,95	2,01	2,70	2,20	2,38	2,14	2,61	2,27
	std dev	3,85	2,85	3,83	4,70	4,16	4,11	5,02	4,23
BUILDING	mean	2,83	4,27	5,50	3,56	3,70	4,66	3,02	3,79
	std dev	4,87	5,71	7,20	5,28	5,37	7,45	5,12	5,81
MANUFACTURING	mean	24,81	31,62	31,16	32,32	29,69	32,39	30,53	30,57
	std dev	14,22	14,91	12,12	16,35	16,49	15,04	16,58	15,69
TRADING	mean	14,85	15,32	14,18	15,21	15,06	15,41	15,45	15,16
	std dev	7,46	7,88	8,45	9,54	9,69	9,13	10,21	9,12
TRANSPORT	mean	2,21	3,30	2,96	2,30	2,65	2,21	2,17	2,49
	std dev	3,15	4,09	3,96	3,30	3,71	3,72	3,42	3,60
FAMILY'S SERVICE	mean	6,71	5,74	5,17	5,78	5,38	5,75	5,82	5,77
	std dev	5,17	5,33	5,64	5,24	5,31	4,81	5,69	5,30
PUBLIC ADMIN.	mean	43,05	34,50	35,22	36,09	38,32	34,75	37,16	36,98
	std dev	13,64	13,05	12,20	13,82	14,71	13,08	14,46	13,95
BANKING	mean	3,61	3,24	3,07	2,55	2,83	2,68	3,22	2,97
	std dev	4,65	3,82	3,81	3,36	3,28	3,70	3,44	3,66
SOUTH									
AGRICULTURE	mean	6,10	9,23	5,66	7,59	6,63	7,83	7,37	7,10
	std dev	9,75	11,70	8,55	9,94	9,71	9,77	9,60	9,95
BUILDING	mean	6,44	7,35	7,62	7,07	6,73	6,83	7,51	7,09
	std dev	7,64	7,24	7,11	6,98	6,91	6,66	7,00	7,14
MANUFACTURING	mean	13,67	13,27	15,05	15,13	14,12	15,30	14,93	14,39
	std dev	10,04	10,16	10,69	12,35	10,31	9,66	10,86	10,57
TRADING	mean	9,56	9,24	8,46	8,90	9,92	10,97	9,52	9,39
	std dev	7,64	7,37	6,27	7,38	7,53	6,14	7,24	7,14
TRANSPORT	mean	4,59	4,03	3,48	2,64	3,40	3,03	4,22	3,73
	std dev	6,26	5,77	4,71	4,15	5,01	4,25	5,65	5,31
FAMILY'S SERVICE	mean	5,57	5,56	5,80	5,23	5,89	3,97	6,38	5,57
	std dev	5,47	8,54	9,06	5,06	6,18	3,65	9,81	7,38
PUBLIC ADMIN.	mean	51,17	48,54	51,19	51,03	50,28	49,69	47,52	50,01
	std dev	19,78	18,12	18,34	18,00	17,71	15,32	17,69	18,14
BANKING	mean	2,90	2,76	3,04	2,40	2,74	2,38	2,56	2,72
	std dev	3,40	2,92	3,97	2,47	2,90	2,18	2,45	3,01
ITALY									
AGRICULTURE	mean	4,85	6,67	4,48	5,07	4,50	4,77	5,06	5,07
	std dev	8,63	10,15	7,72	7,92	7,85	7,81	8,07	8,40
BUILDING	mean	5,35	6,26	7,20	5,06	5,19	5,66	5,33	5,70
	std dev	7,11	6,89	7,16	6,29	6,35	7,16	6,55	6,81
MANUFACTURING	mean	17,02	19,78	18,25	25,00	22,01	24,50	22,50	21,19
	std dev	12,52	14,90	12,72	17,04	15,82	15,40	15,95	15,23
TRADING	mean	11,15	11,40	9,60	12,52	12,53	13,36	12,40	11,82
	std dev	7,95	8,08	7,12	9,22	9,05	8,18	9,28	8,52
TRANSPORT	mean	3,87	3,77	3,37	2,44	3,01	2,59	3,22	3,21
	std dev	5,62	5,24	4,56	3,68	4,40	3,99	4,81	4,71
FAMILY'S SERVICE	mean	5,92	5,62	5,68	5,55	5,64	4,93	6,11	5,66
	std dev	5,40	7,55	8,49	5,16	5,75	4,40	8,07	6,59
PUBLIC ADMIN.	mean	48,73	43,56	48,02	42,45	44,21	41,65	42,49	44,53
	std dev	18,51	17,80	18,41	17,36	17,30	15,97	16,98	17,71
BANKING	mean	3,11	2,93	2,80	2,49	2,93	2,54	2,88	2,82
	std dev	3,82	3,27	3,10	3,01	3,63	3,09	2,98	3,30

Bibliography

AMENDOLA (1984), *Mercato del lavoro e inflazione,* Liguori, Napoli.

A. AMENDOLA, F.E. CAROLEO, G. COPPOLA (1999), “Differenziali territoriali nel Mercato del Lavoro e sviluppo in Italia, in M. Biagili, F.E. Caroleo, S. Destefanis, (edited by), *Struttura della contrattazione, differenziali salariali e occupazione in ambiti regionali,* Esi, Napoli.

E.E. BELLI (1997), “Struttura familiare, partecipazione alla forza lavoro e disoccupazione, La famiglia come ammortizzatore sociale?”, *Lavoro e Relazioni Industriali,* 2, July-December, pp. 103-150.

W.J. BOYES, D.L. HOFFMAN, S.A. LOW (1989), "An Econometric Analysis of the Bank Credit Scoring Problem", *Journal of Econometrics,* 40, pp. 3-14.

A. CAMERON, P. TRIVEDI (1990), "Regression Based Test for Overdispersion in the Poisson Model", *Journal of Econometrics,* 46, pp. 347-364.

P. CASAVOLA, P. SESTITO (1990), “Come si cerca e come si ottiene un lavoro? Un quadro sintetico sull’Italia e alcune implicazioni marcoeconomiche”, in A. Amendola (edited by), *Disoccupazione: analisi macroeconomica e mercato del lavoro*, ESI.

L. COSTABILE (1996), “Structural And technological factors: poverty” in L. Costabile, (edited by) *Istituzioni, sviluppo economico nel Mezzogiorno,* Il Mulino, Bologna.

M. GRANOVETTER (1985), "Economic action and social structure: the problem of embeddedness", *American Journal of Sociology*, 91, pp. 481-510.

W.H. GREENE (1993), *Econometrics Analysis,* Macmillan.

J. HAUSMAN, D. MCFADDEN (1984), “Specification Test for the Multinomial Logit Model”, *Econometrica,* pp. 1219-1240, September.

H.J. HOLZER (1988), “Search Method Use by Unemployed Youth”, *Journal of Labour Economics,* vol. 6, 1, pp. 1-20.

C. JOLL, C. MCKENNA, R. MCNABB, J. SHOREY (1983), “Development in Labour Market Analysis”, George Allen & Winn.

F. MAZZOTTA, (1998), “Salario di Riserva e probabilità di successo della ricerca di lavoro in Italia: una stima sul nuovo panel Istat”, *Lavoro e Relazioni Industriali,* n. 2, pp. 115-173.
J.D. MONTGOMERY (1991), “Social Networks and Labour-Market Outcomes: Toward an Economic Analysis”, vol. 81, 5, pp. 1408-1418.
D.L. MORTENSEN (1986), "Job Search and labour Market Analysis", in O. Ashenfelter and R. Layard (edited by), *Handbook of labor Economics,* Volume II, pp. 849-919.
M. NERLOVE, S.J. PRESS (1973), *Univariate and Multivariate log-linear and Logistic Models*, The Rand Corporation, Santa Monica, CA.
L. OSBERG (1993), "Fishing in different pools: job search strategies and job finding success in Canada in the early 1980s", *Journal of Labor Economics*, vol. 11, n. 2, pp. 348-386.
A. PISSARIDES (1990), *Equilibrium Unemployment Theory*, Basil Blackwell.
RAUB-WEESIE (1990), "Reputation and efficiency in social interactions: an example of network effects", *American Journal of Sociology*, vol. 96, N. 3.
M. SPENCE (1973), "Job market signalling", *Quarterly Journal of Economics,* 87, pp. 355-74.
J.E. STIGLITZ (1987), "The causes and consequences of the dependence of quality on price", *Journal of Economic Literature*, 25, pp. 1-48.

Dipartimento di Scienze Economiche
Università degli Studi di Salerno

Redazione a cura di Gerardo Alfani

Depositato ai sensi di legge