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Résumé

This article aims to study youth employability focusing on the job access channel that provided their entry into the labor market. We examine the determinants of the formal and informal job access channels. For this purpose, we estimate a *Multinomial Logit* model of access channels controlling for selection bias. We use the youth sample of the French National Labor Force Survey (Enquête "Emploi") conducted by the INSEE. Our data provide a set of relevant variables required to identify the model which allows us to study different characteristics of young individuals that affect their access to the current job through a particular channel. First, we notice that young graduates access to their current jobs more often through direct applications and social networks. We find that, in 2010, referred young workers are more likely to be less educated man immigrants, living in rural areas and hired by large firms. However, immigrants were less likely to obtain a job through public employment agencies while the origin effect was not significant in 2007. Moreover, we find that the probability of finding a job through professional contacts increases significantly with the education level for both years (stronger effects for university graduates).

Keywords : job access channels, social networks, Multinomial Logit, selection bias

J.E.L. codes : J21, J64

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1 Introduction

Statistical results for the French labor market are more alarming every year since three decades at least. Last results for the year 2012 show a high unemployment rate (around 10%) for the active population among them high youth unemployment rate is noticed (more than 24%). Despite all goverment efforts, in terms of emphasising apprentceship process and the professionalisation of education, not to mention encouraging firms to hire young people against financial incentives, the situation remains fragile on the labor market. Moreover, although there is an increasing number of social actors involved in helping young job seekers to find a job, their situation is still complicated for many reasons. Not only the recession, but the lack of experience and the limited number of graduated despite the implementation of retention strategies in the school system, might explain high unemployment among young. During the last crisis, unemployment concerned all age categories, but as always, youth was particularly concerned, even though later they took advantage of the rebound in temporary jobs and the slight increase in hiring. As a result, their unemployment rate has slightly decreased of 0.3 in 2010 and became 22,9%.

Other reasons that may explain why unemployment rate is often increasing might be the quality of the transition from school to job (Fondeur and minni, 2004). One also may underline the ineffectiveness of the job search strategies mobilized by young workers in looking for a job as a consequence of their lack of experience and their weak preparation to the entry into the labor market. Hence, entering into the labor market seems to be more difficult after the last recession as the number of job seekers is increasing and job vacancies are becoming rare. Thus, "All is fair in love and war" makes sense on the labor market, when it comes to finding a job every possible way is welcome. Job search strategies differ giving individual types and qualifications. Once a young graduated obtains his degree he starts looking for the most convenient job which fits his training field. In fact, searching is an inevitable step before entering the market and accepting a job offer is a great decision in order to prepare for a future career.

Some job searchers find their jobs fast, while others may take more time searching, what matters is to stay shorter unemployed (see Blanchflower (2011) on the effects of youth unemployment spells on the future outcomes). Yet we still know less about the determinants of the successful job search channels in providing youth access to the labor market after the last recession and in particular about the likelihood of finding a job through social networks. Previous research suggests that economic inequality has a detrimental effect on the trust in formal institutions (Rahn, 2005), which may limit reliance on them (Letki and Mierina, 2012). Thus, if job seekers do not believe the institutional employment intermediates offer real and equal opportunities, they will prefer relying on informal means like friends, relatives or neighbors when looking for a job. Hence, one can imagine that as inequality arises, people will be more attempted to choose social networks to reach their purposes, as they are perceived as more "efficient" than institutional means.

It appears that when high inequality occurs, people will have higher incentives to use

social networks than when resources are more equally distributed (Letki and Mierina, 2012). Inequality is perceived here from a social and economic point of vue, as a consequence of high unemployment rates for youth compared to adults. People often consider social networks as some kind of resources since they can be used in generating personal benefits (Portes, 2000) just like the human capital. Yet, social networks mobilization differs across social groups depending on the context (looking or applying for a job for instance). Portes (2000) gives an individual approach to social capital as a resource. Bourdieu (1986), Coleman (1990), Lin (2001) and other proponents of this approach underline that social capital consists of resources encrusted in social relationships and social structure that can be used to help an "actor" to achieve some specific needs. De Graaf and Flap (1988) argue that the use of information means does not lead to higher occupational prestige or greater income. DeFilipis (2001) suggests that some social networks are more powerful than others and they can yield much more substantial returns to their members.

This article examines the determinants of job access channels in the French youth labor market controlling for a set of variables that may influence the likelihood of obtaining a job through a given access channel. Our purpose is to focus on young active individuals who are more likely to use their social networks compared to other formal access channels in order to provide new conclusions regarding youth employment public policy and the dynamic of youth insertion on the labor market.

The remaining of the paper is as follows. Section 2 presents the main literature related to job search and social networks. Section 3 focuses on our data presentation, variables description and the econometric model. Section 4 is dedicated to the presentation of our results. Both variable descriptions and the result of our estimations are presented in Appendix. Finally, section 5 concludes.

2 Literature background

The use of social networks as a concept in sociology is often common (Burt, 1980). In economics, networking refers to "a personalized exchange among several agents" (Kortum, 2003). Zuckerman (2003) explains the importance of social networks in sociology and defines economic networks first as, particular pattern in economic exchanges, second, as indicators of "primary" relationships among agents, and finally, as "mutual orientation structures". Networks in sociology are not only an important mechanism of description, but also a tool to explore the unobserved heterogeneity (Ioannides and Loury, 2004).

Job search and Social Networks

Since first researches started by Rees (1966) and Granovetter (1973), we know that the set relationship between employers and employees go through relations or formal channels. Several sociologists and economists have focused on the study of the role played by employment agencies implying what Nathalie Chauvac (2011) calls "the intermediates".

These works explain that the role of "hiring intermediates" is not limited to a simple mechanism of informational transmission, but they are also able to change traditional recruitment process and even more, the labor market, which may reinforce inequality and discrimination since the recruitment (in terms of future career or wages). Although different job access channels may persist even while an economic recession such that : job ads, public or private employment agencies, a casual conversation with a friend or a family member around a coffee, may be also a surprising and frequently used mean to obtain a job (Mortensen, 1984). Blau and Robins (1990) show that employed and unemployed workers who use their networks of friends in order to look for a job receive and accept more job offers per contact than their colleagues who use other sources of information.

This might explain why almost 50% of all job seekers hear about their current job positions thanks to their friend or relative (Corcoran et al., 1980). In his paper where he summarizes the findings of 24 studies, Bewley (1999) notes that 30 to 60 % of the obtained jobs are found through friends or parents. Ioannides and Loury (2004) show that the use of friends and family may be useful, not only to find a job, but also to ameliorate the matching quality between firms and workers. Their findings do not support Bentolila et al.'s theory (2008), which shows that personal contacts help finding jobs but not necessarily in positions where workers are more productive. Hence, personal contacts can generate a mismatch between the occupational choice and the quality of the worker's productivity. Bentolila et al.(2008) add that social networks can lead to a "low-quality" workforce, with low returns for firms and a weak overall economic productivity. Zenou (2010) notes that little research investigates the nature of job search methods used by individuals belonging to "ethnic" minorities. He also stresses that we know little about the effectiveness of these methods for these groups especially when we consider the matching quality. This issue can be explained by the recent occurrence of the economic crisis (to analyze its real effects) and the lack of precise data informing about social networking and origins. This explains partially our interest for the INSEE employment survey as it contains relevant information on, for instance, individual origins, job search channels for unemployed workers and job access channels for the occupied ones.

Thus, the economic literature remains to this day less involved when it comes to studying strategies developed by youth in order to integrate the labor market (Kramarz and Skans, 2011). Indeed, young people implement different strategies to increase their chances of finding a job. Some may choose to combine short-term contracts in order to learn some experience and develop a network of professional contacts, while others will choose to invest in job search through formal and/or informal procedures. Most of the literature distinguishes 4 groups of search channels (Zenou et al. (2011), Margolis and Simonnet (2004), Sabatier (2000)) : the "Merchant channel" (which includes personal initiatives in order to contact directly employers or response to a job ad), the "network channel" (which designs asking for help from parents, relatives and friends, but also school), the "intermediary channel" (which gathers local mission for employment, information and orientation organizations, private and public employment agencies) and "competition" (which includes recruitment competitions).

Studying formal and informal job search devices, Lin (99) examines if the most advantaged individuals do not need to use informal means, because they have larger human capital and can apply directly for high status positions. He notes that the answer to this question is mixed. For some jobs with specific requirements (high technology for example), several criteria such as personal skills and the training field may be sufficient to get a job through the formal application. However, for some other particular tasks (high level executives, top managers, etc.), Formal criteria such as the degree are often insufficient to transmit signals like personal skills and the management quality of the candidate and his ability to handle with difficult situations. These characteristics are difficult to observe *ex-ante* so some employers may refer to their personal contacts in order to reduce the risk due to the asymmetry of information on the labor market. Informal channels are necessary for the transmission of information, but their detection using survey instruments, remains a significant methodological challenge (Lin, 1999).

Montgomery models the impact of social interactions on employment transitions and inequalities evoking the strength versus weak ties approach in a social structure context. He argues that social structure consists of a big number of small groups of two connected individuals or *dyads*. For each dyad, Montgomery considers 3 assumptions : both agents are employed, only one has a job, or both are unemployed and the relationship between both members of a dyad forms a strong tie. Montgomery (1991, 1992) predicts higher wages to members of a powerful network regardless of the job access channel. Pellizzari (2003) and Mortensen (1994) emphasize that job opportunities coming from the social network have a wage distribution that dominates the wage distribution of offers coming from other access channels. Pellizzari (2003), adds that referee or recommended candidates have shorter hiring process.

Calvo-Armegnol and Jackson (2002, 2003) show that information transmission to each worker through the social network at the beginning of each period, implies a new employment. If an unemployed member hears about a job opening opportunity, he keeps the information secret. While an occupied member, who heard about a job opportunity, gives the information to each member of his personal network given proportional probabilities relative to the weight of the social link. Granovetter (1974, 1995), pioneer of the strong versus weak ties concept, shows that a key characteristic to determine social networks effects on job search, is the strength of a social tie. He assumes that "strong ties" represent close friends and "weak ties" are acquaintances. He explains that strong ties are more likely to move "slowly" in society. In fact, if one considers an individual randomly and develops his network of ties with his close friends, then with close friends of his close friends and continues this way, so the overall size of the group will be developed slowly.

When it comes to determine their profiles, individuals who manage to get a job through personal contacts are generally less likely to leave it (Datcher, 1983 ; Devine and Kiefer, 1991) and retain it for a longer period (Simon and Warner, 1992). In addition, there is a line of study that focuses on the Neighborhood as a source of information about employment opportunities, and thus attempts to give a more precise content of "friends". Bayer, Ross and Topa (2008), show that those who live in the same block are more than

50% wanting to work together than those in nearby blocks.

Elliott (1999) shows that not only the less educated workers in neighborhoods where poverty is high were more likely to use personal contacts, but these contacts were also the main channel through which these people have found a job. In addition, he shows that about 73 % of jobs in "neighborhoods" with a poverty rate of 40 % were found through informal means, compared to 52 % of jobs in neighborhoods where poverty rate is less than 20 %. Bentolila et al. (2008) show that those who find a job through their contacts seem to be slightly younger, more likely to be man, less likely to be born in U.S and white, rather black or Asian, less educated, more experienced and more likely to work in a small business.

Thus, other than human capital, discrimination in hiring or signals interpretation, comes also job search as a strategic step. It is important especially as it my affect the career path permanently. It might be a success as it might be a failure at the long term. It should be stressed that despite the importance of human capital and signaling in the employability of individuals, it is also important to consider the role played by job search channels specially social networks. Job search can be also defined as an investment since the agent is involved in looking for suitable and long term profitable job offers. In against part, he gives up on gains that he could remove from job opportunities during search period, and therefore he has to accept some costs like current earnings and time loss. However, job search can be successful and cost-effective when it is well targeted, which can compensate search costs. It is worth noting that in "job search" models, the reservation wage plays a major role in decision making (Rioux, 2001).

Margolis and Simonnet (2004) examine whether the technical and vocational education allow the formation of efficient professional networks. They show that for the first stable jobs, more than 50% are obtained thanks to social networks regardless of the educational field (general, technical or vocational). However, when considering the current job, the authors show that the merchant mode (direct approach and job ads) comes first (40%). They also show that 65% of graduated of a business or engineering school, find their first real job through their social networks while this rate drops to 32% for the current job. Thus, they argue that graduating from the technical or the vocational education field emphasizes network creation and allows building strong links with the labor market (except for the lowest level : CAP / BEP) for two reasons. The first reason is that peers play an important role as intermediates. The second explanation of the authors joins Rebick's finding (2000), who shows some recruitment persistence between plants and some universities or training centers forming a specific capital, which allows the company to reduce its research costs and improve the phase of screening and selection.

However, they mention that the school network effect decreases across time as this kind of networks is mainly created during education years for the technical education and allow better labor market insertion. However, after taking into account the quality of the tie and the offer acceptance, they noticed that offers coming from social networks do not differ from those from other sources. This result goes against the findings provided by Pellizarri (2003), who shows that firms reduce the recruitment process when they have

a candidate of their network. He adds that the decrease of job access duration has a double effect as it increases the arrival rate of job offers and reduces the hiring process. Margolis and Simonnet (2004) suggest that networks contribute to simply make people more demanding in terms of wages due to high arrival rates of offers, but offers themselves are similar regardless of the access mode.

Rebick (2000) shows that 60% of recruitments represent a habitual hiring process between several firms and universities as teachers play the role of intermediary agents. His approach is based on the model of Montgomery who justifies the use of networks in the absence of uncertainty on both sides of the labor market. Rebick (2000) emphasizes that the network channel allows benefits for both parties : workers select the most suitable jobs, which also allows firms to increase their profit and so, they can improve the value of their job offer. However, Margolis and Simonnet (2004) argue that labor mobility is not motivated by networks and experience may diminish the role of school networks. They consider two performance criteria : access duration to a first stable job and the income.

The importance of social networks as a job search channel is underscored by numerous studies [1]. Kramarz and Skans (2007) focus on the role of parents (strong ties) and neighbors (weak ties), in terms income and job access. Authors use extremely precise data and are able to analyze ties between the referee (the child) and the referral (father and/or mother). The originality of the study stems from the original database and its ability to provide valuable informations about the school (classes, students in the same class, the training field, etc..), Parents (occupational status of the father and the mother, the characteristics of each company where each parent works, job tenure, wage, education level, etc.). Data they possess allow them to directly measure outcomes at a given company, where parents and children work together while watching what happens for their colleagues and new recruits entering the same plant by other means. They show that obtaining the first stable job in the firm where parents or at least one of them work is very common.

In other words, a firm is more likely to hire a child of its employees rather than another person of the same Class. This effect is particularly strong for men relatively less educated, northern immigrants in manufacturing jobs. They also add that children who followed the same professional field as their father or mother are more likely to benefit from referral hiring. Also, referral hiring is more frequent in less competitive industries and large firms with large number of migrants or low skilled workers. They notice that parents who have the ability to recruit their children, have high wages and are provided with a relatively long tenure in the firm. In addition, the authors underline that the use of informal channels often occurs during periods characterized by high unemployment rates. Moreover, it appears that the starting wages for these individuals are lower than those of individuals recruited otherwise. However, they underline that this initial offset is compensated later on as employees recruited by their parents keep their first job longer than those who do not have relatives in the business.

1. see Ioannides and Loury (2004) for a more recent literature.

3 Data, variables description and econometric specification

In what follows we focus on the methodology adopted in the empirical analysis in order to explain the determinants of the job access channel.

3.1 The Labor Force Survey (l'enquête "*Emploi*")

Since 1950, the Employment Survey conducted by the INSEE, has been the official statistic source to measure unemployment according to the ILO, it also allows to study the career paths of individuals of working age. Since 2003, the quarterly labour force survey is conducted on a sample of the French households and it is carried out continuously every week of each quarter. Questions and variables may be modified from one year to another. At each survey date, each individual is asked about his current situation and its monthly history on the labor market. The surveyed sample is renewed every year (1/6th).

Both surveys exploited in this paper are the French National labor survey of 2007 and 2010 conducted by the INSEE on the French labor force population. This database provides the necessary variables to the identification of the model. Other than the individual characteristics, we find information about the training field and the level of the highest degree obtained, wages, occupational category, the occupational status of previous jobs, the spouse and parents' occupational status, the job search method that generated success for the current jobs, plant's activity and size, the nationality and the education level and field.

In our study, we focus on the characteristics of occupied youth by exploring their job access channel. A special interest is given to social networks (or personal contacts). Hence, in our analysis we only consider young individuals aged of 15-30. The data set has the advantage of being comprehensive, as it covers all categories of the young population coming from all over the country. Therefore, the overall patterns of responses closely mirrored the original population in terms of size, sector and regional distribution. However, we faced some difficulties in using certain variables with too much missed values.

3.2 The Data

We have applied some changes to our data base in order to fit our purposes. Our samples counted initially 94 421 young individuals for the data in 2010 and 70 258 for the data in 2007. However, since our attention is focused on youth employability, we dropped individuals who are more than 30 years old as we only consider in our analysis individuals who are 15-30 years. Then, we kept only the active population (occupied and unemployed) and we rejected the inactive individuals (the NEET and students) as these individuals are, by definition not looking for a job. This second selection criterion leads to the drop of 43 629 observations in 2010 (35 771 students and 7858 NEET individuals) and 32 469 in 2007 (26 858 students and 5611 NEET individuals). We are left with 36,911 individuals in

2007 and 49,555 in 2010 (as we also drop for each year the occupied individuals who didn't answer properly to the access channel that provided them with a job (see next section)). Nevertheless all levels of education are considered in this analysis (from those without diplomas to those with the highest levels of education) in order to study the accessibility to the labor market through a given access channel controlling for the education level.

The application of the selection criteria underlined above, has reduced importantly our data. The sample counts less women than before the restrictions, which means that there are more women studying or following a trainee ship than men. Equally, when it turns to the education level distribution among the sampled population, some modifications should be mentioned. The sample counts less BEP/CAP or college students, less baccalaureate holders, but more BTS/DUT and equivalents (BAC+2 graduates), in addition to the presence of more university graduates and Business or Engineering School graduates. Besides, young people who are 15, 16 and 17 remain under-represented in the final sample henceforth. Young individuals who are 15-25 represent 52.57% and those who are 26-30 represent 47.43%. A coding of the relevant variables for both surveys is described below.

3.3 Variables description

The coding of our variables is described as follows :

- The education level : (1) no diplomas (or stopped before finishing the compulsory education) ; (2) CAP/BEP ; (3) Baccalaureate ; (4) BTS and equivalent ; (5) L3/M1 graduates (Second university cycle) ; (6) M2/PhD (Third university cycle) ; (7) business and engineering school ; (8) Hiring competitions.
- The mother's occupational status : (a) not mentioned ; (b) farmer. (c) self-employed ; (d) executive and intellectual professions ; (e) intermediate professions ; (f) non manual worker ; (g) low-skilled manual worker ; (h) retired ; (i) unemployed or inactive
- The mother's occupational status : (a) not mentioned ; (b) farmer. (c) self-employed ; (d) executive and intellectual professions ; (e) intermediate professions ; (f) non manual worker ; (g) low-skilled manual worker ; (h) retired ; (i) unemployed or inactive
- The spouse's occupation : (a) unemployed ; (b) occupied ; (c) student ; (d) inactive.
- The plant's size (Ref : less than 20 workers) : (a) less than 20 workers, (b) 20-49 workers, 50-199 workers, more than 200 workers.
- The sources used in finding the current job (the access channel **AC**, our dependent variable) : (1) Direct steps ; (2) responding to advertisement ; (3) personal contact (family, friends, spouse ...) ; (4) professional contacts (previous employer or school) ; (5) public employment bureau ; (6) private employment agency ; (7) hiring competition ; (8) others (other channels).

Lin et al. (1981a, p.1165), just like usually concerted in the literature on job search behavior, make a distinction between three different sources used in finding a job which

are : (a) informal personal contacts : ("relatives, friends co-workers, as well as those once or more removed (father's friend, friend of a friend") ; (b) formal contacts : "constructed for the specific purpose of locating and matching job candidates and opportunities" ; (c) person's direct application to an employer (De Graaf and Flap, 1988). We consider personal contacts and professional contacts to be informal contacts and the other categories to be formal contacts, except for the category "others" (3.43% in 2007 and 3.7% in 2010) which could not be classified and is therefore left out of the analysis (See De Graaf and Flap, 1988).

Unlike De Graaf and Flap (1988) and Lin et al. (1981), our dependent variable (the access channel) still takes 7 values, as we consider it more effective to analysis the factors' outcomes on each access source. Besides, we separate free applications from job advertisements (unlike Margolis and Simonnet (2004)) in order to distinguish potential differences of characteristics affecting the likelihood of obtaining a job through each of both. Besides, we divide the informal channel "Social Networks" into two components and therefore two different categories (network of personal contacts and network of professional contacts) for comparison purposes. Moreover we don't combine public and private employment agencies (unlike Margolis and Simonnet (2004)) simply because each of these two intermediary agencies is distinguished by its functioning system on the labor market, means it mobilizes and the target population (age, size and the specific qualifications required). Thus, this will provide us with more informations about the probability of finding a job given a set of exhaustive access channels available on the labor market, and allow us to draw their respective determinants.

3.4 Empirical Specification : the job access channel Modeling

We will focus on the presentation of the results obtained by the estimation of the model parameters that we have introduced above. We have chosen to keep as explanatory variables a set of individual characteristics such that gender (sex), diploma (education), geographic origin (place of birth (foreign born), immigrant(origin)), a variable indicating if the individual lives in a sensitive urban area (ZUS) or in a rural area (RUR), parent's occupational status, number of occupied workers at the household (occuphouse), living in couple (couple), spouse's occupation (spouse occup.) and the plant's size.

As we study factors affecting the probability of entering the job through a particular access channel rather than direct steps (free applications : the reference group), we use a *Multinomial Logit model* of the Access Channel. We use this model as our dependent variable takes 7 exclusive alternatives.

We consider a set of n young individuals from the active population in 2010 and in 2007. Let's denote i as the individual indicator, $i = 1, 2....., n$. j indicates the access channel, $j = 1, 2....., q$ $(q = 7)$.

Y_{ij} denotes the probability that the individual i obtains a job thanks to the access channel j. The model can be written as follows :

$$\mathrm{Y}_{ij}^{t} = F(X_i, \beta_j) = X_i\beta_j + \epsilon_{ij} (1)$$

NB : t is associated to 2010 or 2007 as we estimate the same models on the sampled population of 2007 and 2010 separately. With X_i a vector of individual characteristics that affect the probability of succeeding to obtain a job through a given job search channel and β_j the vector of linear combination parameters that depend on the category j. We consider as assumption that the random term ϵ_{ij} determines the nature of the model and the estimator properties. Supposing that ϵ_{ij} are i.i.d, we are constrained to estimate a *Multinomial Logit* (Green, 2002 ; McFaden, 1974). The probability of finding a job through the alternative j is :

$$\Pr(y_i = j|X_i) = \frac{\exp(X_i\beta_j)}{\sum_{K=1}\exp(X_i\beta_k)} (2)$$

The logit multinomial model will be coherent to the analysis of the determinants of the job access channel, only if we can suppose that being in one alternative is upstream with the fact of participating in the labor market. This likelihood should be affected by characteristics common to both employed and unemployed workers.

Hence, this model supposes that we have to introduce in our estimation, explanatory variables that are observed in all different categories for both type of workers. However, if we consider that finding a job through a given access channel for the occupied workers can be explained by some characteristics (unobservable for the unemployed), then this model is incoherent. Thus, restricting the sample to the occupied workers implies a selection bias. In fact, employability is not a random phenomena, given the fact that there is selection at the hiring process based on several unobservable characteristics.

Taking into account the selection bias problem induces the use of a control function approach. This means to proceed to a two-step estimation [2]. The first step consists on modeling the likelihood of being employed depending on a set of exogenous explanatory variables using a *probit* model. This probability of being employed is determined through the following equation :

$$\Pr(m_i = 1) = z_i\alpha + \nu_i (3)$$

2. The advantage of using this approach compared to the method of Maximum Likelihood is the simplicity of its implementation and its calculations. Its limit is the eventual loss of information on the distribution of the predicted regressors (Stolzenberg et Relles, 1997 ; Nawata et Nagase, 1996).

With $m_i = 1$ if the individual is occupied and 0 otherwise. z_i are the exogenous variables affecting the probability of being employed and define the selection. We take the predicted value of this labor market participation equation for each individual. Indeed this value will be needed to calculate the generalized residual (u_i) proposed by Gourieroux et al. (1987).

$$\mathrm{u}_i = \frac{\phi(.)}{\Phi(.)[1-\Phi(.)]}[s_i - \Phi(.)] = \begin{cases} \frac{\phi(.)}{\Phi(.)} & \text{for the employed } s_i = 1 \\ \frac{-\phi(.)}{[1-\Phi(.)]} & \text{for the unemployed } s_i = 0. \end{cases} \quad (4)$$

With $\phi(.)$ the density function of the probability and $\Phi(.)$ the cumulative distribution function of the standard normal distribution.

This can be identified as the inverse Mills ratio for the entire sample. This term possesses two important characteristics of a residual. First, it has mean zero over the whole sample. Second, it is uncorrelated with the variables that appear as explanatory variables in the first step *Probit* model (Vella, 1998).

At the second step, we model the "choice" of one alternative of access channels. For this purpose, the generalized residual is introduced as an explanatory variable in the equation (5) (which is a variant of equation (2) and where the number of alternatives is limited to 6).

$$\Pr(y_i = j|X_i) = \frac{\exp(X_i\beta_j)}{\sum_{K=1}\exp(X_i\beta_k)} * \frac{\exp(u_i\lambda_j)}{\sum_{K=1}\exp(u_i\lambda_k)} \quad (5)$$

With X_i is the vector of individual characteristics that affect the probability of finding a job through a given access channel. If the coefficient λ, associated to the generalized residual, is significant, then we can conclude that the sample of employed workers is not random.

The statistical association of the endogenous variable and each exogenous variable of equation (2) and (5) will be measured by the odds ratio. Hence, the relative risk of being in alternative m compared to the alternative n taking into account the variations of the variables X_k is given by :

$$\frac{\Omega_{m|n}(x, x_{m|n}+1)}{\Omega_{m|n}(x, x_{m|n})} = \exp(\beta_{k,m|n})$$

4 Results

Table 1 reports the distribution of job access channels used by the youth labor force in 2007. We notice that more than half the individuals of our sample declare they have obtained their current job thanks to their own personal procedures (such that free applications or direct contacts with recruiters). In addition more than 32% confirm they obtained their job through their social networks (personal or professional). Nevertheless, only 7% said they found their current job through public agencies.

Although summary results are definetely not precise and do not give deeper explanations of the profiles of individual accessing to a job through a particular access channel, it provides us with a primary idea about the overall situation and gives us a signal of a potential lack (or loss) of confidence in formal means of job search, specially public and private agencies. Indeed, both public and private agencies figure in the last positions, even after job recruitment competitions.

As we can notice, in 2007, almost 43% of young people without diploma accessed to their current job through social networks (personal and professional), in particular through personal contacts (almost 31%). Equally more than 36% of CAP/BEP graduates obtained their current job thanks to their social networks but in particular through their personal contacts (allmost 28%).

Young workers graduates from business or engineering schools are those how use more the professional network of contacts (19.29%) constituated of their schooling network or previous employers, while the average use of this channel was 11.08% in 2007. However they use less the public employment agencies (2.9%) and private agencies (3.75%).

Bachelor and master graduates are those how succeded the most in obtaining a job through hiring competitions (almost 29%), while the average percentage was equal to 7.13% for all young workers. However only 4.53% and 1.20% of them found a job through public agencies and private agencies respectively. More than 50% of BTS and equivalent diplomas' graduates found their current job in 2007 through direct steps (free applications) and only 6.67% of them found an employment through public agencies.

Table 2 shows the distribution of job access channels given the education level for the 2010 data. Results show that more than 42% of young workers with no diploma obtained their current job through social networks (of both personal and professional contacts), compared to all youth (33%). Yet, only 9.73% of them found their current job through public employment agencies.

The overall result shows that more than 80% of youth without any qualification found their current job either through informal channels or direct applications, while almost 20% of them succeeded to obtain an employment through institutional means (such that public and private agencies or job ads). We also notice same trends for the CAP/BEP graduates who found their job mainly through informal channels and direct approaches even if they used less their social networks of personal contacts than others with no diplomas.

Moreover, the use of social networks is more and less important for those with higher levels of education (university and business schools graduates). University graduates are

more successful in finding a job through the hiring competitions channel. Therefore, M2, PhD owners and college graduates were more successful in obtaining their current job by responding to a job advertisement (in particular college graduates $\approx 12\%$). This can be explained by the high ability of these students to answer successfully to a job offer without the help of a referral or an intermediate.

The most alarming finding, in general, is that public agencies appear in the last positions even behind jobs competition. It is alarming, as we know that these organizations are devoted to accompany job seekers in finding a convenient job. The question we want to answer to is : what is the profile of young individuals who are more likely to use their social networks compared to others who rather use formal access channels ?

After the estimation of our *Multinomial Logit*, we run a significance test of each variable's coefficient. Then we proceed to a classic test of significance level for each explanatory variable included in our model through a Wald test. The result shows that all of our variables contribute significantly in the respective probability of finding a job through any alternative channel.

We also run a test of coefficient equality within two alternatives and we conclude that the role of all our variables on the probability of being in each alternative is significantly different of their respective role on the probability of finding a job through a different access channel. We conclude, globally, that variables introduced at the model contribute differently and significantly on the probability of accessing to a job through each alternative. Hence, we can reject the assumption that two or more categories are dependent ($[\text{Prob} > \text{chi2}] < 0.05$). [3].

Model 1

First, **Table 5** and **Table 6** show the result estimations of our *Multinomial Logit* respectively for 2007 and 2010 controlling for age gender, living area, origin, plant's size, education level and the mother's occupational status (see appendix). Results are not other than the estimates of the probability that an individual obtains an employment through a given job access channel (Personal steps, job ads, personal contacts, professional contacts, public agencies, private agencies or recruitment competitions).

The comparison of our estimation results for both years, shows several differences among youth on the French labor market before and after the recession. Main results concerning education level, is that in 2007 having no diplomas participates significantly in increasing the probability of obtaining a job regardless of the access channel compared to the CAP/BEP holders excepted for hiring competition, the probability is decreased significantly. Moreover, having a baccalaureate degree reduces significantly the likelihood of

3. The Hausman test shows that the odds ratio relative to the choice between two modes is independent of the other terms. The results of the test IIA (Independence of Irrelevant Alternatives) Hausman are available on request from the author.

finding a job through social networks of personal contacts and through public employment agencies.

However, young baccalaureate holders are provided with an increasing probability of finding an employment through job ads, professional contacts and hiring competitions. Same trends are also noticed for the BTS and equivalent diploma holders. University graduates are two times more likely to obtain a job through hiring competitions compared to CAP/BEP holders. However being a business or engineering school graduate contributes positively but not significantly in finding a job through hiring competitions.

We observe, in general, same trends in 2010 as in 2007 for the education level effects. However some changes are noticed for young workers without diplomas, as the effect of education on the probability of finding a job through private channels or professional contacts becomes positive but not significant. University graduates observe their likelihood of finding a job through private agencies becomes significantly increased. However business schools graduates are less likely to find a job through hiring competitions in 2010 even though the effect is not significantly different from zero but the effect of their level of education becomes positive and significantly different from zero in their likelihood of finding a job through private agencies.

In the same context, being a bachelor graduate contributed to the increase of the probability of having a job through private hiring agencies in 2010 but in 2007 this was not the case, as it contributed but not significantly to the increase of this likelihood. The last comments are valuable for the Maser 2 and PhD students who meet the same situation on the labor market like graduated from a business or engineering school except that the latter, observed their probability of obtaining a job through hiring competitions decreased significantly in 2010.

The gender analysis, shows that being a woman decreases significantly the probability of finding a job regardless of the access channel except for public agencies in 2007 and 2010. Therefore, immigrants are more likely to obtain a job through their personal network of family and friends in both years, but being an immigrant had a negative and significant effect on the likelihood of finding a job through job ads or public agencies in 2010. Although, in 2007 this effect was not statistically significant, being an immigrant decreases significantly the likelihood of obtaining an employment through hiring competitions, while it had a positive not significant effect on finding a job through professional contacts.

In 2010, the likelihood of finding a job regardless of the access channel was increased for individuals living in a rural area, if we control for the mother's occupational status. However, in 2007, young workers living in a sensitive urban area were more likely to find a job either through public or private employment agency, but less likely in 2010 to find an employment through answering to a job ad. Foreign born are hence more likely to obtain an employment through job ads but the effect of this factor was not significant for the rest of the access channels.

Examining the age effect on the likelihood of obtaining a job through a given access mode, allows us to conclude that an increase in age has a significant negative effect on the

probability of obtaining a job through professional contacts in 2010. This joins Margolis and Simonnet (2004) who argue that the effect of the professional network developed across the educational period tends to diminish across time. This result is confirmed for different kinds of control.

We also observe the effect of an increase of the number of occupied individuals at the household on the probability of finding a job through a given access channel. We notice that the effect was positive but not significant on the likelihood of finding a job through personal contacts. However an increase of the number of occupied individuals reduces significantly the likelihood of finding a job through hiring competitions in 2007. In 2010, the effect of this variable implies a decrease of the likelihood that the young worker obtains a job through public and private agencies but also through professional contacts.

The role played by the mother's occupational status was mixed. First, in 2010 we observe that young workers whose mothers are self-employed or manual worker are more likely to find a job through social networks of personal contacts. However in 2007, it was also the case of young workers whose mothers are executive managers or have a high intellectual profession. Yet, for these workers the effect was negative when we focus on the hiring competition channel.

Children of mothers who have an intermediate profession status were less likely to obtain a job through personal contacts but more likely to obtain it through hiring competitions. Equally, the mother's executive and high intellectual status contributed significantly to reduce the likelihood of finding a job through public agencies while children of manual worker mother were more likely to find a job through this public channel.

Equally, being a child of an intermediate profession mother reduces the likelihood of finding a job through private agencies. However, children of mothers who work as farmers or self-employed, executive or even unemployed are less likely to find a job through professional contacts. Yet, children of a farmer or a self-employed mother are less likely to pass a hiring competition successfully.

When we consider now the effect of the plant's size, we notice that all types of plants were more likely to recruit young workers through referral hiring (personal and professional contacts), private agencies and job competitions in both years. However, in 2010, firms which counts more than 200 workers were less likely to recruit young workers through job ads and public agencies but more likely to hire them through recruitment competitions and professional contacts.

Young workers who live in couple with an unemployed spouse were less likely to obtain a job through responding to an offer ad, but more likely to find it through personal contacts and public agencies (even if the effect was not significant) in 2007. However for both years, living with an inactive spouse implies an increase of the probability of finding a job through public agencies but reduces the likelihood of finding a job through a job advertisement compared to the situation when the spouse is employed. Those who live in couple were less likely to find a job through personal contacts and professional contacts but more likely to obtain it through hiring competitions, public and private agencies for both years.

Model 2

The estimation results of our second *Multinomial Logit* regression, controlling only for the father's occupational category (see appendix), show that in 2007 young individuals who have higher education levels (BTS and equivalent, bachelors or more) were less likely to access to their current job through their personal contacts compared to the CAP/BEP holders. However they were more likely to obtain it through responding to a job ad, professional contacts but also through hiring competitions. Same trends are noticed in 2010, except that, surprisingly, young business school graduates were less likely to find a job through hiring competitions.

Therefore, youth with no diploma were more likely to find a job through their personal contacts compared to CAP/BEP graduates. Equally workers with no diploma observed their probability of obtaining a job through public agencies increased compared to CAP/BEP graduates.

Focusing on the father's occupational status effect on the probability of finding a job through a given alternative, we notice that those whose the father is self-employed were more likely to obtain a job through personal contacts in 2007 (same effects were underlined when the mother is self-employed). This was also the case for the children of farmer fathers. However, those whose father works as an executive manager, non manual worker or unemployed were less likely to find their jobs through the personal contacts (this negative effect was only observed for children of unemployed fathers in 2010).

Besides, regardless of the father's occupational status, the probability of finding a job through public agencies was decreased for both years. Individuals who were more likely to pass successfully a job competition and obtain a job through this channel were more likely to be children of an executive manager, intermediate professional or non manual worker for both years.

Now considering the role played by the plant's size as a determinant of the access channel, we observe that no matter how bigger is the firm, the effect is always negative on the probability of accessing to a job through personal contacts and job ads in both years except that in 2010 the effect was observed and significant only for the largest firms (more than 200 workers).

Let's now consider the role that plays the spouse's professional situation. In 2010, if the spouse is unemployed, then the likelihood of obtaining a job through personal contacts, job ads (unlike in 2007) and public agencies is increased. However this effect becomes negative for the professional contacts, private agencies and job exams. When the spouse still follows his education, the likelihood of obtaining the job through personal and professional contacts decreases in 2007 but rises in 2010. However, when it is about having the job through public agencies this likelihood increased in 2007 but decreased in 2010 (unlike the case of the first model where we controlled for the mother's status).

The effects of the individual's origin, gender and age are the same for this model as described at the previous one. Young workers living in a rural area have an increased probability of finding a job through job competitions in 2007. In 2010, in addition to

job competitions and personal contacts, job ads are also the job access channels that are more likely to provide a young rural habitant with a job. Yet, those who live in a ZUS were more likely to find their current job through public and private agencies for both years (except that in 2010, these individuals were less likely to obtain an employment through the simple response to a job ad). Besides, we notice that being a foreign born young worker contributed significantly to the increase of the likelihood of finding a job through job ads.

Model 3

Let's now focus on the estimation results presented by the overall model regressed in 2007 and 2010 and including both parents' occupational status. Results show same effect of age for both years. In fact an increase in age implies that the probability of finding a job through professional contacts is decreased, which means that schooling networks are less efficient or useful across time. However older youth is more likely to obtain a job regardless of the channel type (except for the professional network). Same effects also for the gender variable compared to the two previous models, except that being a woman becomes not significant to the determination of the probability of succeeding or not a job competition.

The effect of individual origin is positively significant for the probability of obtaining the current job in 2007 through personal contacts. However young immigrants observe their likelihood of obtaining a job through job competitions reduced. While living in a ZUS contributes to the increase of the probability of finding a job either through public agencies or private agencies, the probability for a rural area young habitant to obtain a job through job competition is also increased.

Focusing on the effects of the father's occupational status, we observe that children of an executive manager, non manual worker and unemployed fathers are less likely to find a job through personal contacts in 2007 (same effects in 2010). However in 2007 only children of self employed fathers observe their probability of finding a job through this channel increased. In 2010 we find same effects but we also observe a positive effect for children of farmer fathers.

Finding a job through job ads was more likely to be probable for children of fathers who have an intermediate profession, non manual or unemployed worker. However being a farmer's child contributed significantly at the decrease of the likelihood of obtaining a job through responding to a job advertisement.

Equally, children of fathers who are farmers, self-employed, executive managers or have an intermediate profession are less likely to obtain a job through public agencies. Besides, all status categories contribute negatively and significantly at the probability of finding a job through professional contacts. However only one positive and significant effect was observed for young workers whose father is unemployed.

Equally, children or farmer and unemployed fathers are less likely to obtain a job through the job competition channel. However, when the young worker is the child of an

executive manager, intermediate worker or non manual worker, the likelihood of succeeding a job competition exam is increased. This effect is proved in 2010 but only when the father has an intermediate profession or is a farmer or a non manual worker in 2010.

Let's now observe the effects of the mother's occupational status in the overall model of 2007 data. We notice that only when the mother has an executive or high intellectual profession, that the likelihood to obtain a job through personal contacts increases compared to the situation when the mother is a non manual worker. Moreover, if the mother is a low manual worker the likelihood of finding a job through public agencies increases.

When we consider the role of the education level on the probability of finding a job through a given access channel, we observe same effects as in our previous 2 models. Indeed, young workers with no diplomas are more likely to find a job through personal contacts compared to CAP/BEP graduates while all other education levels have a significant negative contribution to the likelihood of obtaining a job through this channel.

The likelihood of finding a job through responding to a job advertisement increases with the education level as the probability is even higher for the university graduates compared to the CAP/BEP holders. However the probability of obtaining a job through public agencies decreases importantly and significantly with the education level (for post secondary education).

Moreover, for young workers who are BTS and equivalent holders and young business school graduates are more likely to obtain a job through private employment agencies. This could be explained by the fact that those who follow a technical or vocational education (BTS or business school) are more likely to possess a specific human capital, that's why these individuals may rather choose to mobilize private agencies for there personalized services compared to the public agencies. However in 2010 this effect becomes not significant for BTS graduates as only university graduates have an increasing probability of finding a job through private employment agencies.

Besides, the probability of finding a job through professional contacts also increases significantly with the education level (just like for job ads). Yet, only Baccalaureate holders and university graduates observe their probability of succeeding a job competition test increasing compared to the CAP/BEP graduates. However, we find surprisingly that graduating from a business school reduces the likelihood of obtaining a job through job competitions.

In 2007, the probability of finding a job through personal contacts increases with age. It also increases for the not French born young workers and those whose spouse is still a student. However, if the person is a woman then he/she is less likely to find a job through a personal contact. In addition, a negative effect is also observed for young workers when their father is an executive or a non manual worker compared to the situation when the father is a low manual worker.

Besides, having a low or a high education level contributes to the decrease of the probability of using this informal channel compared to those who have no degree (either they stopped school too early or have never been educated).

In 2010, more factors play a positive role in increasing the probability of finding a job through personal contacts. First, the older is the individual, the more he is likely to find a job through his personal contacts. Equally, this probability increases for foreign young individuals and for those whose father works in agriculture, trade or self-employment sector, and ,may be surprisingly, if the spouse is unemployed.

Therefore, we evaluate the probability of finding a job through the network of professional contacts. In 2007 five variables contributed significantly to the likelihood of accessing to a job through professional contacts. First, all categories of mother's occupational status had a significant positive impact on the likelihood of entering to the current job through professional network of contacts compared to the situation when the mother is low non manual worker. Besides, if the father is unemployed, this probability is increased compared to the situation where the father is a low manual worker.

Besides, individuals who have obtained a bachelor degree, M2 or PhD student and graduates from the top business or engineering schools are provided with high probability of finding a job thanks to professional contacts compared to CAP/BEP graduates. This result can be explained by the intermediary role that play universities but specially business and engineering schools, not only through the development of partnerships with professionals, or forming specific human capital, but also through promoting alumni networks.

Unlike the network of personal contacts, the probability of obtaining a job through professional contacts increases with the education level compared to CAP/BEP holders. We notice in 2010, a positive effect on the likelihood of recruitment through a professional contact (school, training center, previous recruiter or a professional acquaintance) by the large firms.

We find that the father's occupational status has no significant effect on the probability of obtaining a job through professional contacts except for the unemployed fathers (positive effect) compared to when the situation of the father is low manual worker. However gradually as age increases, the likelihood of finding a job through professional contacts decreases. Equally, being a woman affects negatively this probability.

We observe the same result as in 2007 when it comes to the age and gender (being a woman) effect. Like 2007, in 2010 when the father's occupational status decreases the likelihood of finding a job through professional contacts compared to individuals whose fathers are low manual workers regardless of the occupational status.

One of the institutional means of job access that we examine is the hiring competitions which form our 7th group of access channels. For this group, we observe a positive effect as age increases on the probability of succeeding a recruitment exam in each year. Equally only baccalaureate holders and university graduates were more likely to obtain an employment through this channel. This may be explained by the fact that these particular procedures need specific qualifications, particularly when hiring competitions are about high job positions. However, women are also disadvantaged in this group of access channel both in 2007 and 2010. Equally, an increase of the number of employed individuals at

the household reduces the likelihood of finding an employment through job competitions compared to direct steps access channel.

Surprisingly, we notice that when the professional occupation of the spouse is inactive, the effect of this variable is negative in 2007 compared to when the spouse is employed. However in 2010, this effect becomes not significant and when the spouse is a student this likelihood is decreased compared to when the spouse is employed. However, if the father is an executive manager, has an intermediate profession or works as a lower non manual worker, then the probability of finding a job through job competitions increases compared to individuals whose father is a low manual worker. However, in 2010, the effect of having an executive manager father becomes not significant while the effect of having a farmer father increases this likelihood.

In 2010, the likelihood of finding a job through public employment agencies increases both for women (compared to men), and the "older" youth but decreases when the individual is an immigrant. Besides, individuals living is sensitive urban areas (ZUS) are also more likely to find their jobs through public agencies compared to others who don't live in a Sensitive Urban Area. Equally, if the father is unemployed, then the likelihood of getting a job through public agencies increases significantly. However, this probability decreases if the spouse is a student (compared to when the spouse is employed) and whatever is the education level (low or high) while this likelihood increases for those whose spouse is unemployed.

In 2007, we notice a positive effect on the likelihood of obtaining a job through a private employment agency for "older" young individuals and those who live in a sensitive urban area. However when the person is a woman or her father is unemployed, then this likelihood decreases. In 2010, we find the same effects of age and living in a ZUS. However, the spouse occupation has no significant effect in 2010 while the father's occupational status has a significant effect only when the father is a farmer or an executive manager. We also notice a different effect of education in 2010 as only the highly graduated are more likely to obtain a job through this mean compared to youth with no degree.

Conclusion

In this paper, we analyze factors that influence the employability of an individual through the study of the determinants of job access channels. We compare results of two 2 surveys conducted by the INSEE in 2007 and 2010 on young individuals of working age. We study job access determinants before and after the last economic crisis. More precisely, we estimate the probability that a young worker obtains a job through a given access channel.

For this purpose, we estimate a Multinomial Logit, as our dependent variable takes 7 exclusive alternatives. It should be noted that we control for selection bias using a two-step selection model as proposed by Gourieroux et al. (1987). Indeed, we opted for this approach as it is considered as a variant of Heckman's two step selection model

(1979) where the original model is non linear. We first define as a selection equation a Probit model of labor market participation then we use the predicted values of the Probit equation to calculate the generalised residual by Gourieroux et al. (1987). This residual is then introduced in our initial Multinomial Logit as a new explanatory variable. Results show that the coefficient associated to the generalised residual is significant for the public agency channel in 2010 and for public agency and competition channel in 2007, which means that our sample is random.

Our findings show that the use of social networks does not depend on the economic situation, as before and after a recession period, young individuals keep using informal job access channels and rely less on institutional means. Besides, we show that both in 2007 and 2010, the likelihood of obtaining a job through public channels is diminished regardless of the education level except for those with no diploma. Besides, women are less likely to mobilize their social network compared to men. Moreover, we find that women less likely to obtain a job compared to men, regardless of the access channel except for the public access channel.

However, those who manage to find a job through a personal contacts are more likely to be older men immigrants, recruited by larger firms, rather son of a farmer parent or a self employed mother. Therefore, we find that individuals who use their professional contacts are more likely to be high educated (Post baccalaureate and university graduates). This finding joins Margolis and Simonnet (2004) who noticed a positive effect of school networks and peers effects in terms of arrival rates and access duration. However, "older" youth are less likely to obtain a job through their professional network.

Hence, we underline that, as age increases the professional network developed during education years with the help of teachers as intermediates tends to loose its effectiveness and utility across time.

In this paper we aimed to draw some factors that influence the probability of obtaining a job through a given job access channel before and during a recession period. Yet we still know less about the effectiveness of these access channels in terms of matching quality and wages. These different issues will be the subject of our following paper.

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Appendix

Table 1 : Distribution of Job Access Channels by Education Level in 2007

A.C/Education	No degree	CAP/BEP	BAC	BTS/equiv	L3/M1	M2/PhD	Bus.School	Average
Direct steps	41.84	48.30	45.46	50.33	36.81	42.35	41.67	45.75
Job ads	3.14	3.38	4.99	7.80	6.62	8.39	11.61	5.45
Pers. Contacts	31.16	27.83	21.92	15.08	12.55	15.21	15.17	21.80
Prof. Contacts	11.65	8.91	10.88	12.37	9.52	15.54	19.29	11.08
Total Social.Net	42.81	36.74	33.80	27.45	22.17	30.75	34.46	32.88
competition	1.11	2.44	7.60	4.87	28.78	12.50	5.62	7.13
Public agencies	9.34	7.96	7.48	6.67	4.53	4.44	2.90	7.01
Private agencies	1.76	1.18	1.68	2.88	1.20	1.56	3.75	1.79

Source : "Enquête Emploi, 2007", author's calculations

Table 2 : Distribution of Job Access Channels by Education Level in 2010

A.C/Education	No degree	CAP/BEP	BAC	BTS/equiv	L3/M1	M2/PhD	Bus.School	Average
Direct steps	43.32	50.19	48.83	48.51	36.31	39.39	43.98	46.68
Job ads	2.16	3.03	3.30	7.28	6.81	11.13	11.48	4.97
Pers.Contacts	33.15	26.16	21.97	17.34	14.58	13.20	14.06	21.80
Prof.Contacts	9.19	9.18	11.51	14.27	11.28	16.36	18.65	11.66
Total Social.Net	42.34	35.34	33.48	31.51	25.86	29.56	32.71	33.46
competition	0.83	2.32	6.07	4.01	23.10	10.97	4.04	6.05
Public agencies	9.73	7.59	6.60	6.63	5.38	5.95	2.51	6.83
Private agencies	1.62	1.54	1.71	1.96	2.55	3.00	5.29	2.01

Source : "Enquête Emploi, 2010", author's calculations

Table 3 : Summary statistics of the explanatory variables

Name of variables	Description	sample 2007	sample 2010
Observations (N)	Sample size	36,911	49,555
Age :			
15-25		54.20	52.57
26-30		45.80	47.43
M	man	53.60	50.71
F	woman	46.40	49.29
Origin	Being an immigrant	5.86	7.91
RUR	living in a rural area (0, 1)	15.91	17.13
ZUS	living in a Sensitive Urban Areas (0, 1)	9.03	9.44
foreign born	Born in a foreign country	6.91	7.59
Nationalite :	Nationality (0,2)		
French born		93.45	91.27
Foreign born	Foreign and naturalized	6.54	8.73
Cspp :	Father's Socio-professional category (0,6)		
Farm	Farmers	3.81	3.30
self-employed	self-employed/trade/self-employed	10.02	10.07
Executives	Executives/intellectual professions	10.09	10.82
Intermediate	Intermediate non-manual workers	16.17	16.18
Non manual	Lower non-manual workers	11.68	11.69
Manual	Manual workers	38.17	37.51
Retired		1.06	1.00
Unemployed	unemployed/inactive	3.05	3.10
N.M	Not mentioned	5.96	6.78
Cspm :	Mother's Socio-professional category (0,6)		
Farm	Farmers	1.97	1.56
self-employed	self-employed/trade/self-employed	3.64	3.38
Executives	Executives/intellectual professions	3.47	4.16
Intermediate	Intermediate non-manual workers	13.71	14.77
Non manual	Lower non-manual workers	37.59	39.86
Manual	Manual workers	10.03	9.40
Retired	0.56	1.06	
Unemployed	unemployed/inactive	27.17	26.52
N.M	Not mentioned	1.87	2.19
Education :	Education level (0,6)		
N.D	No diplomas	12.06	15.32
CAP/BEP	CAP/BEP certificate	31.72	31.18
BAC	Baccalaureate degree	23.62	22.87
BTS/equiv	Higher technician certificate/other bac+2	16.19	13.77
M1/L3	3rd year Bachelor/Master 1	8.36	8.37
M2/PhD	Master 2/PhD	4.39	5.05
Bus.School	School of commerce/engineering	3.66	3.44
occuphouse	Number of occupied at the household	0-6	0-6
Plant's size	The plant's size (0,3)		
$\prec 20$ workers		36.15	36.41
$20-49$ workers		15.38	15.32
$50-1999$ workers		17.20	16.40
≥ 200 workers		20.75	19.43
Not mentioned		10.53	12.43
Couple :	Living in couple(0,1)		
Yes		44.34	43.35
No		55.66	56.65
Employed	Occupied individuals	83.95	81.23
Unemployed	Unemployed individuals	16.05	18.77

Source : "Enquête Emploi, (2007, 2010)", author's calculations

Table 4 : Summary statistics of the explanatory variables according to the gender

Name of variables	Description	2007		2010	
		man	woman	man	woman
Observations (N)	Sample size	19,710	17,201	26,452	23,103
15-25		55.37	52.84	55.18	51.92
26-30		44.63	47.16	44.82	48.08
Origin	Being immigrant (0,1)	5.80	5.94	6.27	6.74
RUR	Living in a rural area (0,1)	16.47	15.27	18.56	16.79
ZUS	Living in a Sensitive Urban Areas (0,1)	9.13	8.91	8.23	8.41
Foreign born	Born in a foreign country (0, 1)	6.69	7.16	7.33	7.88
Nationalite :	Nationality (0,2)				
French born		93.46	93.44	92.80	92.57
Foreign born	Foreign and naturalized	6.54	6.56	7.19	7.43
Education :	Education level (0,6)				
N.D	No diplomas	15.31	8.31	14.71	8.26
CAP/BEP	CAP/BEP certificate	36.08	26.69	35.91	26.44
BAC	Baccalaureate degree	22.46	24.95	22.36	26.21
BTS and equiv	BTS/DUT/other BAC+2	12.76	20.17	12.15	17.91
M1/L3	Bachelor/Master1	5.56	11.60	6.45	11.56
M2/PhD	Master 2/PhD degree	3.58	5.33	4.32	6.50
College	School of commerce/engineering	4.26	2.96	4.09	3.12
AM :	Job access channels				
Direct steps	Free applications	41.32	47.43	42.45	47.77
Job ads	Job ads	4.53	6.10	4.27	5.38
Perso.C	Family/spouse/friends	26.71	17.27	25.33	17.78
Prof.C	Schoo/prev.employers/prof contacts	9.72	9.14	10.75	10.09
T.social network	Total Social Network	36.43	26.41	36.08	27.87
Public	Public employment agencies	5.76	7.92	5.56	7.72
Private	Private employment agencies	2.00	1.42	2.39	1.43
Competition	job competitions	9.96	10.72	9.25	9.82
Employed	Occupied individuals	86.64	83.16	81.18	81.28
Unemployed	Unemployed individuals	15.36	16.84	18.82	18.72

Source : "Enquête Emploi, (2007, 2010)", author's calculations

Table 5 : The determinants of access channels in 2007 (only CSPM)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.034***	0.097***	0.073***	0.094***	-0.010	0.138***
woman	-0.547***	-0.146*	0.225***	-0.472***	-0.362***	-0.262***
Origin	0.479**	-0.490	-0.252	-0.343	0.242	-2.306***
RUR	0.037	0.069	0.131	-0.078	-0.021	0.241***
ZUS	-0.096	-0.165	0.408***	0.463**	0.110	-0.013
born in a foreign country	0.037	0.362	0.169	0.364	-0.089	0.226
Number of occupied at the household						
occuphouse	0.035	-0.146	0.009	0.125	0.031	-0.212**
Mother's occup. status (Ref : Non manual)						
farmer	-0.246	-0.058	-1.096***	0.443	0.157	0.071
self-employed	0.260***	0.191	-0.146	-0.293	0.020	-0.763***
executive	0.418***	0.237	-0.155	-0.315	0.164	-0.038
intermediate	-0.114*	0.019	0.052	0.152	0.090	0.392***
manual	0.154**	0.145	0.235**	0.370*	0.114	-0.318**
unemployed	-0.057	0.102	0.047	0.105	-0.007	-0.230**
Not mentioned	-0.049	-1.197**	0.476**	-15.868	0.146	-1.196***
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.149**	0.193	0.196*	0.588**	0.268***	-0.438*
BAC	-0.109**	0.225**	-0.007	0.103	0.216***	0.925***
BTS/DUT	-0.477***	0.619***	-0.358***	0.626***	0.223***	0.198
L3/M1	-0.388***	0.712***	-0.634***	0.125	0.458***	2.445***
M2/PhD	-0.249**	0.651***	-0.597***	-0.083	0.696***	1.078***
Business School	-0.384***	1.150***	-1.018***	0.451	0.747***	0.317
The plant's size (Ref : less than 20 workers)						
$20-49$ workers	-0.255***	-0.019	0.105	0.553***	-0.035	0.267**
$50-199$ workers	-0.303***	-0.280*	0.097	1.038***	0.094	0.517***
≥ 200 workers	-0.590***	-0.282***	-0.470***	1.063***	0.008	0.585***
Not mentioned	-0.301	0.019	0.140	0.599**	-0.262**	0.681***
Living in couple (Ref : Single)						
Couple	-0.063	0.098	0.349***	0.399*	0.058	0.195
Spouse occup. (Ref : employed)						
unemployed	0.110	-0.405*	0.042	-0.104	-0.120	-0.188
student	-0.421**	-0.688*	0.413	-0.087	-0.278	-0.043
inactive	0.031	-0.339**	0.210*	0.179	0.068	-0.312**
Intercept	-1.133***	-4.723***	-4.237***	-7.116***	-1.440***	-6.417***
N	17583					
Log-likelihood	-24998.566					
$\chi^2_{(198)}$	3083.58					

Significance levels : $*$: 10% $**$: 5% $***$: 1%

Source : "Enquête Emploi, 2007", author's calculations

Table 6 : The determinants of access channels in 2010 (CSPM)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.034***	0.097***	0.044***	0.068***	-0.014*	0.125***
woman	-0.430***	-0.153**	0.257***	-0.786***	-0.293***	-0.164**
Origin	0.402**	-0.557*	-0.525*	-0.457	0.373	-0.722*
RUR	0.154***	0.279***	0.063	0.156	0.062	0.179**
ZUS	-0.014	-0.334**	0.331***	0.318*	-0.050	-0.035
Foreign born	0.255	0.671***	0.402	0.400	-0.247	-0.309
Number of occupied at the household						
occuphouse	0.048	-0.061	-0.227***	-0.285**	-0.109**	-0.015
Mother's occup. status (Ref :Non manual)						
farmer	0.166	0.343	-0.235	0.254	0.548***	-0.684**
self-employed	0.423***	-0.030	-0.640	0.255	0.287**	-0.557**
executive	0.145	0.117	-0.900***	0.162	0.237**	0.200
intermediate	0.077	-0.021	-0.002	-0.337**	0.031	0.167**
manual	0.248*	0.099	-0.230	-0.437	0.063	-0.309
unemployed	0.016	-0.161*	-0.056	0.178	0.228***	0.024
not mentioned	-0.083	-0.048	-0.052	0.028	0.273***	-0.435***
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.240***	0.126	0.395***	0.008	0.050	-0.763***
BAC	-0.161***	0.106	-0.261***	-0.037	0.257***	0.815***
BTS/DUT	-0.331***	0.638***	-0.412***	0.044	0.534***	0.147
L3/M1	-0.295***	0.977***	-0.081	0.725***	0.688***	2.402***
M2/PhD	-0.514***	1.079***	-0.120	0.631***	0.732***	1.008***
Business School	-0.494***	1.258***	-1.563***	0.699***	0.895***	-0.374*
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers	-0.345***	0.093	-0.015	0.710***	-0.132*	0.520***
$50-199$ workers	-0.489***	0.054	-0.247***	1.084***	-0.119*	1.031***
≥ 200 workers	-0.541***	-0.322***	-0.293***	1.112***	1.341**	
Not mentioned	-0.565***	-0.175	-0.200**	0.950***	-0.234***	1.225***
1.341	***					
Living in couple(Ref : Single)						
Couple	-0.115*	0.113	0.088	0.421**	-0.275***	0.448***
Spouse occup. (Ref : employed)						
unemployed	0.155*	0.185	0.328**	-0.160	-0.052	-0.080
student	0.232	-0.435	-1.466**	-0.160	0.027	-0.774**
inactive	0.117*	-0.115	0.127	-0.083	-0.115	-0.194
Intercept	-1.282***	-5.242***	-2.585***	-5.370***	-0.939***	-7.505***
N	22783					
Log-likelihood	-32264.679					
$\chi^2_{(198)}$	4010.44					

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2010", author's calculations

Table 7 : The determinants of access channels in 2007 (only CSPP)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.033***	0.097***	0.072***	0.094***	-0.011	0.133***
woman	-0.551***	-0.136***	0.220***	-0.491***	-0.369***	-0.289***
Origin	0.431*	-0.446	-0.276	-0.406	0.218	-2.266***
RUR	0.036	0.032	0.124	-0.060	-0.051	0.201**
ZUS	-0.105	-0.173	0.392***	0.482**	0.075	-0.018
Foreign born	0.078	0.354	0.205	0.416	-0.054	0.107
Number of occupied at the household						
occuphouse	0.023	-0.149	0.005	0.076	0.029	-0.229**
Father's occup. status (Ref :Manual)						
farmer	-0.240	-0.433**	-0.815***	0.052	-0.796***	-0.398**
self-employed	0.250***	0.204*	-0.274**	-0.263	-0.296***	0.140
executive	-0.195**	-0.181**	-0.291**	-0.284	-0.275**	0.294***
intermediate	0.007	0.175*	-0.342***	-0.266	-0.158**	0.319***
non manual	-0.213***	0.247**	-0.109	-0.360***	-0.361*	0.718***
unemployed	-0.220*	0.528***	-0.212	-2.122**	-0.372**	-0.629*
not mentioned	0.088	0.087**	0.032	-0.511	-0.209	-0.021
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.136*	0.212	0.184	0.601***	0.258***	-0.408
BAC	-0.102*	0.215*	0.019	0.123	0.248***	0.931***
BTS/DUT	-0.469***	0.625***	-0.304***	0.652	0.287***	0.254**
L3/M1	-0.393***	0.704**	-0.563***	0.150	0.532***	2.536***
M2/PhD	-0.177	0.681***	-0.482**	-0.031	0.832***	1.141***
Business School	-0.323***	1.177***	-0.912***	0.520*	0.881***	0.404**
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers	-0.240***	-0.027	0.097	0.560***	-0.042	0.274**
$50-199$ workers	-0.298***	-0.277***	0.092	1.046***	0.080	0.538***
≥ 200 workers	-0.566***	-0.283***	-0.492***	1.066***	-0.010	0.577***
Not mentioned	-0.300***	0.084	0.125	0.641**	-0.291***	0.686***
Living in couple(Ref : Single)						
Couple	-0.104	0.084	0.349***	0.332	0.067	0.163
Spouse occup0. (Ref : employed)						
unemployed	0.092	-0.407*	0.046	-0.144	-0.142	-0.290
student	-0.453**	-0.681*	0.414	-0.170	-0.286	-0.061
inactive	-0.030	-0.319**	0.170	0.098	0.035	-0.468***
Intercept	-1.011***	-4.724***	-4.019***	-6.737***	-1.221***	-6.441***
N	17583					
Log-likelihood	-24967.772					
$\chi^2_{(198)}$	3145.17					

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2007", author's calculations

Table 8 : The determinants of access channels in 2010 (only CSPP)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.034***	0.094***	0.041***	0.068***	-0.013*	0.126***
woman	-0.433***	-0.156**	0.255***	-0.772***	-0.287***	-0.162**
Origin	0.357*	-0.589**	-0.540*	-0.485	0.399	-0.716*
RUR	0.176***	0.259***	0.051	0.183	0.055	0.203**
ZUS	-0.002	-0.337**	0.299***	0.338*	-0.044	0.003
Foreign born	0.289	0.667***	0.395	0.437	-0.241	-0.289
Number of occupied at the household						
occuphouse	0.054	-0.089	-0.230***	-0.261*	-0.099**	-0.022
Father's occup. status (Ref :Manual)						
farmer	0.279***	-0.267	-0.538***	0.764***	0.189	0.105
self-employed	0.457***	-0.059	-0.460***	0.035	0.005	0.058
executive	-0.082	0.226**	-0.333***	0.277*	0.050	0.211**
intermediate	-0.031	-0.037	-0.284***	-0.182	-0.131**	0.234***
non manual	-0.145**	-0.135	-0.043	-0.086	-0.057	0.217**
unemployed	-0.189	-0.527*	0.405***	0.117	0.286**	0.017
not mentioned	0.077	-0.389**	-0.253**	0.052	0.177*	-0.022
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.241***	0.132	0.373***	-0.001	0.053	-0.766***
BAC	-0.144***	0.098	-0.238***	-0.071	0.259***	0.805***
BTS/DUT	-0.321***	0.636***	-0.344***	-0.008	0.533***	0.135
L3/M1	-0.270***	0.955***	-0.014	0.634***	0.693***	2.399***
M2/PhD	-0.466***	1.028***	-0.047	0.495***	0.732***	1.016***
Business School	-0.475***	1.199***	-1.626***	0.532***	0.899***	-0.375*
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers workers	-0.327***	0.092	-0.026	0.728***	-0.138**	0.524***
$50-199$	-0.469***	0.056	-0.259***	1.100***	-0.122*	1.018***
≥ 200 workers	-0.511***	-0.334***	-0.308***	1.139***	0.131**	1.328***
Not mentioned	-0.542	-0.165	-0.221**	0.979***	-0.243***	1.213***
Living in couple(Ref : Single)						
Couple	-0.115*	0.076	0.081	0.471**	-0.258***	0.437***
Spouse occup. (Ref : employed)						
unemployed	0.147	0.158	0.319**	-0.130	-0.033	-0.086
student	0.223	-0.458	-1.444**	-0.163	0.044	-0.730*
inactive	0.106	-0.189	0.105	-0.014	-0.047	-0.203
Intercept	-1.360***	-5.061***	-2.438***	-5.512***	-0.890***	-7.378***
N	22783					
Log-likelihood	-32214.932					
$\chi^2_{(198)}$	4109.94					

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2010", author's calculations

Table 9 : The determinants of access channels in 2007 (All variables)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.034***	0.097***	0.073***	0.093***	-0.011*	0.135***
woman	-0.541***	-0.137*	0.223***	-0.478***	-0.365***	-0.267
Origin	0.444*	-0.463	-0.274	-0.393	0.214	-2.346***
RUR	-0.036	0.033	0.122	-0.057	-0.046	0.191**
ZUS	-0.091	-0.173	0.387***	0.482**	0.086	0.007
Foreign born	0.072	0.351	0.203	0.418	-0.051	0.240
Number of occupied at the household						
occuphouse	0.020	-0.149	0.006	0.080	0.032	-0.244***
Father's occup. status (Ref :Manual)						
farmer	-0.182	-0.668**	-0.568**	-0.061	-1.314***	-1.040***
self-employed	0.239***	0.194	-0.231*	-0.192	-0.328***	0.178
executive	-0.217***	-0.053	-0.272**	-0.243	-0.321***	0.222*
intermediate	0.021	0.193*	-0.341***	-0.246	-0.182**	0.231**
non manual	-0.200***	0.269**	-0.090	-0.329	-0.193**	0.662***
unemployed	-0.220*	0.550***	-0.232	-2.066**	-0.388**	-0.590*
not mentioned	0.114	0.202	-0.022	-0.328	-0.243*	0.065
Mother's occup. status (Ref :Non manual)						
farmer	-0.109	0.593*	-0.716*	0.355	1.113***	1.097***
self-employed	0.125	0.147	-0.074	-0.255	0.120	-0.742***
executive	0.472***	0.276	-0.072	-0.266	0.255*	-0.070
intermediate	-0.100	0.027	0.128	0.189	0.156*	0.379***
manual	-0.105	-1.260**	0.448**	-15.72	0.207	-1.135***
unemployed	-0.053	0.125	0.047	0.099	-0.007	-0.195**
not mentioned	-0.153**	0.185	0.202**	0.325*	0.071	-0.222
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.138*	0.199	0.186	0.589**	0.268***	-0.395
BAC	-0.101*	0.218**	0.023	0.128	0.245***	0.908***
BTS/DUT	-0.469***	0.630***	-0.297***	0.652***	0.274***	0.187
L3/M1	-0.379***	0.721***	-0.558***	0.153	0.517***	2.456***
M2/PhD	-0.211*	0.669***	-0.478**	-0.023	0.808***	1.057***
Business School	-0.356***	1.164***	-0.906**	0.523*	0.851***	0.311
The plant's size (Ref : Less than 50 workers)						
$20-49$ workers	-0.253***	-0.032	0.092	0.557***	-0.052	0.262**
$50-199$ workers	-0.296***	-0.283***	0.090	1.038***	0.077	0.543***
≥ 200 workers	-0.571***	-0.283***	-0.490***	1.059***	-0.014	0.584***
Not mentioned	-0.292***	0.089	0.121	0.632**	-0.299***	0.673***
Living in couple(Ref : Single)						
Couple	-0.098	0.084	0.336***	0.326	0.077	0.144
Spouse occup. (Ref : employed)						
unemployed	0.088	-0.417*	0.036	-0.150	-0.126	-0.241
student	-0.428**	-0.674	0.416	-0.160	-0.275	-0.084
inactive	0.012	-0.341	0.188	0.112	0.054	-0.361**
Intercept	-1.059***	-4.767***	-4.096***	-6.818***	-1.256***	-6.367***

N	17583
Log-likelihood	-24874.669
$\chi^2_{(198)}$	3331.37

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2007", author's calculations

Table 10 : The determinants of access channels in 2010 (All variables)

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Age	0.034***	0.097***	0.042***	0.067***	-0.016*	0.126***
	(5.65)	(7.35)				
woman	-0.430***	-0.150**	0.256***	-0.789***	-0.294***	-0.163**
	(-11.41)	(-2.16)				
Origin	0.402**	-0.579**	-0.541*	-0.510	0.361	-0.706*
	(1.89)	(-1.99)				
RUR	0.154***	0.265***	0.571	0.178	0.060	0.178**
	(-3.99)	(-3.05)				
ZUS	-0.001	-0.321**	0.299***	0.319*	-0.057	-0.019
	(0.02)	(-2.01)				
Foreign born	0.272	0.686***	0.423	0.407	-0.246	-0.318
	(1.46)	(2.67)				
Number of occupied at the household						
occuphouse	0.052	-0.093	-0.229***	-0.260*	-0.100**	-0.013
	(1.43)	(-1.14)				
Father's occup. status (Ref :Manual)						
farmer	0.291***	-0.667**	-0.592**	0.946***	-0.000	0.371*
	(2.58)	()				
self-employed	0.412***	0.070	-0.397***	0.006	-0.018	0.086
executive	-0.122*	0.227**	-0.280**	0.342**	0.043	0.132
intermediate	-0.057	-0.045	-0.283***	-0.104	-0.109	0.171*
non manual	-0.155***	-0.142	-0.046	-0.063	-0.032	0.186*
unemployed	-0.197	0.505	0.406***	0.105	0.275*	-0.030
not mentioned	0.109	-0.438**	-0.225*	0.111	0.193*	0.014
Mother's occup. status (Ref :Non manual)						
farmer	-0.060	0.837***	0.140	-0.530	0.538***	-0.923**
self-employed	0.206**	-0.000	-0.495**	0.254	0.292**	-0.552**
executive	0.153	0.030	-0.784***	0.033	0.226**	0.164
intermediate	0.098*	-0.055	0.059	-0.391**	0.043	0.134
manual	-0.083	-0.042	-0.072	0.014	0.267***	-0.408***
unemployed	-0.006	-0.173*	-0.059	0.120	0.216***	0.029
not mentioned	-0.296**	0.204	-0.161	-0.471	-0.006	-0.276
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.243***	0.145	0.378***	0.009	0.037	-0.762***
BAC	-0.156***	0.100	-0.232***	-0.051	0.264***	0.795*
BTS/DUT	-0.336***	0.640***	-0.348***	0.014	0.550***	0.111
L3/M1	-0.293***	0.959***	-0.002	0.682***	0.701***	2.369***
M2/PhD	-0.495***	1.025***	-0.029	0.561***	0.743***	0.962***
Business School	-0.508***	1.207***	-1.448	0.569***	0.899***	-0.420***
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers	-0.325***	0.088	-0.032	0.735***	-0.135**	0.533***
$50-199$ workers	-0.464***	0.052	-0.263***	1.102***	-0.119*	1.035***
≥ 200 workers	0.510***	-0.339	-0.305***	1.142***	0.127**	1.351***
Not mentioned	-0.537***	-0.167	-0.216**	0.983***	-0.241***	1.234***
Living in couple(Ref : Single)						
Couple	-0.117*	0.086	0.081	0.471**	-0.273***	0.449***
Spouse occup. (Ref : employed)						
unemployed	0.168*	0.157	0.323**	-0.140	-0.048	-0.067
student	0.204	-0.463	-1.424**	-0.163	0.027	-0.777**
inactive	0.113	-0.149	0.1269	-0.042	-0.104	-0.192
Intercept	-1.355***	-5.059***	-2.432***	-5.499***	-0.946***	-7.343***
N	22783					
Log-likelihood	-32141.922					
$\chi^2_{(198)}$	4255.96					

Significance levels : $*$: 10% $**$: 5% $***$: 1%

Source : "Enquête Emploi, 2010", author's calculations

Table 11 : The determinants of access channels in 2010 (Including the "Generalised Residual")

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Origin	0.393**	-0.626**	-0.629**	-0.500	0.395	-0.692*
RUR	0.201***	0.218**	-0.043	0.187	0.101*	0.192**
ZUS	0.067	-0.418**	0.088	0.355*	0.037	0.013
Number of occupied at the household						
occuphouse	0.049	-0.093	-0.226***	-0.270**	-0.110**	-0.012
Father's occup. status (Ref :Manual)						
farmer	0.256**	-0.611**	-0.477**	0.874***	-0.050	0.352
self-employed	0.394***	-0.043	-0.336***	-0.003	-0.043	0.078
executive	-0.139*	0.248**	-0.232**	0.330**	0.019	0.126
intermediate	-0.069	-0.027	-0.253***	-0.111	-0.127	0.161*
non manual	-0.162***	-0.135	-0.038	-0.064	-0.036	0.182*
unemployed	-0.148	-0.598*	0.221	0.119	0.343*	-0.008
Mother's occup. status (Ref :Non manual)						
farmer	-0.072	0.865***	0.197	-0.484	0.519***	-0.930**
self-employed	0.194**	0.014	-0.455**	0.255	0.283**	-0.560**
executive	0.151	0.039	-0.763***	0.037	0.221**	0.161
intermediate	0.098*	-0.045	0.084	-0.383**	00.043	00.126
manual	-0.079	-0.048	-0.082	0.019	-0.007	-0.409***
unemployed	0.037	-0.223**	-0.163**	0.142	0.259***	0.044
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.318***	0.004	0.117	0.041	0.155	-0.718**
BAC	-0.180***	0.154	-0.130	-0.060	0.221***	0.783***
BTS/DUT	-0.383***	0.733***	-0.173*	-0.018	0.476***	0.085
L3/M1	-0.337***	1.051***	0.156	0.666***	0.632***	2.347***
M2/PhD	-0.517***	1.071***	0.055	0.551***	0.705***	0.926***
Business School	-0.554***	1.307***	-1.268	0.547***	0.822***	-0.449*
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers	-0.327***	0.086	-0.039	0.733***	-0.135**	.531***
$50-199$ workers	-0.463***	0.050	-0.269***	1.092***	-0.120*	1.034***
≥ 200 workers	-0.508***	-0.338***	-0.304***	1.142***	0.125**	1.353***
Spouse occup. (Ref : employed)						
unemployed	0.152*	0.150	0.319**	-0.150	-0.052	-0.063
student	0.207	-.466	-1.430**	-0.170	0.025	-0.769**
inactive	0.115	-0.155	0.115	-0.048	-0.100	-0.178
gen-residual	-0.408	0.831	1.465***	-0.208	-0.634	-0.236
Intercept	-1.030***	-5.690***	-3.633***	-5.303***	-0.427	-7.155***
N	22746					
Log-likelihood	-32082.86					
$\chi^2_{(198)}$	4265.50					

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2010", author's calculations

Table 12 : The determinants of access channels in 2007 (Including the "Generalised Residual")

Variable	Perso.C	Job ads	Public	Private	Prof.C	Competition
Origin	0.506**	-0.393	-0.474	-0.329	0.296	-1.875***
RUR	0.073	0.075	0.015	-0.023	0.001	0.476***
ZUS	0.005	-0.068	0.115	0.569**	0.210	0.681***
Number of occupied at the household						
occuphouse	0.014	-0.154*	0.020	0.076	0.026	-0.292***
Father's occup. status (Ref :Manual)						
farmer	-0.225*	-0.713***	-0.449*	-0.099	-1.370***	-1.37O
self-employed	0.208***	0.161	-0.145	-0.220	-0.367***	-0.046
executive	-0.226***	-0.061	-0.247*	-0.251	-0.332***	0.167
intermediate	0.009	0.181*	-0.313***	-0.255	-0.196**	0.156
non manual	-0.209***	0.259**	-0.066	-0.337	-0.204**	0.605***
unemployed	-0.138	0.636***	-0.077**	-1.991*	-0.284	0.000
Mother's occup. status (Ref :Non manual)						
farmer	-0.108	0.593*	-0.717*	0.353	1.116***	1.123***
self-employed	0.137	0.160	-0.108	-0.244	0.135	-0.659**
executive	0.519***	0.327*	-0.202	-0.222	0.315**	0.304
intermediate	-0.080	0.048	0.073	0.206	0.180**	0.524***
manual	0.151**	0.183	0.211**	0.323*	0.068	-0.245*
unemployed	0.002	0.186	-0.115	0.150	0.079	0.218**
Education level (Ref :CAP/BEP)						
No diploma or former primary-school	0.246**	0.323	-0.127	0.689**	0.411***	0.490*
BAC	-0.137**	0.176	0.132	0.094	0.196**	0.601***
BTS/DUT	-0.529***	0.559***	-0.117	0.593***	0.193**	-0.339**
L3/M1	-0.437***	0.654***	-0.383**	0.096***	0.440***	1.968***
M2/PhD	-0.256**	0.617***	-0.344*	-0.066	0.748***	0.668***
Business School	-0.414***	1.097***	-0.738***	0.468	0.774***	-0.190
The plant's size (Ref : Less than 20 workers)						
$20-49$ workers	-0.253***	-0.032	0.091	0.557***	-0.052	0.279***
$50-199$ workers	-0.295***	-0.284	0.091	1.038***	0.078	0.555***
≥ 200 workers	-0.570***	-0.284***	-0.489***	1.059***	-0.014	0.593***
Spouse occup. (Ref : employed)						
unemployed	0.085	-0.419*	0.044	-0.154	-0.130	-0.246
student	-0.429**	-0.676*	0.427	-0.162	-0.276	-0.119
inactive	0.015	-0.338**	0.188	0.114	0.059	-0.333**
gen-residual	-0.670	-0.767	1.889***	-0.635	-0.870	-6.028***
Intercept	-0.619*	-4.263***	-5.413***	-6.398***	-0.688	-2.528***
N	17583					
Log-likelihood	-24843.903					
$\chi^2_{(198)}$	3392.91					

Significance levels : * : 10% ** : 5% *** : 1%

Source : "Enquête Emploi, 2007", author's calculations

TABLE 13 – *Probit* Model : Labor Market Participation's probability in 2010 (the selection equation)

Variable	Coefficient	(Std. Err.)
Age	0.052**	(0.002)
Woman	-0.087**	(0.014)
Origin	-0.153**	(0.027)
RUR	-0.170**	(0.020)
ZUS	-0.218**	(0.024)
Father's occupational status : (Ref : Manual)		
Farmer	0.269**	(0.054)
Self-employed	0.117**	(0.026)
Executive	0.089**	(0.027)
Intermediate	0.064**	(0.022)
Non manual	0.023	(0.023)
Unemployed	-0.252**	(0.038)
Mother's occupational status : (Ref : Non manual)		
Farmer	0.183*	(0.081)
Self-employed	0.050	(0.042)
Executive	0.030	(0.039)
Intermediate	0.033	(0.023)
Manual	-0.010	(0.024)
Unemployed	-0.171**	(0.018)
Education (Ref : CAP/BEP)		
No diploma	-0.339**	(0.021)
BAC	0.169**	(0.019)
BTS/DUT	0.325**	(0.024)
L3/M1	0.319**	(0.030)
M2/PhD	0.142**	(0.036)
Business School	0.383**	(0.048)
Type of accommodation (Ref : Private rental)		
Accessing owner	0.204**	(0.021)
Accessing non-proprietary	-0.069**	(0.020)
Rent for social housing	-0.246**	(0.019)
Free housing	0.063	(0.046)
Children$\prec$3	0.056**	(0.020)
Intercept	-0.199**	(0.053)
N	49424	
Log-likelihood	-21692.629	
$\chi^2_{(32)}$	4293.099	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Source : "Enquête Emploi, 2010", author's calculations

TABLE 14 – *Probit* Model : Labor Market Participation's probability in 2007 (the selection equation)

Variable	Coefficient	(Std. Err.)
Age	0.050**	(0.002)
Woman	-0.168**	(0.017)
Origin	-0.245**	(0.032)
RUR	-0.159**	(0.025)
ZUS	-0.280**	(0.027)
Father's occupational status : (Ref : Manual)		
Framer	0.230**	(0.062)
Self-employed	0.141**	(0.032)
Executive	0.017	(0.033)
Intermediate	0.038	(0.026)
Non manual	0.035	(0.028)
Unemployed	-0.277**	(0.043)
Mother's occupational status : (Ref : Non manual)		
Farmer	0.040	(0.090)
Self-employed	-0.046	(0.049)
Executive	-0.218**	(0.048)
Intermediate	-0.088**	(0.028)
Manual	0.009	(0.030)
Unemployed	-0.233**	(0.021)
Education (Ref : CAP/BEP)		
No diploma	-0.360**	(0.025)
BAC	0.172**	(0.023)
BTS/DUT	0.298**	(0.028)
L3/M1	0.291**	(0.036)
M2/PhD	0.225**	(0.048)
Business School	0.289**	(0.054)
Type of accommodation (Ref : Private rental)		
Accessing owner	0.238**	(0.025)
Accessing non-proprietary	-0.102**	(0.024)
Rent for social housing	-0.109**	(0.023)
Free housing	-0.051	(0.051)
Children<3	0.031	(0.024)
Intercept	0.055	(0.064)
N	36900	
Log-likelihood	-14835.616	
$\chi^2_{(32)}$	2842.653	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Source : "Enquête Emploi, 2007", author's calculations

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