ACCESS TO THE LABOR MARKET AND THE IMPACT OF PASSAGE THROUGH AN INTRODUCTORY TRAINEESHIP IN PROFESSIONAL LIFE (SIVP1): THE EXAMPLE OF THE GRADUATES OF HIGHER EDUCATION IN TUNISIA FROM 2004 TO 2008

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Abstract

In this article, we propose to study the determinants of access to first employment of graduates of higher education in Tunisia. It also focuses on the assessment of the impact of passage through the introductory traineeship in professional life (SIVP1)one of the instruments of public policy support employment addressed to the graduates on the quality of employment obtained and in particular the salary of the first employment of young graduates . The study of the determinants and the wages differential of beneficiaries and non-beneficiaries of SIVP1 have allowed focusing on the effect of this policy on improving the paths of graduates and the quality of their occupational integration. Finally, the comparison of the estimated of both functions of gains of both groups of employees allowed underlining the various determiners of the salary, and raising the positive effect the introductory traineeship in professional life (SIVP1) on conditions for access to the first salary.

ملخص

نقترح في هذه الدراســـة محددات الحصـــول على فرص العمل الأول من خريجي التعليم العالي في تونس. كما نركز على تقييم تأثير المرور من خلال تدريب تمهيدي في الحياة المهنية (SIVP1) وهى واحدة من أدوات العمل ودعم الســـياســـات العامة الموجهة إلى الخريجين على نوعية العمالة التي تم الحصـــول عليها وخاصـــة راتب التوظيف الأول شـباب الخريجين. وقد سـمحت كل من المحددات والفرق في أجور المستفيدين وغير المستفيدين من SIVP1 بالتركيز على أثر هذه السياسـة على تحسـين مسـارات الخريجين ونوعية الإدماج المهني الخاصـة بهم. وأخيرا، فإن المقارنة بين المقدرة على حد سواء من المكاسب من كلا الفريقين العاملين سمح بالتأكيد على إيضـــاح المحددات المختلفة من الراتب، ورفع التأثير الإيجابي للتدريب التمهيدي في الحياة المهنية (SIVP1) على شـــروط الحصـــول على الراتب الأول.

1. Introduction

Since independence, Tunisia has often actuated various economic adjustment programs in its management of the production system and the needs of the labor market. During the 70s and after the failure of the policy of co-operatives, Tunisia has been towards applying a liberal open policy. The state got down to the stimulation of the private initiative as well as the development of the exporting industries. Faced with the deterioration of public accounts, the Structural Adjustment Program (SAP) was set up in 1986. The continued the policy of opening was marked by the accession of Tunisia to the GATT (1991) and signing of the free trade agreement with the European Union (1995). To strengthen its integration into the global economy and accelerate economic and social development, Tunisia has undertaken a series of reforms. As Regards the education system, the various undertaken reforms, were aimed the fight against the school abandonment and illiteracy in rural areas, the development of basic education, promote women's education, improving level of qualification of graduates and adaptation of training to business needs. These goals are only partially met. Even if Tunisia has managed to maintain macroeconomic stability and a high level of investment in human capital, the situation deteriorated and those on two fronts; spatial inequalities and employment[1]. Regarding employment, and with the expansion of the education system, a new category of the unemployed has emerged, that of graduates of higher education, (and Redjeb Ghobentini, 2005). Indeed, the flow reached tertiary education has increased from 14,565 in 1996 to 40,321 in 2004; reaching 86,035 in 2010[2] (see Annex 1). Meantime, the problem of graduate unemployment has not grown steadily worse over the past twenty years, rising from 1.6% in 1994 to 9.4% in 2004 and 23.3% in 2010[3].

Mindful of the need for intermediation on the labor market in order to play suitably its role of regulating, Tunisia has engaged since the early eighties several actions as part of its active employment policy (AEP [4]). THE Instruments, as defined, are the primary means of state intervention to support new university leavers. These young graduates, generally lacking professional experience, are supported to hold a first job or an internship, work experience and escape the structural unemployment that awaits them. The AEP enable young graduates to have an opportunity to participate in one of integration programs in professional life as: introductory courses in professional life (SIVP1[5]), the program supported by the State of a share of wages in respect of newly recruited graduates and programs of the National Employment Fund (NEF) 21/21.

Despite the implementation of active employment policy (AEP), the problem of graduate unemployment remains virulent. The number of unemployed increased from 378.4 thousand in 1994 to 432.9 thousand in 2004 and 491.8 thousand in 2010 and who's of graduates share has continued to increase. Indeed, the number of unemployed in higher education increased from 71.2 thousand (17%) in 2006 to 223.7 thousand (33.1%) in 2011 and coming up to 242.3 thousand (31.9%) in the end of 2013[6]. The distinction unemployed by higher educational level shows that unemployment is the most important to senior technicians whose share increased from 35.53% in 2006 to 45.24% in 20011, nevertheless it 's significantly decreased in 2013 (28.03%) (See Figure 2). The structure of unemployment highlights the inability of the

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[1] Kriaa (2012)

[2] Ministry of Higher Education, Scientific Research (INS, 2013).

[3] Kriaa (2012)

[4] Law No. 93-75 of August 9, 1981 on the promotion of youth employment.

[5] The Ministry of Employment and Professional Integration of Youth SIVP1 defined as "internships for graduates of higher education or who have successfully completed the first cycle of this teaching," while the course is intended SIVP2 "young people who have completed the ninth year of teaching basic minimum (3rd year of secondary education, former regime), or with the level of undergraduate higher education," national Observatory for Employment and qualifications 'employment Statistics 2008'

[6] INS (2013)

Tunisian economy to create skilled jobs in line with the skills that the education system produces[7]. Highlight the trajectories of a cohort of young first-time job seekers between 2004 and 2008. In this regard, the survey conducted by the Ministry of Employment and Employability in 2004[8], aims to allow it in particular to produce tracking beneficiaries SIVP1, main device support employment in the labor market. In this paper, we study the determinants of the transition from the introductory course to the professional as well as its impact on the wage of the first job obtained by graduate's surveyed life. In this regard, the survey conducted by the Ministry of Employment and Employability in 2004 have as a target to highlight the trajectories of a cohort of young first-time job seekers between 2004 and 2008 to allow it in particular to produce a tracking beneficiaries SIVP1, main device support employment in the labor market. In this paper, we study the determinants of the transition from the introductory course to the professional as well as its impact on the wage of the first job obtained by graduate's surveyed life.

During the last years, issues on assessment of the effects of employment policies, training and continuing education to become the beneficiaries of these programs are more numerous (Heckman, Lalonde and Smith (1999), Brodaty, Crepon, Fern (2002). Several statistical and econometric methods have been developed while relying generally on the comparison between individuals who took advantage from the program that seeks to evaluate and individuals who did not receive. The problem posing with his methods is the presence of selectivity bias from observable and unobservable characteristics of individuals. Various techniques have been developed to solve this problem during the evaluation process; the application is defined in terms of data. In this paper we will fix the problem of selecting the group receiving induction training for professional life and non-beneficiaries through the method dual regimes (Heckman (1979) and Maddala (1983).

In the same context and to define the characteristics of graduates participating in Tunisian labor market, our approach will be based on models of job offer. We are interested in studying the effect of the introductory course in professional life on the salary of first job. The paper is organized as follows: In the first part we present the labor market in Tunisia and the various active employment policies for graduates. The second part is devoted to the presentation of the problem and data integration investigation. Finally, the third part, we describe the econometric model and the estimation results relating to the determination of the salary of first job.

2. The Labor Market and Active Labor Market Policies in Tunisia

2.1 The labor market: the conceptual framework

Several economic studies have focused on determining the efficiency of education and work experience; seen as an investment in human capital on wages and unemployment duration. Theoretical approaches have helped to define multiple relationships between training and employment, the picture of the contribution of human capital theory (Schultez (1961), Becker (1975) and Mincer (1974)), the matching theory (Jovanovic, 1979a and b, 1984) and models of signals (Arrow, 1973 and Spence, 1974). Since the works of Mincer (1974) and Becker (1975), the analysis of determining of salary, based on the theory of human capital, defined a structural relationship between the level of training and wage rates. Thus training is an investment to increase the productive capacity of the individual, alongside his experience and expertise[9]. Future employees choose their training periods based on expected returns and in view of their direct costs and opportunity. Unlike the human capital theory, the model of signal (Arrow, 1973 and Spence, 1974) assumes that education does not act directly on the productivity of an individual but rather it serves as an indicator of his partial productivity and

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[7] Halleb and Ben Sedrine (2006), Kriaa and Mouaddeb (2014).

[8] Ministry of Employment and Professional Integration of Youth and the World Bank (2007).

[9] Hanchane and Joutard (1998).

his learning abilities. Thus, the model of signal assumes that the transparency of the labor market is imperfect and that employers do not know the productive capacity of the applicants when recruiting[10]. According to Spence (1974), employers use a number of criteria to select their employees; the indices (such as race, gender, nationality,) and signals (the type and level of training) and their own experiences[11]. The diploma is then perceived as a signal for the companies to identify candidates with appropriate productive skills. The role of the educational system is to classify individuals rather than allowing them the skills (Lemistre, 2003)[12]. According to signal theory, the salary attached to a given degree is a reflection of the intrinsic abilities of the individual being signaled to the employer through the success of more or less difficult academic courses. The value of the diploma is then associated with the level of remuneration or qualification to which it gives access (Lemistre, 2003).

The matching theory implements the interactions between employers and employees; who would experience the goodness of fit to the position held order to find the right match. The model of "job matching" (Jovanovic, 1979) is based on the imperfect flow of information on the employment market, job seekers risk of not find despite the existence of an offer employment. The matching function would take into account the various obstacles in order to ensure the proper functioning of the labor market (Cahuc and Zylberberg, 1996). In this same sense, the theory of "job search", developed by Stigler (1960), assumes that the imperfect information of the supply side. Indeed, the offer or labor seeks information on wages, employment, qualifications and conditions of employment, all with the lowest possible cost. However, the job seeker defined its reservation wage equalizing marginal costs and gains of job search (MacCall, 1970). The reservation wage depends on several factors; the wage distribution, the degree of job stability and the patience of Job seeker located in unemployment situation to find the best possible job.

Our study mobilizes the theoretical elements of employment patterns in the perspective of the exploration of the characteristics of participants in the Tunisian employment market and also the analysis of the effect of training insertion into professional life on their career.

2.2 Evolution of the employment market in Tunisia

Since the early 60s, Tunisia has paid particular attention to the labor market and employment as a factor of production but also of social equity. Various incentives policies in the hiring and in the job creation have been put in place; and that through the intensified recruitment in the public sector, the encouragement of investment in the manufacturing industry sector, as well as the investment in export activities. In the middle of the 80s, the successive policies implemented since independence, with more or less success, have reached their limits. These policies have emphasized the structural inability of the Tunisian economy to the new requirements, the macro-economic imbalances, and growth, and thereafter as the need to restructure the Tunisian labor market. The structural adjustment program (SAP), applied by Tunisia, owed then restore macroeconomic balances damaged by the crisis. The reduction of public expenditure was then restricted access to jobs in administration and public enterprises. Without real employment policy, SAP has generated and compounded the structural unemployment including for the higher level of education, while increasing the spatial economic and social inequalities.

Aware of the limits of its policy, Tunisia had the operated since 1986, policies of adjustment allowing the instrumentation of intermediation between companies and job seekers. This logic of regulation aimed then to improve productivity by increasing the yields on the process of the

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[10] Nauze-Fichet and Tomasini (2002), and Couppié and Mansuy (2004).

[11] Logossah (1994).

[12] In this perspective, the theory of filter (Arrow, 1973), quite compatible with the signal theory, focuses on the efficiency of the sorts of people in the education system, to optimize the match between the training and employment at minimum cost.

' matching ' and on job search. Since the early 90s, the intervention of the State is oriented towards the launch of an active employment policy (AEP) defined as a set of instruments to help the occupational integration, training, placement and requalification[13]. These active employment programs; AEP mainly include investment services; the subsidies of the cost of labor (wages and / or social security contributions); training programs as well as employment generators programs such as financing small projects programs[14]. Tunisia had these programs cost about 1.5% of GDP in 2008.

These last twenty years, Tunisia can no longer manage the increasing flow of job seekers, especially those of higher level underlining the weakness of the economy and not adequacy between the training and the job offers. Indeed, the number of unemployed has been increasing from 378.4 thousand (15.6%) in 1994 to 432.9 thousand (14.2%) in 2004 and 491.8 miles (13%) in 2010. Meanwhile, the number of unemployed higher level increased from 6.3 miles in 1994 to 40.7 thousand in 2004 and 139,000 in 2010. Meanwhile, the number of unemployed higher level increased from 6.3 miles in 1994 to 40.7 thousand in 2004 and 139,000 in 2010. The first-time job seekers find great difficulty in the insertion to the Tunisian employment market. The number of first-time applicant increased from 182.1 miles in 2005 to 222,000 in 2008. Because of the severity of economic and financial policy, SAP caused the reduction of employment in the public and national companies. In addition, precarious work has become a feature of the Tunisian employment market with 42% of those employed in seasonal employment in 2008.

2.3 The characteristics of the Tunisian labor market

Since the sixties, the Tunisian policy is defined economic and demographic goals to ensure development in the fields of education, training, health as well as the employment. Therefore, the annual growth rate declined by 3% in 1966 to 1.21 between 1994 and 2004 and reaching 1.06% in 2010 (Ben Sedrine and Halleb (2005) Kriaa (2012)).

Since 1966, Tunisia knew a demographic evolution, accompanied by a change of the structure of the pyramid of age. Indeed the age range 15-59 increased from 48% in 1966 to 64% in 2004, reaching 66.4% in 2010. In parallel with this development, the labor force increased from 1622 thousand active in 1975-3 329,000 in 2004, 3 434 600 in 2006 and up to 3 978 600 end of 2013. The share of the labor force decreased slightly during the period from 1975 to 2008, from 50.2% to 47.1%, and emphasizing a structural change in terms of gender and level of education. Indeed, the share of working women has been increasing from 18.9% to 25.5% for the same period. The share of the working population of the upper level went from 13.1% in 2005 to 18.3% in 2010 (see Figure 3). The share of the employed population has increased from 2,320,600 in 1994 to 2,854,700 in 2004, and reaching 3,277,400 in 2010. Since the middle of 90s, the service sector has become the largest employer covering 49.4% of total employment in 2004 against 31% in 1975. While the agriculture sector has experienced a real decline; using only 16.3% of the population against 39% during 1975-2004.

At the same time as these economic and demographic transfers, the primary and/or professional training policy was directed since half of the 80s to the satisfaction of the application for training, especially higher level. This strategy does not address the real needs of the productive system. She has contributed to generate graduates whose profile is far more need of the labor market, resulting in high unemployment for this population. Indeed, the unemployment rate for college graduates rose from 1.6% in 1994 to 30.9% in 2011, while the number of unemployed high school has increased over 16% during the same period.

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[13] Kriaa (2012).
[14] See Appendix :Table 1.

However, the unemployment rate has know the real reduction with the level job-seekers nothingness and primary school, in the rate respective 20.2 % and 25.4 % during the same period 1994-2011.

2.4 Instruments and AEP for graduates of higher education

EAPs are the basic instrument of the policy of state regulation on the labor market (Kriaa, 2012). Many programs have been created to promote the integration and reintegration in salaried employment, promotion of micro-enterprises and self-employment, and the initial and continuing training. These programs are aimed job seekers of different levels. The policy of mass higher education has generated a number of very important graduates, in total inadequacy with the needs of the productive system, creating a severe problem of employability of first-time job seekers.

Various programs of assistant to the insertion particularly aimed at the graduates to stimulate the employment and limit the risks of the unemployment of the graduates. The main programs of assistant to the employment, intended for the graduates of the superior are:

The traineeship SIVP1: established by the decree n°87-1190 of August 26th, 1987, introductory traineeship in professional life are intended for young graduates, first-time job seekers or who have successfully completed at least the first cycle of higher education. The traineeship "SIVP1" are made in the public or private sector. Young trainees receive a monthly benefit granted by the State in the nature of a grant and the amount varies between 100 and DT 250 DT[15] by specialty, in addition to social security coverage and an additional monthly allowance, with a minimum amount of one hundred fifty dinars, granted to them by companies[16]. The training period is one year; it may be renewed for a further period of six months[17] if necessary for more successful integration of the trainee. Companies that recruit students for completion of their training are exempt for one year, social security contributions. Since launch the number of beneficiaries of SIVP1 students has steadily increased; going from 1756 in 1988 to 3798 in 1994 and reaching 13,378 in 2004[18].

The recruitment subsidy: known since 2004 by the assumption by the state of 50% of gross salary. It is paid within the limit of 250 dinars per month for graduate hired by a private company. It is exempt from employer social security contributions for a period of five years ((Halleb and Ben Sedrine, 2006). In 2004, only small and medium-sized enterprises newly join the program upgrade or installed in areas regional development or making their first recruitment operation of one or more tertiary education can benefit from these grants. Since 2005, the recruitment subsidy is extended to all companies in the private sector. Eligible this measure, job seekers graduate from higher education and even having received SIVP1 traineeship or a cycle of adaptation to the professional life.

The National Fund for Employment: both in the public administration and associations. It is the National Fund for Employment (21-21), which is responsible for the salary of graduate higher education recruited. The NFE also has another mission to support the employment of graduates by offering internship and trainings organized according to the needs of the labor market. The NFE also supervises young entrepreneurs during the creation phase of the project and also during the first years of activity.

The National Agency for Employment and Independent Work (ANETI) provides today, all public employment services. Added to that, the Tunisian Solidarity Bank and the National Fund for Employment (21-21). Among all the AEP for young graduates, the introductory traineeship

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[15] articles 28 and 30 of decree n°93-1049 of 3 may 1993.

[16] Employment assistance for young graduates: http://www.tunisiemploi.com.tn.

[17] the introductory traineeship in professional life: http://www.emploi.nat.tn/

[18] Mathlouthi and Mezouaghi (2006), Halleb and Ben Sedrine (2006).

in professional life is the instrument most used by graduates (see Table 2). Indeed, despite a slight decline in beneficiaries, the share of graduates who received SIVP1 rose from 53.25% in 1998 to 47.42% in 2001 and reaching 45.30% in 2004. While the share of graduates receiving support of 50% of salary has increased from 40% in 1988 to 9.14% in 2004. Although the instruments proposed by the 21-21 national Fund aimed more and more graduates, its share is less important than the SIVP1. The share of expenditures for the AEP to SIVP1 instrument is most important; it is near the average total expenditure in AEP (52% in 1997 and 49.4% in 2002[19]). However, despite these many programs and institutions, the situation in the employment market in Tunisia remains alarming with the significant changes in the flow of the top young job seekers.

2.5 The development of employment policies

Since their launches, EAPs have targeted different categories of unemployed and first-time job seekers. They are based on the hiring incentive, the introduction of greater flexibility in the labor market, the favoring work part-time and the departures to early retirement (Kriaa, 2012). The implementation of AEP can be divided into four main periods:

1-1 The first period covers the years 70 and 80. Since their launches active employment policies have focused on three fundamental segments of Tunisian job market:

the microcredit to promote micro enterprises in the artisanal sector (FONAPRA, 1981).

- internships for first job seekers with different levels of education. Namely Contracts Jobs Training (CJT) in 1981, the Internship of Introduction to Professional Life 1 (SIVP1) in 1987 and in 1988 SIVP2.
- and national construction sites and other forms of regional development and those through the creation of the Regional Development Program (RDP) in 1973, became the Integrated Rural Development Program (IRDP) in 1984, and the Regional Development Framework Program (DFP) in 1987[20].

1-2 The second period from 1990 to 1993, during which new initiatives were identified by the State to supplement existing programs and widen subsequently the intervention areas of EAPs. Thus there has been the creation of the Ministry Professional Training and Employment with its four agencies (the Tunisian Agency for Employment (TAE), the Tunisian Agency for Employment and Professional Training (TAEPT), the National Center Continuous Training and Professional Promotion (NCCTPP) and the National Centre for Training of Trainers and Engineering Training (NCTTET)). New programs have been created to complement the oldest namely the five instruments Integration and Adaptation Fund Professional (IAFP[21]) in 1991 and the Integrated Urban Development Program (IUDP, 1993[22]).

1-3 In the third period (1993-1999), EAPs were aimed at improving the intermediation employment market, the definition of a procedural framework for the various instruments and the promotion of micro- company. And those, in a parallel to a wider policy of openness to the various markets and to the more targeted adaptation to the technological changes. This is of more than emphasized through the creation of the Tunisian Solidarity Bank (1997) and the various reforms in the system of professional training.

1-4 The last period (2000-2005) is especially marked by the launch of the National Fund for Employment 21-21 (1999) aimed at facilitating the integration of job seekers including graduates and those across the improving aptitudes, coaching companies to a more professional

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[19] Redjeb and Ghobentini (2005).

[20] Mathlouthi and Mezouaghi (2006).

[21] The five instruments were created in 1991 are IAFP A, IAFP B, IAFP C, IAFP D and IAFP E.

[22] Halleb and Ben Sedrine (2006).

strategy of qualification of human resources and support small businesses funded by microcredit.

The flow of job seekers has continued to increase, creating more pressure on the employment market and underlining the limits of instruments EAPs. The unemployed labor force increased from 429.7 in 2006 to 738.4 thousand miles in late 2011 and reaching 609.9 miles end of 2013. Unemployment is particularly observed among graduates of higher education from 17% in 2006 to 31.9% end of 2013. In addition to this alarming situation, job creation decreased from 76.4 in 2006 to 43.5 in 2009 and 27.5 in 2013. In order to reduce the problem of integration of young job seekers, a new program 'employment Assistance was launched in 2011; AMAL program intended for graduates (see Table 1).

3. Active Employment Policies: Survey Data Insertion of the Graduates 2004-2008

Account kept of the nature of its productive structure, the employment market in Tunisia is characterized by low demand for qualified labor, and in fact graduates are more and more affected by unemployment, particularly first-time seekers employment. Based on the survey data insertion, 2004, we will analyze the different trajectories of graduates in 2004 to determine their profiles, and trace their different paths after graduation.

3.1 Importance of SIVP1 as an instrument of employment assistance

Since the 80s, Tunisia adopted a very intense active policy of employment by defining a whole outfit of measures and instruments of assistant to the insertion in the job, particularly for the young graduates of higher educations. The introductory traineeship in professional life is the basic instrument for the higher-level first-time jobseekers. In this paper, we focus on the study of this instrument, as well as its impact on the determinants of integration. Thus, and in the first part, the study of qualitative bloc will specify the determinants of passage through the SIVP1. In a second step, we analyze the impact of SIVP1 on the gain function of the first job. The analyses of quantitative bloc enable the development of the various determinants of wages of graduates, beneficiaries and non-beneficiaries of SIVP1 course.

3.2 Presentation of the data from the survey

The inquiry of pathway of the young graduates of the higher education of 2004[23], was realized on two waves; the first one concerning a period of 26 months (2004-06) with 4 249 graduates of 2004, and the second one allowing followed by these graduates over a period of 27 months (2005-07). The concatenation of both waves allowed to define the final sample which groups 3751 graduates observed over 53 months between 2004 and 2008. The picture 3 (in appendix) synthesizes the descriptive statistics concerning the investigated sample and the various variables used in this study.

The survey focuses on the course in the labor market, of a cohort of graduates. It details the demographic characteristics of individual graduates, their training characteristics, and their career on the labor market over the period of observation. A cursory reading of these characteristics shows that the distribution of graduates has a strong disparity by level of degree and gender. Nearly 57% of graduates in 2004 were women. At the time of conducting the survey, 78.67% of graduates are still single. The structure of age shows that over 80% of graduates twenty-five years and older, in one and a half year after graduation. 72.35% of graduates have a scientific background. More than 53% of graduates have a master's degree, followed by senior technicians with 35.24%. The engineers and the architects present 8.5% of all the graduates, while the doctors and the teachers only represent nearly 3%. Referring to the age in the bachelor, young graduates with less than 20 years to the success of their baccalaureate are more attracted to studies engineering, architecture and medicine; 67.81%,

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[23] The survey was carried out by the Ministry of Employment and Professional Integration of Youth in collaboration with the World Bank on the graduates of 2004 of different specialties.

59.26% and 68.09%, respectively are. For the oldest the choice focuses on the training of senior technicians with 72.42% and masteries studies with 64.76%.

At the end of the observation period, more than 58% of graduates are active while 28.98% are still unemployed. The region of Big Tunis forms the most important labor pool of the country, 33.19 % of the young people managed to find a job in this region. The private sector remains the main employer of the young graduates underlining the situation of saturation which knows the public sector. As regards the first job, almost 33% of employees works under contract in duration determined (CDD), followed by the contract in duration indefinite at the rate of 30.21%. However 15.30 % of the employees work without any contract. To find a job, the young graduates multiply the methods of job search. The personal approach with companies as well as the informal method through the close relations and the friends remains the most effective way to get a job (50.26 %). More than 21% of graduates found employment through national competitive examinations (CAPES, INA ...). Industry and the education sector employing over 66% of graduates. Six months from the date of graduation, nearly 27% of young people have managed to get a wage job, while 25.78% are still unemployed more than two and a half years after graduation. Finally, and following graduation, 67.76% of young people have completed mobility back to their areas of origin.

3.3 Course graduates in the labor market

The inquiry professional insertion of the graduates 2004-2008 allows tracking different paths chosen by these students during the following graduation three years. Tables 4a and 4b distinguish between both waves for the realization of the investigation. After diploma, young people have the choice between looking for a job, pursuing higher education or inactivity. A year and a half after graduation, nearly 50% of graduates found employment wage, while more than 46.20% are still unemployed. In 2008, the employment situation of graduates in 2004 has known some improvement. Indeed, the number of employed increased by 8.14% during the three and a half years following graduation. Indeed, the number of employed increased by 8.14% during the three and a half years following graduation. A decrease in the unemployment rate of 17.22% is raised, followed by the inactivity rate has decreased in 9.08% between the two periods of investigation path. Finally, the number of young beneficiaries of a contract SIVP1 has decreased from 371 to 220 students between the two waves of the survey.

The comparison of the situation of young graduates between the two waves of the study shows some improvement in employability rate with the passage of 44.93% of youth unemployed in wave 1, in the state employees during the second wave. However, 616 graduates know an unemployment persisting since the obtaining of their diplomas. For the graduates having managed to find a job during the first year which follows the diploma, 78.22 % are still employed at the end of the survey, while nearly 16 % of them have passed in the state of unemployment. Nearly 67 % of the trainees, during the first wave, managed to have a wage job after their introductory traineeship in professional life, while more than 21 % of them found themselves unemployed after the traineeship.

The traineeship SIVP1 presents to the job-seeker an opportunity to integrate into the working life, to acquire knowledge on the practical plan and to have a real experience in the job market. So, the trainee sees his chances of employability higher as well in the company where he spent his SIVP1 as on the labor market generally. According to the survey data of insertion, 248 students in the first wave went to the state employees after the end of their internships. While 78 of young trainees were unemployed after the end of their traineeship SIVP1. Twenty-seven months after graduation, 111 unemployed began the introductory course in professional life.

4. Econometric Model and Estimates: Determinants of Access To A Job and The Impact Of SIVP1 on The Gain Function

In this third part, we present the econometric model used on survey data of insertion of 2004 to estimate the gain function relating to first job. To account for selection problems, we present an estimate of the bivariate probit model which is used to define the determinants of participation in the labor market and access to introductory traineeship in professional life. Following the development of correction terms, we estimate two wage functions for the two groups of beneficiaries and non-beneficiary of SIVP1.

4.1 The econometric model

The analysis focuses on determining the effects of the passage through an introductory course in professional life (SIVP1) on the function wage relating to the first job after SIVP1. To do this we study two groups, those having achieved SIVP1 and those who have not completed the course. However, the estimated salary of first job is facing two problems selections. On one hand, our data refer to 2004 graduates who have the three statutes; inactive, employed and not employed throughout the observation period. The salary is then seen as among the employed. Among these employees are those who have made a SIVP1 traineeship, and those who did not realize. Selection bias due to the fact that the dependent variable is only observed for a non-random portion of the total population and the non-random distribution of achieving SIVP1. The latter bias is related to the particular nature of the dependent variable. Indeed the wages of first employment estimate shows an effect of censorship. To correct the selection bias and the endogenous of human capital, we propose the dual regimes model for endogenous variable and those based on the specification of Heckman (1979) and Maddala (1983). The two estimation steps will enable the construction of correction terms for the two selections noted above. Thus, we define a system of four equations to estimate; the first two equations are estimated by a bivariate probit to determine the probability of participation in the labor market and the probability of realization of a SIVP1. The last two equations will be each estimated by a generalized Tobit for the estimation the salary of first job and those for each group; with and without realizing SIVP1. Indeed, the estimated wage of the first job by the method of least squares can lead to biased estimates; since salary is observed only with the young employees, against those who remained unemployed or inactive. So this perspective is not random and depends the way each of the graduates values the time namely the reservation wage[24].

The proposed econometric model is as follows:

$$\begin{cases} Y_i^* = \alpha X_{1i}^{'} + \mu_i & (1) \\ Z_i^* = \beta X_{2i}^{'} + v_i & (2) \\ \ln(S_i^1) = \gamma_1 W_{i1}^{'} + \varepsilon_{i1}, & (3) \\ \ln(S_i^2) = \gamma_2 W_{i2}^{'} + \varepsilon_{i2}, & (4) \end{cases}$$

with j=1 if the employee i has realized a SIVP1, and j=2 if he hasn't realized a traineeship SIVP1 and i=1,….,N.

Equations (1) and (2) are the equations of selections for participation in the job market and the realization of SIVP1. Variables Y^* and Z^* are two unobservable latent variables defined as follows:

$$\begin{cases} Y_i = 1, & if\ Y_i^* \geq 0, & if\ the\ graduate\ i\ participated\ in\ the\ labor\ market \\ Y_i = 0, & if\ Y_i^* < 0, & if\ the\ graduate\ i\ has\ not\ participate\ in\ the\ labor\ market \end{cases}$$

and

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[24] thus the estimation of the gain function using OLS is subject to the selection bias.

$$\begin{cases} Z_i = 1\,, & \text{if } Z_i^* \geq 0, \quad \text{if the graduate } i \text{ realized a traineeship } SIVP1 \\ Z_i = 0\,, & \text{if } Z_i^* < 0, \quad \text{if the graduate } i \text{ has not realized a traineeship } SIVP1 \end{cases}$$

In the system of four equations X'_{1i} and X'_{2i} are two vectors of individual characteristics that determine the probability of participation in the job market and the realization of traineeship SIVP1 respectively. The coefficients α and β are parameters to be estimated respectively for the variables X'_{1i} and X'_{2i}. While the error terms of the participation in the labor market and the passage by SIVP1 are estimated by μ_i and v_i respectively.

The wages are observable only if the two latent variables take certain values. Thus for the wages of employees who completed a traineeship SIVP1 it:

$$S_i^1 = \begin{cases} S_i^{1*}, & \text{if } Y_i = 1 \text{ and } Z_i = 1 \\ 0\,, & \text{if } Y_i = 0 \end{cases}$$

For employees who have not completed a course SIVP1, wages are defined as follows:

$$S_i^2 = \begin{cases} S_i^{2*}, & \text{if } Y_i = 1 \text{ and } Z_i = 0 \\ 0\,, & \text{if } Y_i = 0 \end{cases}$$

The estimations of the equations (1) and (2) of the model allow releasing the determiners of the participation and the passage by a SIVP1 by synthesizing the qualitative structures of the model. These two equations are estimated by means of a bivarié probit allowing correcting the problem of auto selection of the model. In a model probit the probability is defined as follows:

$$\begin{cases} P_{1i} = F(x'_{1i}\alpha) = \Phi(x'_{1i}\alpha) \\ P_{2i} = F(x'_{2i}\beta) = \Phi(x'_{2i}\beta) \end{cases}$$

where $\Phi(.)$ is the distribution function that follows the normal distribution.

$$\text{and} \begin{cases} \Phi(x'_{1i}\alpha) = \int_{-\infty}^{x_{1i}\alpha} \frac{1}{\sqrt{2\pi}} e^{-t^2/2} dt = \int_{-\infty}^{x_{1i}\alpha} \phi(t) \\ \Phi(x'_{2i}\beta) = \int_{-\infty}^{x_{2i}\beta} \frac{1}{\sqrt{2\pi}} e^{-t^2/2} dt = \int_{-\infty}^{x_{2i}\beta} \phi(t) \end{cases}$$

with $\phi(t)$ is the density function of the standard normal distribution.

The matrix of asymptotic variance-covariance probit model is estimated using the inverse of the Hessian matrix evaluated.

$$\begin{cases} E\left(-\frac{\partial^2 Log\, L}{\partial \alpha \partial \alpha'}\right)^{-1} = \left(\sum_{i=1}^{N} \frac{\phi(x'_{1i}\alpha)^2}{\Phi(x'_{1i}\alpha)(1-\Phi(x'_{1i}\alpha))} x_{1i}x'_{1i}\right)^{-1} \\ E\left(-\frac{\partial^2 Log\, L}{\partial \beta \partial \beta'}\right)^{-1} = \left(\sum_{i=1}^{N} \frac{\phi(x'_{2i}\beta)^2}{\Phi(x'_{2i}\beta)(1-\Phi(x'_{2i}\beta))} x_{2i}x'_{2i}\right)^{-1} \end{cases}$$

The estimates of α and β enable to build the estimated probability for each individual P_i ; namely participation in the job market and the choice of SIVP1 or not its strategy of seeking employment. Following the estimation of the bivariate probit model we build the two corrective terms of selectivity related to access to paid job as a correction term of the employment selection. These coefficients capture the probability of being included in the sample of employees who have realized a contract SIVP1 (λ_1) and those who have not completed a contract SIVP1 (λ_0). These two terms of corrections estimated are included in the equations

(3) and (4) respectively to release the first salary of employees following the passage of a SIVP1 (5) and that of employees who have not completed a SIVP1:

$$\begin{cases} \ln(S_i^1) = \gamma_1 W_{i1}' + \eta_1 \hat{\lambda}_1 + \varepsilon_{i1} & (5) \\ \ln(S_i^2) = \gamma_2 W_{i2}' + \eta_2 \hat{\lambda}_0 + \varepsilon_{i2} & (6) \end{cases}$$

Where S_i^j : the salary of first job of individual i at the position j, j = 1 if SIVP1 is made and j = 2 if not.

W_{ij} : vector of characteristics of the individual i.

$\hat{\lambda}_{ik}$: means the ratios Mills, such that both corrective terms of selection are defined as follows:

$$\begin{cases} \hat{\lambda}_{i1} = \dfrac{\phi(X_{ij}'\hat{\beta})}{\Phi(X_{ij}'\hat{\beta})} & , \qquad si\ SIVP1 = 1 \\[2em] \hat{\lambda}_{i0} = \dfrac{-\phi(X_{ij}'\hat{\beta})}{(1 - \Phi(X_{ij}'\hat{\beta}))} & , \qquad si\ SIVP1 = 0 \end{cases}$$

and ε_{ij} : is the error term.

Equations (5) and (6) relating to the gain function of the first job will be estimated by linear regression of $Ln(S_i^j)$ on W_{ij} and $\hat{\lambda}_k$ for two sub-samples (with and without SIVP1). Both equations will be estimated by a generalized Tobit model allowing the correction of selection bias and to estimate a form of correlation between wages and access to employment.

4.2 Estimates and results

Three and half years after their graduation, 58.04% of those are employed in the labor market, over 28% are unemployed and nearly 13% are inactive. The estimate of the gain function presents then a problem of identification of the relative salaries to the not participants to the labor market. To correct these problems of censorship and selection, we adopted a model with two regimes (Heckman (1979) and Maddala (1983)) consists of two parts. A qualitative part allowing the research for the determiners of participation of the labor market and the access to the SIVP1 and supplying by the same the corrective terms of the selectivity. The second quantitative part intended for the estimation of the functions of specific earnings to every regime (with and without SIVP1). Table 5 presents the results of the estimation of the qualitative part of our model formed by both equations relative to the participation in the labor market and the realization of introductory traineeship in professional life.

Column (1) of Table 5 presents the estimation of the impact of various factors affecting the participation of young graduates in the Tunisian labor market. Endogenous variable in this case is (Y_i) that indicates if the graduate participates or not in job market. Our results are strong similar to those found by Lhéritier (1992), and Kriaa Plassards (1997) Forgeot (1997) and Guironnet (2005). First, we find gender discrimination involving stronger participation of men compared to women. Other supply characteristics relating to marital status and number of dependent children do not seem to influence the probability of participation. Moreover, the logic of family participation in the labor market is clear from our estimates since the probability of a given individual participation significantly decreases when her husband is busy. The significance of the age of the graduate can result in our context of analysis, depending on the number of years repetition rates or duration of unemployment, which has a negative effect on the chances of employability for more aged, given the relative homogeneity of the age of the study population. The column (1) presents a significant effect of the variable age on the participation so, all else being equal, the probability to find a job shall fall according to the age.

The diploma is more and more noticed as a necessary passport to find a job, so the certification and the choice of specialty turns out so determining (Guironnet, 2005). Regarding the characteristics of graduate training, the impact of training on the characteristics of insertion seems obvious. It begins with the section of the high school diploma, the scientific specialties (Math / techniques) present a comparative advantage compared with the other series, their effect is significantly positive. Thereafter, the effect of the diploma and its nature presents significant impacts. Thus the high level specialized degrees (engineers, architects) offer a greater chance of having a job that general diploma and intermediate levels (masters, senior technicians, literary and legal sciences ...). The probability of participation decreases with the implementation of a mobility return to the region of origin. This result confirms the strong concentration of the university map in Tunisia. University centers rub shoulders with the centers of employment and the return of diplomas at the end of their studies in their regions of origin often inside the country, in regions with low level of job offer. These young people face then important difficulties of insertion in their regions of origin. Finally the estimation of the equation of participation allowed us to correct the censorship during the estimation of the gain function.

Column (2) of Table 5 presents the results of estimating the determinants of access to SIVP1 as a first experience on the labor market. In its conception, this internship is supposed endowed the beneficiaries of a necessary work experience to improve their efficiencies on the labor market and facilitate by the same their accesses to a stable job. In the following, we are looking for the determinants of access to SIVP1 and we will measure the impact of transition on a SIVP1 gain function in (3). The estimates in column (2) show that access to SIVP1 does not depend on the sex of the individual, duration of access to training, level of graduate or industry sector. However, the factors of heterogeneousness having an impact on this probability are at first of the age of the beneficiary. All else being equal, the younger are more likely to access a SIVP1. This is also the case when the internship is in a private company. Although public enterprises use a SIVP1, access to employment in a public enterprise remains subject to competition. The method of job search in our case confirms the weakness of public structures of intermediation in the labor market. In this context it is important to note a distortion of access to SIVP1 as more and more companies require their new employees can automatically get a SIVP1, any qualification and field of activity combined. This approach deviates the SIVP1 from its primary function. Note that the Great Tunis who area as the internship has a significant and positive coefficient. In other words, live and work in Great Tunis increases the probability of access to training. This result is quite intuitive since the Great Tunis is the main source of employment including those available to graduates. Finally, the difficulties of regional labor markets are introduced in our model by the variable regional unemployment rates. This variable represents a significantly negative coefficient, indicating a direct impact of general difficulties of employment on the integration of graduates.

The correlation coefficient (rho) between the error terms of the two selection equations is significantly positive. This result shows that the two processes of participation in the labor market are actually sequential and the bivariate model corrects the selectivity induced by this double process.

4.3 Estimation of the gain function

To determine the impact of the passage by the SIVP1 we estimate two wage equations with correction for selection bias. We first consider those past SIVP1 by estimating the determinants of wages after SIVP1. The second subpopulation is then formed by those who have not made a SIVP1. We estimated the equation of their first salary. Following the estimation equations for participation selection and choice of SIVP1 as a means of integration in the job market, we calculated ratios Mills for two subpopulations. We estimated the gain function in the Mincer

(1974). Table 6 presents the estimation results of the wage equations corrected for selectivity obtained from the estimation of a Tobit model.

First note that the correction terms of selectivity act differently between the two equations. Not significant in the equation of wage with SIVP1, the Mills ratio is significantly positive in the second equation. This confirms the correctness of the overstatement of gains considered in this equation relating to the insertion without SIVP1.

We are interested in the following to the study of the determinants of both earnings equations. Estimates of the two equations of wages for both groups studied, underlines a rather homogeneous behavior between the effects of coefficients for the majority of exogenous variables.

As regards the sociodemographic characteristics, the number of dependent children would not impact on the level of wages in the two equations, it is the same for the impact of the age variable in the equation of beneficiaries of SIVP1. The rest of the characteristics utilized present significant effects in the two equations. The discrimination according to the genre is present in both equations, so the earnings of the men are significantly higher than that of the women, an effect being convenient for that defined by the theory of the signal. Being married has a positive impact on wage levels for the two groups studied. The age of the graduates has a significantly negative effect on wages of the group of graduates who have not realized a SIVP1. This behavior against intuitive must be considered with a lot of precaution since the considered population is strongly homogeneous towards the variable age. In other words, and all things being equal, the younger would have a comparative advantage in terms of gain early in their professional lives. The level of the diploma is considered, according to the theory of the signal, as an indicator allowing the identification of the individuals according to the competence raised(found) by their years of studies[25], and which is afterward translated according to the received payments[26]. This is confirmed by the positive effects of the specialties of high levels namely the engineers and the architects who are well paid contrary to the superior technicians.

As regards the characteristics of the employment, we find some intuitive results. Thus work in a large company would give a comparative advantage in terms of wages for both categories studied. For a new entrant to the labor market, getting a contract of indefinite duration is a guarantee of stability in employment. According to our estimates, the CDI also has a comparative advantage in terms of gain compared to the CDD and that whatever the mode of access to employment. The Greater Tunis present the largest reservoir of employment in the country, including jobs in the service and those open to graduates of superiors. The living standard in the Greater Tunis is higher than in the rest of the country and the economic dynamics is more important. The positive impacts on the wages of jobs in Greater Tunis are therefore understandable and easily explain by the effects of the abovementioned concentration.

Determinants of both earnings equations only vary slightly between the two systems essentially job characteristics. This result does not allow assessing the impact of SIVP1 wages. In the following sections, we will measure the impact of SIVP1 directly based on estimates of the Tobit model.

4.4 Tests of adequacy of selection equations

The validation of the estimations of the bivarié probit (the qualitative block of our model) takes place by the downgrading and the estimation of the probability of both equations of selections.

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[25] Spence (1974).
[26] Lemistre (2003).

The results of the tests of downgrading recorded in the two tables below underline the good quality of the forecasts related to both equations of selection relative to the participation to the market job and to the realization of the internship SIVP1.

4.4.1 Adequacy of the equation of participation in the labor market:

In Table 7, we present the results of downgrading of two categories; participation or not in the labor market, by comparing the real data (in lines in the table 7) with the forecasts of affectation of the individuals (the columns of the table 7) obtained from our estimations.

The results presented in Table 7 show that 67.38% of the observations are correctly classified[27]. The quality of the model is globally satisfactory even if the chosen specification seems to accurately classify participants than non-participants.

4.4.2 Adequacy of the equation achieving SIVP1

Table 8 describes the results of the decommissioning of the labor force according to the mode of professional integration (with and without SIVP1) and those comparing actual data to forecast the allocation of employees relating to our estimates.

According to the results of the Table 8, the quality of the model is very satisfactory with more than 77 % of the correctly classified observations[28]. The second equation of selection allows at best the determination of the characteristics of the not beneficiaries of the internship SIVP1 that those of the group of the beneficiaries.

From the data of Tables 7 and 8, we notice that the model of selection allows to detect at best the characteristics of the participants to the employment market and not having realized an internship of professional introductory that the groups of not active persons and the assets with SIVP1.

4.5 Impact of SIVP1 on the gain function

The comparison of average wages on the first job, among graduates who benefited from SIVP1 and those with access to a first job without training, shows the existence of a differential gain between the two groups. The average salary with SIVP1 (DTN 434.41) is higher than that obtained without the internship (378.79 DTN[29]). The following comparison of means between the two sub-populations wages shows that the realization of a SIVP1 gives a wage premium in the first job. We search the following to test this finding by the tests of differential gains between the two groups according to their average characteristics taken in full and subgroup characteristics (Table 9). Based on our estimates, several variations of this test were applied: first using all features included in our model, then measuring specific and independently the impact of socio-demographic characteristics, training and the employment. The results of these tests, reported in Table 9 present differentials of the earnings considered significantly positive and during the usage of all the determinants of the gain function, as well as sociodemographic characteristics only. However, the use of the characteristics of education and those related to employment do not confirm the previous results and show significant differential in favor of the non-completion of the course gains. The results in Table 9 generally confirm the existence of a positive differential gain for the passage through a SIVP1. This finding is, however, qualified dice at the characteristics of training and employment do not confirm it.

This result leads us to investigate further the differential gains through a decomposition approach of incremental gains.

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[27] it is the sum of the diagonal of the table 7 in%: (2435 + 91) /3749=67.38.

[28] it is the proportion of the sum of the diagonals of Table 8 relating to correctly classified: (1859 + 87) / 2508 = 77.91

[29] exponential transformation of log wages observed with and without SIVP1 in Table 9

Table 10 presents the estimation of the decomposition of wage differentials observed for both groups; with and without SIVP1. We apply similar to that proposed by Blinder (1973) approach and Oaxacas (1973) and reformulated more generally by Neumark (1988) and Oaxaca and Ransom (1988, 1994). This decomposition is to formulate wage differentials in a first part on the differences between individual characteristics and a second portion allocated to the differences in the estimated coefficients.

Formally, for two groups A and B, the decomposition of Blinder_Oaxacas, formulated in terms of Group B[30], is defined as follows (Jann (2008), Bauer and Sinning Hahn (2008)):

$$E(Y_A) - E(Y_B) = E(X_A)'\beta_A - E(X_B)'\beta_B = (E(X_A) - E(X_B))'\beta_B + E(X_B)'(\beta_A - \beta_B) + (E(X_A) - E(X_B))'(\beta_A - \beta_B)$$

With $(E(X_A) - E(X_B))'\beta_B$: represent the gap from the differences of the characteristics of both groups valued by the yields on the group B: it is about the part been understandable by the endowments, of the wage difference.

$E(X_B)'(\beta_A - \beta_B)$: Measure the contribution of the differences between the coefficients, ie the difference between the yields characteristics for both estimated to average characteristics of group B. This is the part of the differential is not explained by differences in the characteristics groups (endowments).

and $(E(X_A) - E(X_B))'(\beta_A - \beta_B)$: measure the simultaneous effect of differences in endowments and coefficients between the two groups: the interactions.

Based on this decomposition, we analyzed the differentials of the expected wage between the two groups studied and those viewpoint SIVP1 beneficiaries and by reference to the non-beneficiaries of SIVP1.

The explanation of the wage gap between groups with and without SIVP1 share reflects a wage loss of the beneficiaries of SIVP1 if they had the same characteristics of without SIVP1 (-17.3%). This situation persists by modifying the group characteristics considered (as present in the first column of Table 10). Thus, the replacement of total demographics, training or employment would result in a significant loss of earnings estimates. And the characteristics of the beneficiaries in whole or in groups seem to predispose to better gains.

The same behavior is observed by substituting the coefficients (column 2 of Table 10). The estimated performance characteristics of individual beneficiaries (β_B) will be higher than those of non-beneficiaries (β_A).

5. Conclusion

The occupational integration of young graduates in the Tunisian labor market has more and more difficult mainly because of the digging of the imbalance between supply and demand for labor, the increasing flow of graduates and low establishment of the skilled job. Faced with an alarming unemployment situation of labor higher level, several programs to support employment have been initiated by the state. The traineeship of professional integration (SIVP1) is one of the main instruments to Active Employment Policy (EAP) of Tunisia, the number of beneficiaries which has steadily increased from 1756, since its inception in 1988, and reaching 13,378 in 2004. In this study, we are interested in determining the effect of passing through a SIVP1 on the salary of first job data from the survey on employability 2004 -2008. To do this, we have specified and estimated a model with two regimes. The first scheme allows

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[30] Similarly away from the differences in the characteristics of the two groups returns enhanced by group A
$(E(X_A) - E(X_B))'\beta_A + E(X_A)'(\beta_A - \beta_B) + (E(X_A) - E(X_B))'(\beta_A - \beta_B)$

investigating the determinants of access to first employment of graduates of higher education in Tunisia. It also helps to correct both problems censorship on non-participation in the labor market and the selection bias associated with the choice of the mode of access to employment with or without training. The second scheme of the model is to estimate the gain function associated with the first job wages for each of the two subpopulations.

Comparing the two equations gain showed that the determinants of wages vary slightly between the two groups studied. The analysis of the effects of access to SIVP1 was deepened thereafter through the study of differential gains as well as their decomposition. Tests differential gain between the two groups showed the existence of a globally positive differential gain to the beneficiaries of the course. However, broken down by groups of features, those relating to the training and employment rather have a positive differential in favor of the non-beneficiaries. We then carried out decomposition of the wages estimated by the method of Blinder_Oaxacas. The results confirm the positive effect of passing through a SIVP1 on the salary of first job whether measured by the characteristics or returns. Definitely, the training appears to confer SIVP1 wage benefits to beneficiaries. Positive returns of the EAP however not provide him certain advantages in the labor market. A study of the impact of SIVP on access to employment and other job characteristics obtained by the recipient's time complement this analysis in the evaluation of this public instrument of logical access to the labor market of the young graduates.

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Figure 1: Evolution of the Number of Graduates of Higher Education between 1994-2012 (Data INS)
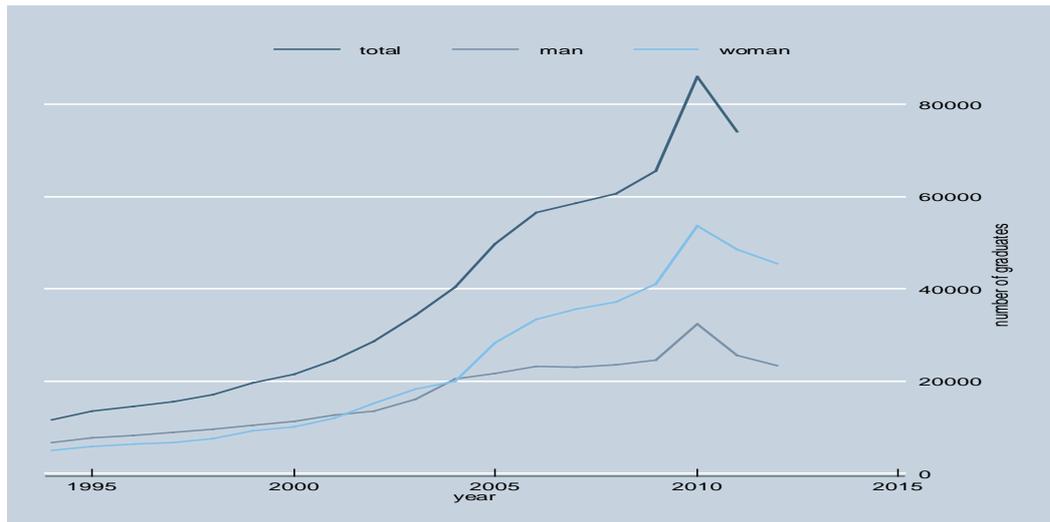
Figure 2: Evolution of the Number of Unemployed Graduates between 2006-2013
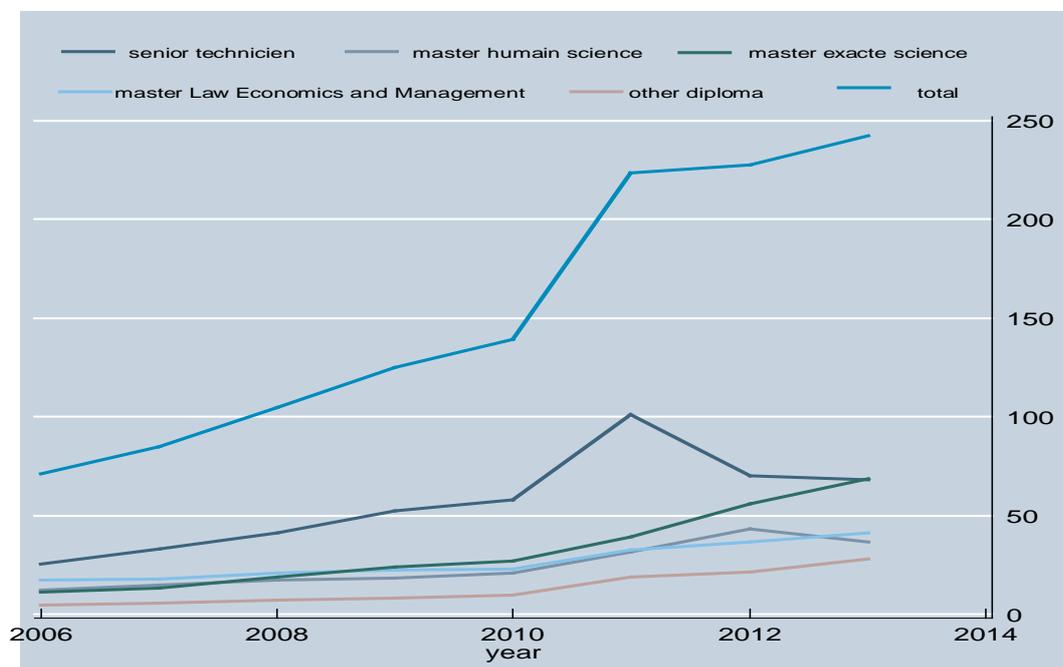
Figure 3: Distribution of the Active Population by Level of Instruction[31]
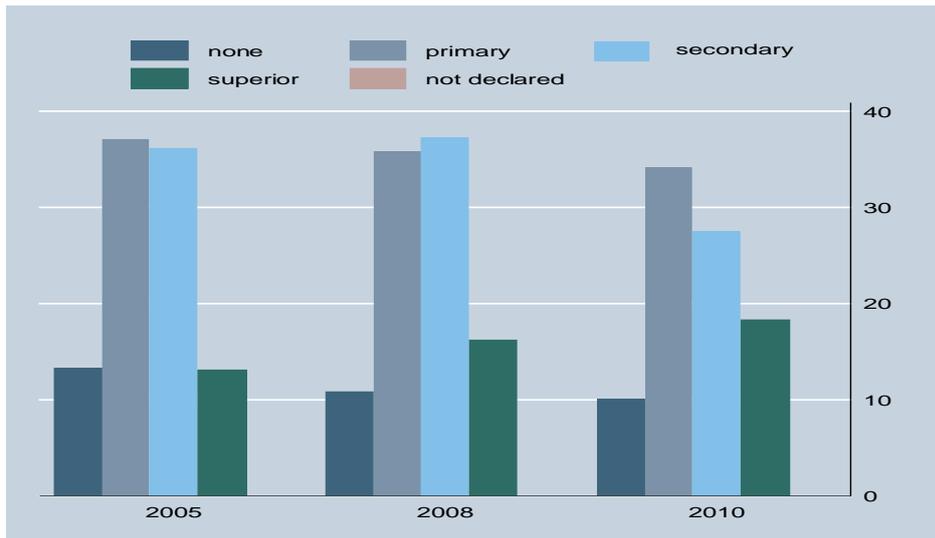
Figure 4: Distribution of Unemployed by Level of Instruction[32]

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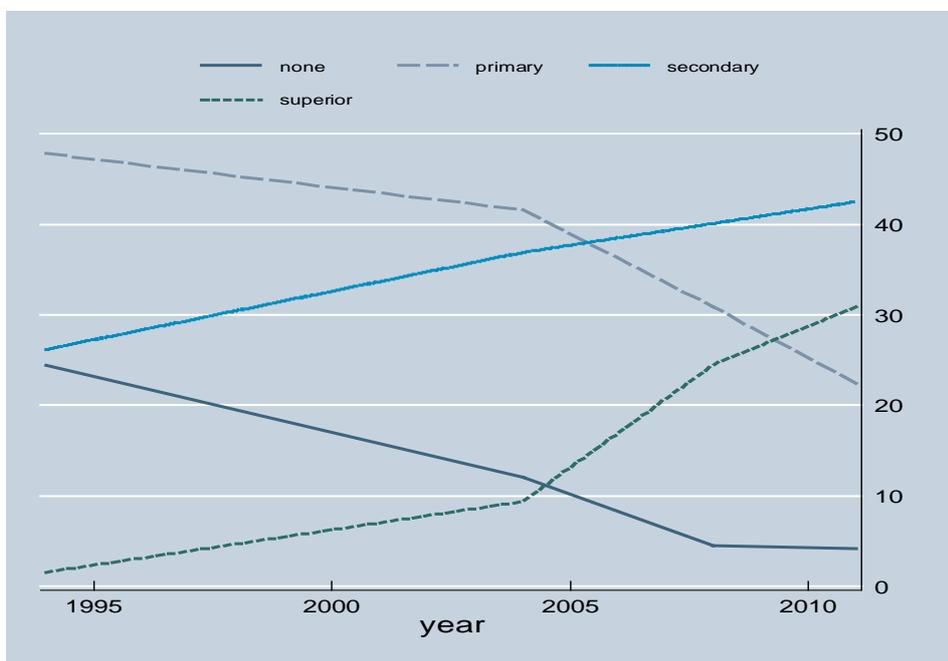
[31] Kriaa (2012)
[32] Kriaa (2012)

Figure 5: Evolution of the Share of Graduates of Higher Education Beneficiaries' Major Employment Programs (EAPs[33])
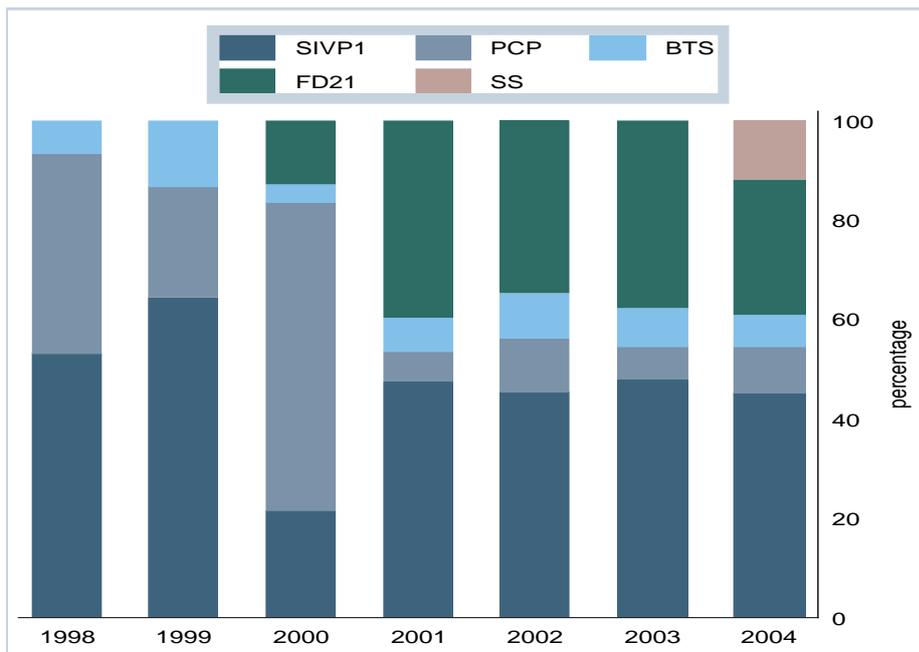
Figure 6: Evolution of the Number of Beneficiaries SIVP1 between 1988 and 2011[34].

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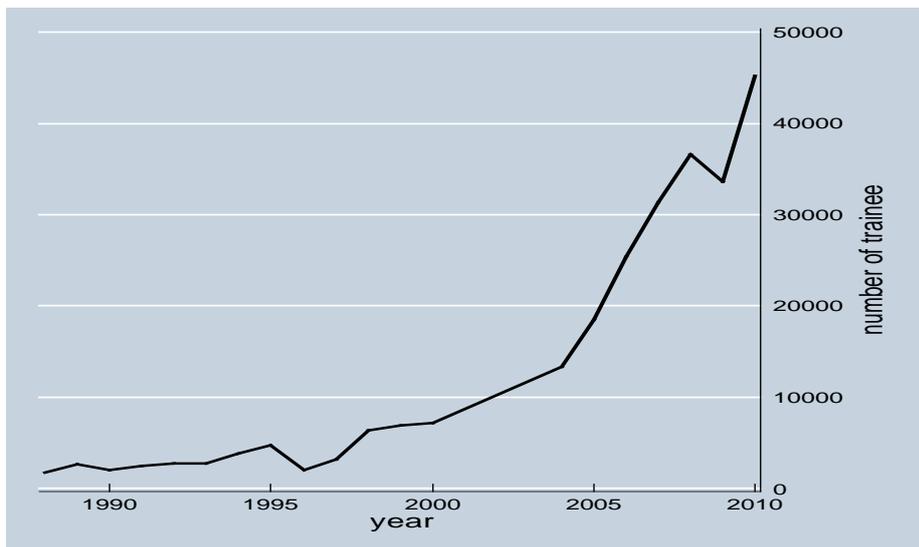
[33] Source: Halleb and Bensedrine (2006).
[34] Source : ANETI.

Table 1: The Employment Assistance Programs for Graduates[35]

| Programmes	Population cible et objectifs
«AMAL» : Program of active job search	**Target population:** first-time job seekers, tertiary education and those also hold a senior technician certificate (BTS) out of the system of vocational training (accredited degree), registered in employment offices and self-employment and unemployed for at least six months from the date of graduation. **Objective:** allowance of 200 dinars in addition to medical coverage, as compensation for active job search for up to one year.
nternships Introduction to Professional Life "SIVP"	**Target population:** first-time job seekers Tunisian national, a diploma of higher education or its equivalent for at least six months. **Objective**: To assist the beneficiary to acquire professional skills in order to facilitate its integration into working life. The state supports: A monthly allowance of one hundred and fifty dinars, social security trainee and the cost of additional training in a maximum of two hundred hours. The company is committed to provide the student an additional monthly allowance of a minimum of one hundred fifty dinars and recruit at least 50% of the total number of trainees for a period of 3 years.
Contract of insertion of the graduates of the higher education " CIDES "	**Target population:** a diploma of higher education and whose period of unemployment exceeding three years from the date of graduation concerned **Objective:** To enable the recipient to acquire professional qualifications alternating between a private company and a public or private structure formation, in accordance with the requirements of an employment position for which said the company is committed to recruiting. The state supports: the cost of training of trainees (up to a maximum of 400 hours), a monthly allowance of one hundred and fifty dinars served the student, an additional monthly allowance of fifty dinars served to a student who resides outside the governorate implementation of the host company, social security trainee during the training period and premium dinars, served the company after a year of actual work. And the employer's contribution to statutory social security on wages paid to new hires, and for a period of seven years. The company is committed to: provide the student an additional monthly allowance of a minimum of one hundred fifty dinars and recruit the recipient who has completed the training contract
Contract of reintegration in the active life " CRVA "	**Target Population:** Permanent workers who lost their jobs and non-permanent workers who lost their jobs. **Objective:** To enable the worker who lost his job to learn new skills meet the requirements of an employment position previously identified in a private company. The state supports: a monthly allowance of two hundred dinars served the student during the contract period, the trainee social security and the cost of additional training in a maximum of two hundred hours. The company is committed to: provide the student an additional monthly allowance of a minimum of fifty dinars and recruit the beneficiary who has completed the contract of course.
Program of support of the promoters of small companies	**Objective:** This program includes assistance in identifying the idea of the project, assisting in the development of the project study and business plan thereto, adaptation in management companies in technical areas necessary for project creation, support for small business developers and partial support for the return of devolved public services and structures made by small businesses. The state supports: the cost associated with the organization of sessions matching a maximum of 200 hours, the costs of adaptation management sessions to a maximum of one hundred twenty hours, the cost of session's additional technical adaptation to a maximum of four hundred hours and the cost of technical assistance to a maximum of twelve days of expertise. The graduates of higher education receive a monthly stipend amounting to one hundred and fifty dinars and eighty dinars for other education and training levels.
Contract employment – solidarity "CES"	**Target Population:** All job seekers. **Objective:** To facilitate the integration of various categories of job seekers into the workforce through specific actions within the framework of regional and local initiatives to promote employment, or in the context of adaptation to environmental changes the labor market. The beneficiary holds a diploma of higher education receive a monthly allowance of between one hundred and fifty dinars and two hundred and fifty dinars for a maximum period of three years.
Program of voluntary service	**Target Population:** Graduates of higher primary education job seekers, and having not previously received induction training for professional life. **Objective:** The program of voluntary service is designed to enable graduates of higher primary education job seekers, and did not previously received induction training for professional life SIVP, to perform voluntary and part-time work placements in the general interest to acquire practical skills and professional attitudes, and to benefit from personalized support to facilitate their integration into working life or in an employment independent work. These courses are supervised by associations or professional organizations, and on the basis of agreements to this effect with the Ministry of Vocational Training and Employment. The management of this program is entrusted to the National Agency for Employment and self-employment. The maximum duration of the course in the program of voluntary service, is twelve months. A monthly allowance of one hundred and fifty dinars is granted to the student throughout the training period. The national employment fund can support a portion not exceeding 60% of the costs of urban public transport to the beneficiaries of the program, and as part of an agreement to that effect between the Ministry of Training vocational and Employment and the Ministry of Transport.

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[35] Employment assistance for young graduates: http://www.tunisiemploi.com.tn.

Table 2: Evolution of the Part of Graduates of Higher Education Beneficiaries of Employment Programs (AEP) between 1988 -2004[36]

	1988	1999	2000	2001	2002	2003	2004
SIVP1	53.25	64.34	21.56	47.42	45.42	47.74	45.31
Support Part Wage	40	22.35	62.05	6.19	10.66	6.74	9.14
Fonds 21-21	-	-	12.74	39.79	34.88	37.57	27.30
BTS	6.75	13.31	3.65	6.60	9.03	7.95	6.33
Recruitment subsidy	-	-	-	-	-	-	11.92
Total	100	100	100	100	100	100	100

Table 3: Descriptive Statistics

Variables	Frequencies	Variables	Frequencies
Sex		**Type of contract first job**	
Man	43.27	CDI	30.21
Woman	56.73	CDD	32.88
Marital Status		Supported by the state of 50% of salary	5.46
CVD	78.67	bottom part of the National Employment 21-21	1.87
M	21.33	without contract	15.30
Age Date survey		other	1.75
NR	0.13	**Size company first job**	
Age_24 year and under	17.78	no employee +1 to49 employees	40.26
Age 25 year	20.63	50 to 499 employees	26.34
Age 26 year and more	61.58	500 and mores employees	33.40
Section of the Bachelor		**Type enterprise first job**	
NR	0.053	Public	42.65
Lettre	27.65	Privat	56.68
economic Science	13.46	**Mode Job Search**	
experimental science	24.36	employment offices	14.00
mathematical	21.91	local authorities	5.67
Technical	12.56	newspapers	4.22
diploma level		close or friends	23.40
Senior Technician	35.24	Dealings with the company	26.86
Masters Degree	53.29	institution of higher education	4.35
Engineer and Architect	8.50	National competitions and direct recruitment	21.50
other levels	2.96	**Enterprise sector employment first**	
Professional situation of Conjoint		Agriculture, forestry and fishing	3.86
active occupied	93.53	Production and distribution of electricity	0.76
unemployment	2.94	mining (extraction of ore and others)	6.96
Inactive	3.53	manufacturing industries	49.73
Number of children		Financial and insurance activities	2.34
no children	95.84	trade	4.18
1 children and more	4.16	Hotels and restaurants	1.39
Region of employment		Health and social services	5.35
Grand Tunis	33.19	Transport and storage	2.79
Secteur d'activité d'entreprise SIVP		Real estate activities	1.26
Agriculture, sylviculture et pêche	2.29	public Administration	3.28
Industry	34.10	construction, building	1.35
Service	11.06	Education	16.76
public Administration	11.89	**Access duration to first job**	
occupational status			
employee	58.04	<=1year	53.53
unemployment	28.98	between 1 and 2 year	28.43
Pursuit of study and training	8.53	More than 2 year	18.04
inactive	4.45	**mobility return**	62.76
Type enterprise SIVP			
Public	28.53	**sample size**	**3751**
Private	86.80		

[36] Halleb and Ben Sedrine (2006)

Table 4a: Change of Status of Graduates between the Two Waves

Wave 2	Professional status (Wave 1)						
	employee	**SIVP1**	**Independent**	**familaiux aid**	**military service**	**unemployment**	**total**
employee	885	248	11	13	2	523	1682+259[37]
SIVP1	43	16	3	2	0	111	175+61
Independent	18	7	41	1	1	27	95+10
familaiux aid	1	2	0	3	0	14	20+7
military service	1	0	0	0	0	2	3+1
unemployment	163	78	10	17	0	616	884+203
Formation	3	5	0	2	0	33	43+12
study pursuit	16	10	0	2	0	36	64+117
inactive	20	4	3	1	0	30	58+22
occasional activity	3	1	3	4	0	19	30+5
Total	1153	371	71	45	3	1411	3054+697

Table 4b: Situation of the Graduates of 2004 between Both Waves of the Survey

	Total Graduate		Part of the Graduate	
Situation	**18 months after diploma**	**3 years and a half after diploma**	**18 months after diploma**	**3 years and a half after diploma**
employee	1 524	2 177	49.90	58.04
unemployment	1 411	1 087	46.20	28.98
inactive	119	487	3.90	12.98
Total	3 054	3 751	100	100

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[37] 697 Missing observations in wave 1

Table 5: Estimated Model of Participation in the Labor Market With and Without SIVP1: Bivariate Probit

Variables	participating function (1)	Passage by a SIVP1 (2)
Constant	1.227***	0.007
	(0.284)	(0.341)
Sex		
woman (réf)	-	-
man	0.171 ***	-0.037
	(0.048)	(0.054)
Marital Status		
married (réf)	-	-
CVD	-0.019	
	(0.061)	
Number of children		
1 and + children (réf)	-	
No children	-0.075	
	(0.103)	
Age survey	-0.023**	-0.027**
	(0.009)	(0.012)
Professional situation of the Conjoint		
Inactive and retired Conjoint (réf)	-	
employed spouse	-0.355***	
	(0.094)	
Section of the Bachelor		
Letter, economy science and experimental science (ref)	-	
Mathematics,Technique	0.085*	
	(0.046)	
diploma level		
Senior Technician, doctor, lawyers (réf)	-	-
Masters Degree	-0.009	-0.046
	(0.048)	(0.062)
Engineer_ architect	0.332***	0.117
	(0.089)	(0.096)
Sector business activity		
Agricultural, industrial and public function (réf)		-
Service sector		-1.745
		(2.948)
Type enterprise		
Public (réf)		-
private		0.865***
		(0.069)
Method of Job Search		
Employment offices, local authorities, newspapers, and higher education institutions (réf)		-
Close relations or friends		0.092
		(0.069)
Dealings with the enterprise		0.019
		(0.069)
National contests and direct recruitment		-0.518***
		(0.126)
Access duration to the first job < à 1 year		-0.033
		(0.053)
Mobility return	-0.101**	
	(0.051)	
Region of residence: Grand Tunis	-0.016	0.108*
	(0.055)	(0.059)
Unemployment rate in the region of residence	-0.011**	-0.058***
	(0.005)	(0.006)
rho	0.881***	
	(0.084)	
Wald chi2(.)	461.08***	
N	3749	

Notes: between () standard deviaition. significances: * (10%), ** (5%), ***(1%)

Table 6: Estimation Results of the Gain Function

Variables	Gain function for individuals with SIVP1 (1)	Gain function for individuals without SIVP1 (2)
Constant	5.902***	6.318***
	(0.443)	(0.177)
Sex		
woman (**ref**)	-	-
man	0.328***	0.176***
	(0.062)	(0.026)
Marital Status		
CVD (**ref**)	**-**	-
M	0.138*	0.092**
	(0.078)	(0.044)
Number of children		
1 and + children (**ref**)	-	-
no children	0.128	0.015
	(0.097)	(0.065)
Age	-0.006	-0.027***
	(0.016)	(0.006)
diploma level		
Masters Degree, doctors and lawyers (**ref**)	-	-
Senior Technician	-0.131**	-0.137***
	(0.064)	(0.030)
engineer _architect	0.234***	0.489***
	(0.078)	(0.039)
enterprise size		
No and 1 to 49 employees (**ref**)	-	-
50 to 499 employees	0.239***	0.293***
	(0.074)	(0.032)
500 and mores employees	0.304***	0.289***
	(0.068)	(0.031)
Type contract		
CDD and P21-21(ref)	-	-
CDI	0.358***	0.455***
	(0.057)	(0.028)
PC50_50	0.307***	0.463***
	(0.070)	(0.043)
Region of employment		
Great Tunis	0.177***	0.147***
	(0.054)	(0.028)
Mills2 ($\hat{\lambda}_{21}$)	-0.195	-
	(0.127)	
Mills1 ($\hat{\lambda}_{20}$)	-	.647***
		(.091)
σ	0.469***	0.540***
	(0.043)	(0.016)
Specification Test	14.22***	97.56***
Pseudo R^2	0.2857	0.2120
N	284	1862

Table 7: Classification of Observations from the Participation Equation

		estimated numbers		Total
		Y = 0	Y = 1	
observed	**Y = 0**	91	1150	1241
		7.33%	92.67%	100%
	Y = 1	73	2435	2508
		2.91%	97.09%	100%
Total		164	3585	3749
		4.38%	95.62%	100%

Notes: Downgrading of 1223 graduates

Table 8: Classification of Observations from the Equation for Achieving SIVP1

		estimated numbers		
		Z = 0	**Z = 1**	**Total**
		1859	58	1917
	Z = 0	96.97%	3.03%	100%
		504	87	591
observed	**Z = 1**	85.28%	14.72%	100%
		2363	145	2508
Total		5.78%	94.22%	100%

Notes: Downgrading of 562 participants

Table 9: Tests of Wage Differentials Estimated

	$(\beta_{sivp1} - \beta_{SIVP0})\overline{X}$	$(\beta_{sivp1} - \beta_{SIVP0})\overline{X}$	$(\beta_{sivp1} - \beta_{SIVP0})^{j}$	$(\beta_{sivp1} - \beta_{SIVP0})\overline{X}$
total characteristics	0.587			
	(5.65***)[38]			
characteristics sociodemographic		1.099		
		(20.57***)		
Formation characteristics			-0.040	
			(15.35**)	
Employment characteristics				-0.021
				(4.29***)
log average salary observed:		with SIVP1		6.074
		without SIVP1		5.937

Table 10: Tests of the Expected Differential between the Two Groups Wage[39]

decomposition	characteristic	coefficient	Interaction
total characteristics	-0.173***	-0.179***	0.215***
	(0.049)	(0.036)	(0.047)
sociodemographic characteristics	-0.192***	-0.271***	0.327***
	(0.051)	(0.041)	(0.053)
Formation characteristics	-0.147***	-0.263***	0.274***
	(0.051)	(0.041)	(0.053)
Employment characteristics	-0.160***	-0.202***	0.226***
	(0.049)	(0.038)	(0.049)

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[38] Fisher statistic (stability test).

[39] with the decomposition formulated from the perspective of beneficiaries SIVP1 is defined as follows:

$$(\bar{S}_{sans\,SIVP}) - (\bar{S}_{SIVP})((\bar{X}_{sans\,SIVP}) - (\bar{X}_{SIVP}))'\hat{\beta}_{SIVP} + \bar{X}_{SIVP}'(\hat{\beta}_{sans\,SIVP} - \hat{\beta}_{SIVP}) + (\bar{X}_{sans\,SIVP} - \bar{X}_{SIVP})'(\hat{\beta}_{sans\,SIVP} - \hat{\beta}_{SIVP}) = caractéristique + coefficient + intéraction$$