



**LABOR MARKET PARTICIPATION AND ACCESS TO EMPLOYMENT: THE
INFLUENCE OF HUMAN CAPITAL**

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Abstract

The purpose of this study is to evaluate the role of human capital in the professional integration of young graduates in terms of labor Market participation and access to employment. Thus, our focus will be put on the impact of human capital on: 1) the probability of being active; 2) and the probability of being employed; while controlling a range of socio-economic factors. For this purpose, we exploited primary survey data. It covers 202 graduates from the Faculty of Law, Economics and Social Sciences of Tangier – Morocco, that were interviewed in 2015 (Three Years after Graduation). The performed bivariate analysis and binary logistic regression models have shown that the Master's level graduates (five years of higher education) are more likely to be active but less likely to be employed; while licensee's level graduates (three years of higher education) are more likely to be employed but less likely to be active.

Key Words: Employment - Human Capital - Labor Market participation -Professional Integration - Quantitative Analysis - Young graduates

I. INTRODUCTION

Contrary to the expected pattern of human capital investment, unemployment rate in Morocco increases with education level. Thus, in Morocco, graduates tend to have higher levels of unemployment compared to people without a diploma (22% are unemployed, compared with 14.1% of those with middle-level education and 3.7% of those without a diploma - HCP, 2016). Furthermore, graduates of faculties have higher unemployment rates than those of higher institutes (24.4% against 9.7%- HCP, 2015). In this context, the integration of graduates on the labor market has become a burning issue.

In fact, the issue of the contribution of human capital in the professional integration of young people into the labor market is still little studied in Morocco. There are few studies that have focused on this topic in the Moroccan context (e.g. BOUGROUM & P. WERQUIN, 1995; MONTMARQUETTE.C & al, 1996; M. BOUGROUM & al, 2002; M. BOUGROUM & A. IBOURK, 2003; B.MATTHIEU & L.MAGALI, 2004; M. BOUGROUM & A. IBOURK, 2004; and MOURJIF & GOURCH.A, 2008). Indeed, to our knowledge, there is no study that examines the effects of human capital on professional integration particularly in the case of graduates from the Faculty of Law, Economics and Social Sciences of Tangier (FLEST). This paper tries to fill this gap. Hence, in this study, we investigated the issue of the contribution of human capital in the professional integration of young graduates of FLEST.



According to that, this paper attempts to look into the connection between human capital and professional integration - viewed in terms of labor market participation and access to employment. While much of the argument in the literature in terms of factors contributing to professional integration, this paper looks at one of the factors i.e. human capital. Therefore, the following research question is used to guide our investigation: To what extent does human capital create impact on labor market participation and access to employment controlling for a series of individual and family characteristics? In order to achieve the aim of the research, a coherent methodology has been adopted. Thus, the cross-sectional data used for this paper comes from primary data. It covers 202 graduates of FLEST that are contacted in 2015, after three years of graduation. Concerning the processing of data, two statistical analyses were performed: Bivariate Analysis and multivariate logistic regression using R Statistical Software, SPSS, and STATA.

The remainder of the paper is organized as follows; Section 2 presents a short literature review about the relationship between human capital and professional integration (theoretical framework and empirical findings). The next section describes the methodology (Data, Sample, method) and an empirical model jointly estimating (1) the labor Market participation equation, (2) and the employment equation. The paper continues with the presentation of the main empirical results (Section 4) and ends with a discussion (Section 5) and conclusion.

II. LITERATURE REVIEWS

According to the human capital theory (*G.S. BECKER*, 1964), “human capital” can be defined by the range of productive capacities acquired by an individual through the accumulation of general or specific forms of knowledge and know-how. Thus, defenders of the human capital theory established a positive and growing relationship between educational level and probability of having better jobs with higher salaries [1]. In this sense, human capital matters when it comes to labor market integration.

From the individual level, the positive impact of human capital in the professional integration is widely acknowledged in the literature. Thus, in France, researchers agree that a higher-education diploma constitutes an asset against unemployment and plays a decisive role in access to the employment (*C.BAUDELOT & M.GLAUDE*, 1989) [2]. Additional training is also needed to give French graduates a better chance of finding a job (*V. SIMONNET & V. ULRICH*, 2000) [3].

Similarly, *C.BEDUWE* and *al.* (2009) find that the final diploma is a major factor of the professional integration [4]. These results are similar to those obtained by *T. COUPPIE & M. MANSUY* (2004) in their studies of the employment situation of juniors and seniors in 12 European countries. On the one hand, they conclude that higher education diploma protects graduates from unemployment in France, Finland and Sweden. On the other hand, they find that experience of seniors protects them particularly from unemployment in Italy, Greece and Spain [5].

This positive causal link (in the European context) does not always appear in the African context. For example, *I. CAMARA* (2011) has noted that the educational level does not contribute positively to the employability of young people in Côte d'Ivoire [6].

In Tunisia, *A. MAALEJ & S. BOUDABBOUS* (2011) confirm the great importance of diploma and branch of study in facilitating the professional integration of graduates [7]. Recent studies such as *M. LASSASI & NE HAMMOUDA* (2012) find that, at the individual level, increased educational level increases chances of participating in the labor market and gaining employment among Algerian graduates [8]. On the other side, *A.MAÂLEJ* (2014) finds that the diploma and training in Tunisia do not play a significant role in professional integration [9].



In Morocco, MONTMARQUETTE.C & al. (1996) conclude (in different Moroccan regions) that the vocational graduates are partially employed [10]. Another study conducted by M. BOUGROUM & al. (2002) find that licensee's level graduates are more likely to follow the trajectory "transitions to structured employment" and less likely to follow the trajectory "permanent studies" [11]. In the same vein, M. BOUGROUM & A. IBOURK (2003) find (in Marrakech region) that the diploma is a variable of segmentation which opposes the general education against the vocational education and the Bachelors against the licensees [12]. For their part, M. BUNEL & M. LENOIR; (2004), and MOURJIF & GOURCH.A (2008) find that studying economics at university, having licensee's degree, and studying in French, increases probability of obtaining a job [13]; [14].

Other than training and experience, the professional integration depends on many personal characteristics as the social background and differs according the gender. Indeed, previous works of SPENCE (1973) and ARROW (1973) underlined the criteria used by employers in recruitment such as sex, age, educational and family background, socioeconomic and professional status, networks, work experience [15]; [16]. Thus, at similar human capital level, professional integration is linked to other individual factors. For the variable "gender", it is commonly agreed that, at equivalent level of education, women are disadvantaged in the labor market (for example J.M. PLASSAED & W. SASSI, 2002[17] and T. COUPPIE & M. MANUY, 2004 in France; NJIKAM & al. 2005 [18] and BOUTIN, 2010 in Cameroon [19]; A. MAALEJ & S. BOUDABBOUS, 2011 in Tunisia; MONTMARQUETTE.C & al, 1996; M. BUNEL & M. LENOIR; 2004; M. BOUGROUM & A. IBOURK (2004) [20] and F. MOURJI. & GOURCH.A, 2008 in Morocco). In any case, it is fitting to point out that many authors share the same view that women are generally less likely to be active or employed than men.

As for the variable "age", in the literature, its effect also varies according to contexts and authors. M. BOUGROUM & P. WERQUIN, (1995) [21] and F. MOURJI & A. GOURCH, (2008) in Morocco point out that age has no significant effect on employment. In their studies, M. BOUGROUM & A. IBOURK, (2004) in Morocco have found that older graduates make better progress than young graduates in terms of professional integration. While NJIKAM & al. 2005 in Cameroon and LASSASI & N.E. HAMMOUDA 2012 in Tunisia have found that the chances of finding a job increase with age but decline from a certain age estimated in the quarantine where the probability begins to decrease. Also, the variable of "marital status" plays an important role in the professional integration. Following the works of NJIKAM & al. (2005) in Cameroon; and F. MOURJI & A. GOURCH, (2008) in Morocco, it stated that being married increases the likelihood of having a job.

In addition, evidence shows that the interpersonal relationships - apprehended by researchers under the concept of social capital- tend to have a great impact on the employment' access. In Morocco, C. MONTMARQUETTE, & al (1996) endorsed that the use of strong-tie (family and friends) as well as weak-tie (Internship) can help in finding jobs. Another study by F. MOURJI & GOURCH.A (2008) reported that graduates with high levels of social capital had a greater chance of obtaining employment. This result was also supported by J.M. PLASSAED & W. SASSI (2002) who found a significant positive correlation between having carried an internship and access to employment (French university graduates).

In sum, based on the literature reviews, it is therefore postulated that human capital can lead to successful professional integration. Studies also clearly substantiate the fact that professional integration is impacted through consideration of individual characteristics such as age, gender, etc. In light of this, we will test the contribution of human capital as well as some variables listed in this literature review for the case of graduates of FLEST.



III. METHODOLOGY

DATA AND SAMPLE

The cross-sectional data used for this paper comes from primary data. It covers 202¹ graduates of FLEST² - Promotion of 2012. Regarding degree level, our population is made up of master's level graduates (five years of higher education) and licensee's level graduates (three years of higher education). Regarding the branch of study, in order to form homogeneous sub-groups, we have classified branches on two categories. We consider studies in the field of economics and in legal sciences.

Thus, the survey design was based on the literature review and previous relevant surveys (e.g. AMERM project, 2012). In addition, higher education experts commented on the draft survey and their comments were taken into account. Finally, the survey was divided into four sections:

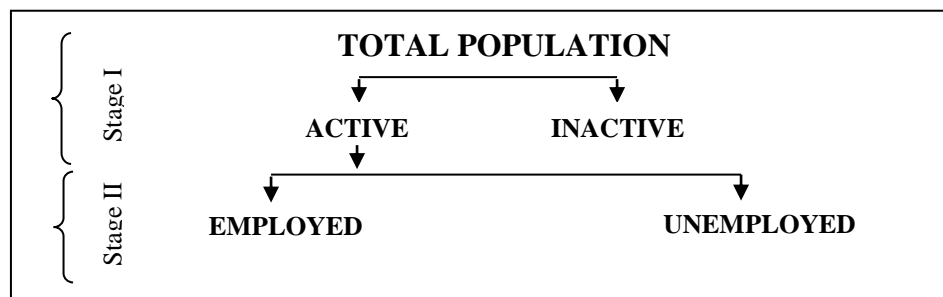
- Human capital accumulated by graduates (diploma, branch and language of study)
- Socio-economic characteristics of graduates (age, gender, marital status, internships, educational-level and Professional status of father)
- Professional situation of graduates at the time of the survey (Active/Inactive, unemployed/employed)
- Characteristics of the job and the perception of respondents about their professional integration.

Only the first three axes will be exploited in this paper. The survey was carried out in 2015. Graduates were interviewed personally and partially by telephone (Depending of the constraints of the respondents). The ethical approval has been obtained from the university before starting data collection.

Econometric modeling

Figure 1 represents the approach that has been followed in econometric modeling. The analysis is conducted in two stages. In the first stage, we worked on the total population (active and inactive). The active population (AP) was used for the second analysis of the employability of university graduates. The (AP) is composed of individuals who performed an economic activity (employed population) or actively seeking employment at the time of the survey (unemployed population).

Figure 1: Illustration of the approach taken during modeling



¹ The theoretical sample size is estimated at 295. However, we were able to contact only 260 people. Of a total of 260 graduates, 18 people did not meet our eligibility criteria, and 40 did not respond to our call; As a result, the final sample has 202 graduates. We excluded: graduates who work in parallel with the studies at the time of interview in 2015; and graduates who held the same job prior to graduation in 2012.

² The Faculty of Law, Economic and Social Sciences of Tangier was established, in 1997, as part of ABDELMALK ESSAADI University. It aims at developing teaching and research programs in the legal, economic and social fields. It adopted the LMD pedagogic program (License-Master-PhD) in 2003 to improve the quality of higher education and offer students an adequate academic environment, effective teaching and a well-diversified training.



In order to explain the participation (Active / Inactive) and access of young people to employment (Employed / Unemployed), binary logistic regression was used to the extent that the dependent variable in both cases is a qualitative variable with a binary value. However, the second equation concerns a subsample obtained selectively, which can lead to biases. To correct them, the procedure of HECKMAN (1976) in two stages will be used.

1st step (selection model)

The main empirical task of this subsection is to investigate the relationship between human capital and the labor Market participation. For that reason, the probability of being active is examined by a binomial LOGIT model that includes the human capital and a number of personal controls presented in Eq.1. Thus, we observe in the data a variable Y (Labor market Participation), that takes value 1 if the graduate is active and 0 if inactive:

$$Y_i = \begin{cases} 1 & \text{If graduates "i" is active} \\ 0 & \text{If graduates "i" is inactive} \end{cases} \iff \begin{matrix} \text{The LOGIT model used is shown below:} \\ Y_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \varepsilon_i \end{matrix} \quad (\text{Eq. 1})$$

The dependent latent variable y^* is associated with labor market Participation and not observed in the data. (KH_i) is the variable of interest that stands for the Human capital accumulated by the individual i (HC is reflected by the degree level; the study area, and the language of study). (SOC_ECO_i) is a vector that controls personal characteristics. β_1 : Constant/ β_2 ; β_3 : Model settings. The error term ε_i is assumed to be distributed following a logistic distribution.

We observe $Y_i = 1$ as soon as this propensity exceeds the threshold τ :

$$Y_i = 1 \iff \{Y_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \varepsilon_i\} > \tau$$

$$Y_i = 0 \iff \{Y_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \varepsilon_i\} < \tau$$

\iff

$$Y_i = \begin{cases} 1 & \text{if } Y_i^* > \tau \\ 0 & \text{if not} \end{cases}$$

We deduce that:

$$\text{PROB}(Y_i = 1) = \text{Pr}\{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \varepsilon_i > \tau\}$$

$$\text{PROB}(Y_i = 1) = \text{Pr}\{\varepsilon_i > \tau - \beta_1 - \beta_2 KH_2 - \beta_3 SOC_ECO_3\}$$

The LOGIT model corresponds to the logistic law, with the distribution function Λ :

$$\begin{aligned} F(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3) &= \Lambda(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3) = \frac{e^{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3}}{1 + e^{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3}} \\ &= \frac{1}{1 + e^{-(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3)}} \quad (2) \end{aligned}$$



We then calculate the inverse of the Mills ratio.

$$\hat{\lambda} = \frac{\lambda(\hat{\beta}_1 + \hat{\beta}_2 KH_2 + \hat{\beta}_3 SOC_ECO_3)}{\Lambda(\hat{\beta}_1 + \hat{\beta}_2 INST_2 + \hat{\beta}_3 SO_CECO_3)} \quad (3)$$

With:

$\lambda(.)$: Probability density function

$\Lambda(.)$: The cumulative distribution function of standard logistic distribution

2nd step (Substantial model)

At the second step, we estimate the probability of obtaining a job. The approach is to explain the dichotomous variable E (Access to employment) which takes the value 1 if the graduate is employed and 0 if not. We assume that:

$$E_i = \begin{cases} 1 & \text{If graduates "i" is employed} \\ 0 & \text{if not} \end{cases} \Leftrightarrow E_i = \begin{cases} 1 & \text{if } E_i^* > \tau \\ 0 & \text{if not} \end{cases}$$

In order to correct the possible selection bias, the variable "inverse of the Mills ratio" λ calculated in the previous step (3) will be introduced as an explanatory variable in the following equations:

$$E_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i + \varepsilon_i \quad (4)$$

With: E_i^* (Latent variable) / KH_i : Human capital accumulated by the individual i / the vector (SOC_ECO_i) : is related to the graduate's characteristics / λ_i : the inverse of the Mills ratio / β_1 : Constant / β_2 ; β_3 , and β_4 : Model settings / ε_i : Term of error.

In the same way, we observe $E_i = 1$ as soon as this propensity exceeds the threshold τ :

$$E_i = 1 \Leftrightarrow \{E_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i + \varepsilon_i\} > \tau$$

$$E_i = 0 \Leftrightarrow \{E_i^* = \beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i + \varepsilon_i\} < \tau$$

$$\Leftrightarrow$$

We deduce that:

$$PROB(E_i = 1) = P_r\{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i + \varepsilon_i > \tau\}$$

$$PROB(E_i = 1) = P_r\{\varepsilon_i > \tau - \beta_1 - \beta_2 KH_2 - \beta_3 SOC_ECO_3 - \beta_4 \lambda_i\}$$

The LOGIT model corresponds to the logistic law, with the distribution function Λ :

$$F(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i) = \Lambda(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i)$$

$$= \frac{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i}{1 + e^{\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i}}$$

$$= \frac{1}{1 + e^{-(\beta_1 + \beta_2 KH_2 + \beta_3 SOC_ECO_3 + \beta_4 \lambda_i)}} \quad (5)$$



IV. RESULTS³

BIVARIATE ANALYSIS

As indicated in the table below, 65.8% of graduates were active – at the time of survey. Thus, when testing the bivariate connections between the individual variables and the labor market participation, it turned out that seven of the 9 variables show a statistically significant relationship with labor market participation. More specifically, Master's level graduates were the most likely to be active (75.6%), while licensee's level graduates were the most likely to be inactive (42%). Likewise, graduates who have studied in Arabic were less active (57.5 %) than graduates who have studied in French (75%).

Table 1: Results of bivariate analysis

	X ²	P-value	LABOR MARKET PARTICIPATION (V1)		X ²	P-value	ACCESS TO EMPLOYMENT (V2)	
			Active (%)	Inactive (%)			EMPLOYED (%)	UNEMPLOYED (%)
Human capital								
<i>Degree level (V5)</i>	6,81	0,009			4,04	0,044		
License			58	42			81,5	18,5
Master			75,6	24,4			66,2	33,8
<i>Study area (V6)</i>	2,37	0,124			10,39	0,001		
Economics			73,1	26,9			89,8	10,2
Legal Sciences			62,2	37,8			64,3	35,7
<i>Language of study (V7)</i>	6,83	0,009			5,52	0,019		
Arab			57,5	42,5			63,9	36,1
French			75	25			81,9	18,1
Socio-economic characteristics								
<i>Age (V8)</i>	1,15	0,283			0,16	0,688		
[22-25]			42	27			71,4	28,6
[26-29]			91	42			74,7	25,3
<i>Gender (V9)</i>	7,89	0,005			7,54	0,006		
Men			75,8	24,2			83,8	16,7
Women			57	43			62,3	37,7
<i>Marital status (V10)</i>	12,33	0,000			10,34	0,001		
Married			79,3	20,7			85,5	14,5
Single			55,7	44,3			60,9	39,1
<i>Educational level of father (V11)</i>	13,41	0,004			9,61	0,022		
Low level			78,9	21,1			60	40
Medium level			71,7	28,3			76,3	23,7
High level			49,3	50,7			90,9	9,1
<i>Father's employment (V12)</i>	16,50	0,006			11,12	0,49		
Retired			65,1	34,9			67,9	32,1
Independent			73	27			55,6	44,4
In the public sector			41,9	58,1			77,8	22,2
In the private sector			80,6	19,4			93,1	6,9
Liberal professions			77,8	22,2			78,6	21,4
<i>Internship (V13)</i>	8,75	0,013			8,40	0,015		
None internship			52,2	47,8			55,6	44,4
One internship			72,1	27,9			79,6	20,4
Several internships			73,8	26,2			81,6	18,8
Tous les diplômés			65,8%	34,2%			73,7%	26,3%

³ In fairness of clarity, we only present the significant results.



In terms of graduates' gender, female were less active (57%) than male graduates (75.8%). Similarly, married graduates were more likely to be active (79.3%) than single graduates (55.7%). Regarding other variables representing the social capital of graduates; It seems to us that the probability of being active increases slightly, but significantly ($X^2 = 8.752$ to $p = 0.013$) when the graduate had work experience. Thus, graduates who have completed internships were more likely to participate in the labor market three years after graduation (72.1%) than those without work experience (52.2%). Furthermore, graduates whose father had high educational-level were less active (49.3%) than graduates whose father had low or medium educational-level (78.9% and 71.7% respectively). Moreover, graduates whose father was working in public sector were the least likely to be active (41.9%) while graduates whose father was working in private sector were the most likely to be active (80.6%).

Interestingly, 73.68% of active graduates were employed. In the same way, when testing the bivariate connections between the individual variables and the access to employment, it turned out that seven of the 9 variables show a statistically significant relationship with access to employment. Thus, the results shown in Table 1 indicate that graduates who had master's level were the least likely to have a job (66.2%) while graduates who had licensee's level were the most likely to be employed (81.5%). Economic graduates were the most likely to be employed (89.8%) and the least likely to be unemployed (10.2%). Furthermore, graduates who pursued studies in French were the most likely to be employed (81.9%), while Graduates who have studied in Arabic were the least likely to have a job (63.9%).

In addition, when graduates were divided whether they were employed or unemployed, female graduates were less employed (62.3%) than male graduates (83.3%). Married graduates were the most likely to be employed (85.5%), while single graduates were the most likely to be unemployed (39.1%). With respect to variables representing the social capital of graduates, it seems that graduates who have completed several internships were the most likely to be employed (81.6%) and the least likely to be unemployed (18.8%). Furthermore, graduates whose father had high educational-level were the most likely to be employed (90.9%) and the least likely to be unemployed (9.1%). Moreover, graduates whose father was working in private sector were the most likely to be employed (93.1%).

LOGISTIC REGRESSION RESULTS

1st step (selected model)

In this first step, we examine the effect that human capital contributes in the probability of being active, compared to inactivity (The reference category), controlling for the effects of the other independent variables. To identify the independent effects of each factor, we first run Model 1 with degree level and study areas. Model 2 includes language of study and we finally run a full model (model 3) with both human capital and control variables. Table 2 presents the findings from the binary logistic analysis.

The results of Model 1, indicate that, graduates who had a licensee degree are less likely to be active compared to those who had a Master degree. This chance decreases to the order of 30, 75%⁴.

The results of Model 2, show that graduates who had a licensee degree are less likely to be active compared to those who had a Master degree. This chance decreases to the order of 28, 88%. Also, graduates who studied in Arabic were less likely to be active (rather than be inactive) than graduates who studied in French (OR=0.30).

⁴ 30, 75% = $\left[\frac{e^{-0.812}}{1 + e^{-0.812}} \right] * 100$



Table 2: Modeling results of labor market Participation (N=202)

Labor market Participation ^(a)	Model 1		Model 2		Model 3	
	β	e^{β}	β	e^{β}	β	e^{β}
INDEPENDENT VARIABLES						
HUMAN CAPITAL						
[Degree=License]	-0,812	0,444	-0,902	0,406	-1,568	0,209
[Degree=Master]. MR	0 ^b	-----	0 ^b	-----	0 ^b	-----
[Study _ area=Economics.]	0,517*	1,677	-0,44*	0,643	-0,892 *	0,410
[Study _ area=Legal Sciences.]. MR	0 ^b	-----	0 ^b	-----	0 ^b	-----
[Language _ study=Arab]	-----	-----	-1,191	0,304	-2,231	0,107
[Language _ study=French]. MR	-----	-----	0 ^b	-----	0 ^b	-----
CONTROL VARIABLES						
[Age=22-25]	-----	-----	-----	-----	0,266*	1,304*
[Age=26-29]. MR	-----	-----	-----	-----	0 ^b	-----
[Gender=Men]	-----	-----	-----	-----	1,846	6,336
[Gender=Woman]. MR	-----	-----	-----	-----	0 ^b	-----
[Marital _ Stat=Married]	-----	-----	-----	-----	1,989	7,307
[Marital _ Stat=Single]. MR	-----	-----	-----	-----	0 ^b	-----
[Internship= Non Internship]	-----	-----	-----	-----	-0,921	0,398
[Internship =1 Internship]	-----	-----	-----	-----	0,015	1,015
[Internship =Several Internships]. MR	-----	-----	-----	-----	0 ^b	-----
[Education_ Father=Medium level]	-----	-----	-----	-----	0,886	2,424
[Education_ Father=High level]	-----	-----	-----	-----	-0,755	0,470
[Education _ Father=Low level]. MR	-----	-----	-----	-----	0 ^b	-----
[Employ_ Father=Retired]	-----	-----	-----	-----	-1,220*	0,295*
[Employ_ Father=Independent]	-----	-----	-----	-----	-1,181 *	0,307*
[Employ _ Father = Public sector]	-----	-----	-----	-----	-1,643*	0,193*
[Employ _ Father =Private sector]	-----	-----	-----	-----	-0,748*	0,473*
[Employ _ Father = Liberal Profess]. MR	-----	-----	-----	-----	0 ^b	-----
<i>Constant</i>	0,971		1,988		3,187	
X ²	9,414 (0,009)		15,630 (0,001)		95,666 (0,000)	
R ² / NAGELKERKE	6,3%		10,3%		52,2%	

(a): The reference modality is: Active / (*): Not significant" at the 0.05 / MR: Reference modality

SPSS software

Results for Model 3 indicate that all significant variables in Model 2 (degree level and language of study) remain statistically significant, with minor drop of coefficients. Specifically, graduates with license degree decreased their odds (OR=0.20) of activity rather than inactivity. Similarly, graduates who studied in Arabic were less likely to be active rather than be inactive than graduates who studied in French (OR=0.10). The findings from the control variables uncover important results. Regarding individual characteristics, results indicate that except "age" and "employment of father", all variables are related to labor market participation. Thus, as expected, male graduates had 6.33 times greater odds of being active rather than being inactive, compared to female graduates, in other words, male graduates were more likely to be active (86.37%) than female graduates. Similarly, married graduates were more likely to be active (OR=7.30) rather than be inactive than single graduates.

Among variables of social capital, only the educational level of father and the work experience were significant in the comparison between activity and inactivity. Thus, Graduates whose father had High educational level were negatively related to participation versus inactivity. In addition, graduates who did not have work experience (with no internship) were less likely to be active (OR= 0.39) rather than be inactive compared with their counterparts with work experience.



Step 2 (substantial model)

Table 3: Modeling results of access to employment (N=133)

Access to employment ^(a)	Model 1			Model 2			Model 3		
	Coef.	P-value	Marg. effect	Coef.	P-value	Marg. Effect	Coef.	P-value	Marginal effect
Explanatory variables									
Human capital characteristics									
Degree: Master	0.0754	0.715	0.0286	-0.6015	0.010	-0.1405	-0.8258	0.014	-0.1491
Study area: Economics	0.6574	0.009	0.2498	0.9803	0.006	0.2290	1.2795	0.006	0.2310
Language of study: Arab	-----	-----	-----	0.3638	0.230	0.0849	0.1295	0.770	0.0233
Socio-economic characteristics									
Age: [26-29]							0.1633	0.165	0.0294
Gender: Men							0.6304	0.147	0.1138
Marital status: Married							0.8343	0.091	0.1506
Educational level of father:									
Medium level							1.2351	0.501	0.3065
High level							7.8452	0.999	1.3513
Low level (RM)							****	****	****
Employment of father:									
Independent							0.0871	0.118	0.1171
Public sector							-0.3213	0.579	-0.0580
Private sector							1.0369	0.039	0.1872
Liberal Profession							-6.6675	0.999	-1.2037
Retired (RM)							****	****	****
Internship:									
1 Internship							0.1353	0.134	0.0013
Several Internships							0.2601	0.434	0.0469
None Internship (RM)							****	****	****
Constant		-0.2818381			0.7902764			-4.615959	
Inverse of the Mills ratio		0.1523778			0.17899500			0.1459883	
Inverse of the Mills ratio (p-value)		0.2818381			0.4011287			0.519155	
Observations number		133			133			133	
Wald Chi2 (2)		8,20			13.07			16.38	
Prob.>Chi2		0.0166			0.0045			0.045	
Pseudo R ²		0.1820101			0.210133			0.321126	

(a): The reference modality is: Unemployed / RM : Reference modality

STATA software

In this second step, we examine the effect that human capital contributes in the probability of being employed, compared to unemployment (The reference category), controlling for a series of individual and family characteristics. To identify the independent effects of each factor, we first run Model 1 with human capital (in terms of degree level and branch of study). Model 2 includes language of study and we finally run a full model (model 3) with both human capital and control variables. Table 3 presents the findings from the binary logistic analysis.

In the model 1, pursuing studies in economics was statistically significant. Thus, it seems that moving from “Legal sciences” to “Economic sciences”, the probability of being employed increases by 0.24, ceterus paribus. The modalities of diploma level and branch of study were individually significant at 5% both in second and third model. Thus, the results show that moving from license diploma to Master diploma, the probability of being employed decreases by 0.14, ceterus paribus. Also, the probability of



being employed increases by 0.22 in model 2 and by 0.23 in model 3, when moving from “Legal Sciences” to “Economic sciences”.

Regarding the findings of the control variables, results of model 3 indicate that relations between Socio-economic characteristics and employment varied by Marital status; Thus, the results show that when moving from “Single” to “Married”, the probability of being employed increases by 0.15 (with a barely detectable statistically significant difference; p -value=0.09). Moreover, when moving from “Retired father” to “Father working in the private sector”, the probability of being employed increases by 0.18.

V.I. DISCUSSION

In terms of participation in the labor market, our results are in good agreement with those of other studies that show that, the higher one's level of education, the better one's chances of participating in the labor Market (M. BOUGROUM & al. 2002; and M. LASSASI & N.E. HAMMOUDA. 2014). In fact, the descriptive data shows that the prolongation of studies is the main reason of inactivity. Thus, of the total, an increasing numbers of students engaged in higher education (27.2 percent were still pursuing studies at the time of the survey) and only 7 per cent were not seeking work because they were engaged in housework (case of the female graduates). Consequently, a simple argument is that graduates, who had a licensee degree, are more susceptible to be inactive, because most of them are still studying. Thus, in our view, these empirical results can be explained by the fact that graduates who had a licensee degree prefer to pursue their study due to additional incentives for education, in order to have a high diploma, and in an attempt to better match the changes in the skills demanded. In addition, it is well possible that graduates who had a licensee degree, facing difficulties in finding a job, are becoming discouraged and are leaving the labor force, so, to face the uncertainty of the labor market, they continue their studies. This would then explain why they are less likely to participate in the labor market. What is difficult to explain, however, is how the language of study could be a contributory factor of participation in the labor market—it might be that employers can be more selective at the hiring stage and some characteristics such as language difficulties may be used to screen out applicants. In fact, there is little doubt that mastery of language is an important factor for labor market integration. Therefore, the negative relationship between the “language of study: Arabic” and the probability of participating into the labor market may be due partly to the lack of language skills which is clearly a major obstacle to employment in all sectors. We note that the results obtained concerning the contribution of the language of study have not been compared with a high number of works in literature insofar, because this variable has been rarely manipulated.

Interestingly, each of these results still holds after controlling for the language of study and the socio-economic characteristics of the graduates, meaning that the role played by the level of the degree is not absorbed by those factors. Furthermore, the adjustment of the model by socio-economic characteristics increases its predictive capacity. This means that for an equal level of diploma, and in the same language of study, the activity varies significantly with marital status, gender, father's education level and professional experience in terms of internships.

Turning to access to employment, our results are in line with the literature that considers that the probability of being employed is higher as the number of years of study decreases (e.g., M. BUNEL & M. LENOIR; 2004; MOURJI F & GOURCH.A. 2008; I.CAMARA. 2011). The reasons for these differences are multiple. For instance, I.CAMARA (2011) confirms the high employability of young people with low educational level compared to those with a high educational level. This is due in their senses to the fact that young people who have a high educational level are not willing to do precarious jobs. Even if they perform such jobs, most of them do not report in the investigation and consider themselves as



unemployed. Our results are perfectly consistent with these outcomes and lead us to advance the same type of interpretation. Likewise, our results of access to employment can be also explained by job search theory and its recent developments. We can then argue that graduates who had master diploma have a high reservation wage, which leads them to refuse any offer that is lower than their expectations. However, we must emphasize that the decision to accept an offer of employment is not based only on their reservation wage, but also on the job characteristics that are important for the acceptance decision.

In the same report, the empirical data revealed the "field of study: law sciences" has a negative relationship with access to employment. This implies that having a diploma in law sciences is a disadvantage in terms of obtaining job, and that graduates of economic fields are more likely to be employed than those of legal fields. These differences may be due to the fact that the economic field gives graduates a huge range of skills that are in demand in wide variety of jobs whereas the legal field gives graduates specialist knowledge that can be an advantage in specific sectors. We can conclude then that investment in economic education is more profitable in terms of access to employment and the pursuit of this field of specialization tends to increase the chances of employment. These results seem to be in par with those found by MAÛLEJ. (2014).

Focusing on the socio-economic variables, it seems that the probability of being employed depends essentially on the fathers' occupational status, and the marital status (other factors do not have any influence). As to marital status, our bi-varied and multi-varied analyzes suggest that married graduates are more likely to be employed than single men. These results are in the same direction as those found by NJIKAM & al. (2005) and MOURJI. F & GOURCH.A (2008) showed that being in union significantly increases access to employment. On the one hand, those findings can be interpreted in two ways: The first is that married graduates have family responsibilities and are therefore obliged to find a job in order to support their family. In this case, they may even accept jobs that do not match their qualifications. The second explanation would be that employed graduates can afford to build a family; in this case the family situation becomes itself dependent on access to employment.

Concerning the fathers' occupational status, the results highlight that the fathers' occupational status affects the graduates' chances of employment: having a father who works in private sector increases the chance of employment. Part of the explanation seems to be that fathers who work in private sector adopted a more aggressive means of helping their children in getting jobs. Instead of simply providing job information, they may become involved directly in the recruitment process. They also may have resources that make contact easier (C. MONTMARQUETTE & al, 1996, JM PLASSAED & W. SASSI, 2002, M. BUNEL & M. LENOIR, 2004; and NJIKAM & al. 2005).

V. CONCLUSION

There are several key points which are generated through the analysis of the data. Firstly, it appears to be a general consensus that graduates who had a licensee degree and those who studied in Arabic are less likely to be active compared to those who had a Master degree and those who studied in French. Secondly, it has been explicitly mentioned that the probability of being employed decreases significantly when the student had a Master degree and increases significantly when the graduate was an economist.

Thus, our results suggest that a licensee's degree allows their holders to find a place in the labor market, this invites the students not to pursue their higher education after this diploma. But these results remain relative since the conception of the professional insertion that we have adopted in this work is very limited. It is therefore very necessary to deepen this study more thoroughly considering the quality of the job, i.e. the intrinsic and extrinsic characteristics of the job. This will be the objective of our next study.



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