

Do Educational Mismatches Influence Job Satisfaction and On-The-Job Search in Algeria?

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DO EDUCATIONAL MISMATCHES INFLUENCE JOB SATISFACTION AND ON-THE-JOB SEARCH IN ALGERIA?

Aysit TANSEL¹ & Moundir LASSASSI²

Abstract

This paper considers the effects of educational mismatches on two outcomes such as the job satisfaction and on the-job search in t Algeria. We use Algerian Labor Force Surveys for the years 2003, 2005, 2007, 2010 and 2016, we also estimate all our model on pooled data (2003-2016) to check the robustness of the results and to test the effect of time on educational mismatch and on the job search. We analyze men and women separately. We first examine the determinants of educational mismatch using multinomial probit model. Second, we analyze the determinants of skill mismatch. In the third and fourth part, we examine the effect of educational mismatch on job satisfaction and on the job, search using probit model. In all models, we introduced as control variables four blocks of variables: 1) socio-demographic characteristics, 2) human capital, 3) labor market characteristics and 4) household characteristic. For the models on job satisfaction and on the job search we add the variable educational mismatch. The salient findings are that the job satisfaction and, on the job search are strongly influenced by educational mismatch and some job characteristics for both men and women.

Keywords: Educational mismatch, Skill mismatch, Labor Market, Job Satisfaction, On the Job Search, Algeria.

JEL classification: I21, J24, J28

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1. Introduction

Educational mismatches are indicated by comparing the acquired level and field of education of an individual with the level and field of education considered most appropriate for the job. Skill mismatches are indicated by worker's responses to the statements "My current job offers me sufficient scope to use my knowledge and skills and I would perform better in my current job if I possessed additional knowledge and skills. In the assignment theory the two concepts of educational and skill mismatches are assumed to be closely related: educational mismatches imply skill mismatches which in turn have an effect on productivity and wages (Allen & van der Velden, 2001).

Research has mainly focused on the wage effects of educational mismatches, whilst skill mismatches have received less attention. Indeed, a number of papers treat both kinds of mismatches as equivalent in spite of evidence showing that they are only weakly related (Allen & van der Velden, 2001; Di Pietro & Urwin, 2006; Green & McIntosh, 2007).

Studies on educational mismatches focus on the relationship between over education and wages. The empirical evidence for developing countries is sparse. The exploration of the over education-job satisfaction relationship remains largely uninvestigated in the MENA countries due to the data limitations.

The analysis of the effect of educational mismatch on job satisfaction is particularly important. Empirical studies have suggested that job dissatisfaction due to mismatch tends to influence both the productivity of the worker and the worker's likelihood of job change (Allen & van der Velden, 2001; Amador, Nicolás, & Vila, 2012; Battu, Belfield, & Sloane, 1999; Battu, Sloane, & Belfield, 2000).

Empirical work that has analysed the effect of mismatch in job satisfaction usually finds a significant correlation between educational mismatches and job satisfaction. Battu et al., 1999 found a negative effect of over education on wages and job satisfaction, similar to the results of (Fabra Florit & Vila Lladosa, 2007; Johnson & Johnson, 2000) on the effect of skill mismatches on job satisfaction. This paper analyses the effect of educational mismatches on job satisfaction and on job search in the case of Algeria. We do not analyze the effect on wages due to a lack of data.

Underutilizations of skills also exert a negative effect on wages distinct from the effects of over education, but the effects are very small. However, skill mismatches do have a strong effect on job satisfaction and on the-job search, after controlling for job quality, whereas educational mismatches lack any effect on these outcomes (Allen & van der Velden, 2001).

Recent projections show that the number of youth (15-24 years old) in Algeria are expected to increase from 6164 thousand in 2019 to 9604 thousand in 2040 (ONS-Algeria). Recently, the average educational

attainment of Algerian population has increased considerably. On average, more than 350,000 university graduates enter the labor market each year. Algeria can benefit from this demographic dividend of the increasing share of better educated people in order to build a solid economy and bridge its productivity gap. Algeria has allocated considerable amount of resources to improve the education quality. In spite of this, the educated people are the most affected by unemployment. The unemployment rate among the university graduates was 18% (11% for men and 23.9% for women) (ONS 2019).

Skill and educational mismatches represent one of the most important costly factors for MENA labor markets because of their adverse effects on productivity and therefore on the economic growth. Skill mismatches have potentially adverse effects at both the micro and macro levels. In this article we focus on the effects at the individual level. At this level, evidence from high income countries indicate that high skill mismatches are likely to affect wages and salaries, reduce job satisfaction and increase the likelihood of frequent job changes (Mincer, 1974; Verdugo and Verdugo, 1989; Daly et al., 2000; Dolton and Vignoles, 2000; Allen and van der Velden, 2001; Chevalier and Lindley, 2009). The objective of this paper is to fill this empirical gap by analyzing the effect of educational mismatches on job satisfactions and job change in Algeria a developing country.

Amador et al., 2012 examined the effects of job–worker mismatches on job satisfaction using the eight waves (1994-2001) of Spanish data in the European Community Household Panel (ECHP). They estimated the impacts of both educational and skill mismatches. Job satisfaction appears to be influenced by workers' previous job perceptions, suggesting a dynamic structure for job satisfaction. Research on job satisfaction effects of job–worker mismatches is typically based on the estimation of ordered discrete choice models for a cross section of data (Allen & van der Velden, 2001; Battu et al., 1999, 2000).

The outline of the paper is as follows. After the introduction, Section 2 will present the improvement in the educational attainment and the characteristics of the Algerian labor market. Section 3 will discuss the methods followed in estimation and the data used in the paper. Section 4 will present the results of the analysis, and Section 5 will conclude.

2. Background on Algerian labor markets

The labor force activity rate in Algeria remained very low, hovering at around 40 per cent (as compared to about 60 per cent in middle-income countries). It increased by a mere 1.2 percentage points between 2001 and 2019, going from 41 per cent in 2001 to 42.2 per cent in 2019. This was not enough to keep up with the population growth. Given high demographic growth, the active population increased by 48 per cent over the period, going from 8.5 million people in 2001 to 12.7 million people in 2019.

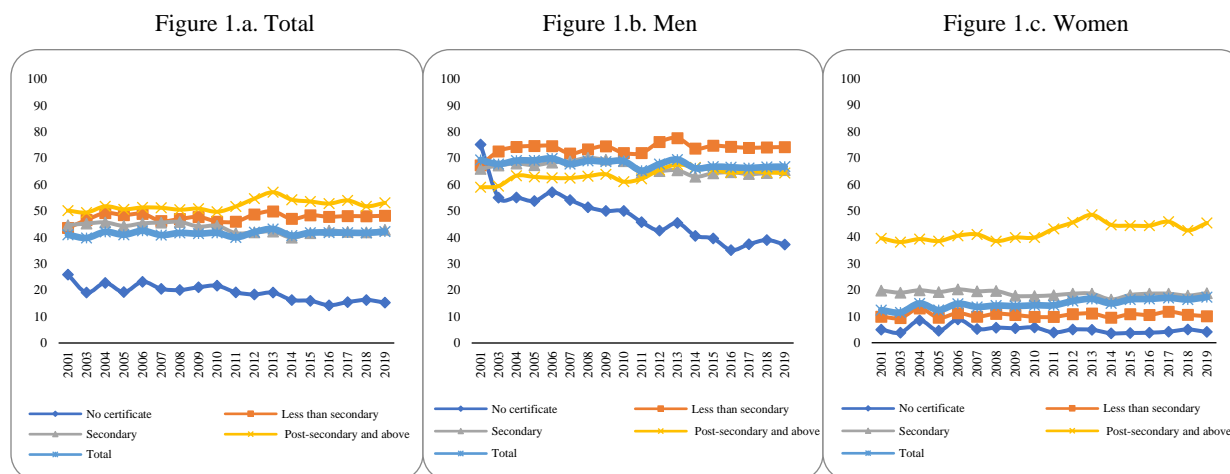
When broken down by sex, it is notable that for men, the labor force participation rate fell by 2.5 points during this period (from 69.3 per cent in 2001 to 66.8 per cent in 2019). On the other hand, for women, labor force participation rate increased by 4.9 points (rising from 12.4 per cent in 2001 to 17.3 per cent in 2019). Despite this increase, the activity rate of women in Algeria remains very low.

Overall, labor force participation rates increase with the level of educational attainment. In Algeria as it is in many other countries. This relationship is more visible for women than for men. Women with higher education have higher labor force participation rates compared to women with secondary education and below. Conversely, for men it is those with secondary and middle education who participate the most in the workforce.

Empirical research on the determinants of labor force participation find a positive relationship between women's education and labor force participation (Chamlou, Muzi and Ahmed 2011). It was thus expected that an increase in educational attainment would translate into an increase in female participation. However, this was not only the case for Algeria, as the same result appears to occur for all of the MENA countries. The participation rate of women remains low and stagnant in spite of the improvements in their education levels. This phenomenon is now referred to as the "MENA paradox" (Assaad, Hendy, Lassassi, & Yassin, 2020; Lassassi & Tansel, 2022).

Three possible explanations can be ventured for the MENA Paradox: First there have been recent reductions in employment opportunities in the public sector, which has direct consequences on the participation of women particularly of those who are, educating in the labor market. Women in the Arab countries prefer to work in the public sector for cultural and social considerations (Assaad et al., 2020). A second explanation is that the formal private sector has certainly created jobs in recent years but it did not compensate for the jobs lost in the public sector. A third explanation could relate to the increase in the weight of the informal sector, which offers jobs that are not favorable to the employment of women, particularly of the married women. Also, in recent years, employment growth has been seen primarily in sectors that are not favorable to women's employment (the construction sector, for example, is traditionally a sector which predominantly employs men).

Figure 1. Labour force participation rate, by education, Algeria, 2001-2019



Source: Based on authors' computations using Algerian Labor Force Survey 2001-2019 - ONS.

The unemployment rate in Algeria has fallen considerably in recent years. In fact, it fell by around 16 percentage points between 2001 and 2019, going from 27.3 per cent in 2001 to 11.4 per cent in 2019. In absolute terms, 629,000 people ceased to be unemployed between 2001 and 2019. For men, the unemployment rate went down from 26.6 to 9.1 per cent and for women; it fell from 31.4 to 20.4 per cent over the same period (2001-2019).

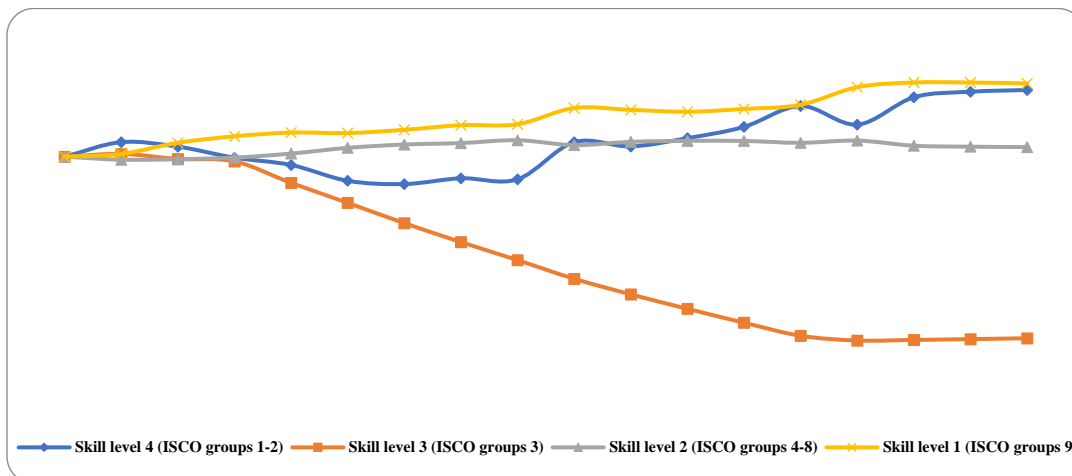
The unemployment rate has fallen for both young people and adults over the past 15 years. Nevertheless, young people aged 15–24 are three times more likely to be unemployed than adults aged 25 and over. The gap in the unemployment rate between youth and adults stabilized at around three points between 2001 and 2019. A comparison of the evolution of the unemployment rate between young people and adults by sex also reveals that unemployment affects women more, whether youth or adults.

The university graduates experience high rates of unemployment. The unemployment rate for university graduates is 18 per cent, with a gap between women (24 per cent) and men (11 per cent) (ONS-2019). For women, this means that one in four graduates is unemployed after leaving university, while for men, one in ten graduates is unemployed after leaving university. The unemployment rate of people with higher levels of education fell by 8 percentage points between 2001 and 2019. On the other hand, for women, the unemployment rate fell by 7.8 percentage points between 2001 and 2014 before experiencing an increase of 8 percentage points between 2015 and 2019. For graduates of vocational training centers, the unemployment rate was 13.5 per cent (20.7 per cent for women vs. 11.5 per cent for men).

The structure of employment by occupational group tells us about the quality of employment created by the economy. Taking the year 2000 as a basis for comparison, it emerges that the Algerian economy created mostly unskilled jobs. The "Skill Level 1" jobs created was slightly higher than the jobs created in the "Skill

level 4" category. It is important to point out that from 2008 onwards, the Algerian economy created more and more qualified jobs (Skill level 4). The other striking result is the very significant decrease in employment in the intermediate occupations (Skill level 3).

Figure 2. Evolution of the structure of employment by major occupational groups, Algeria, 2000-2017

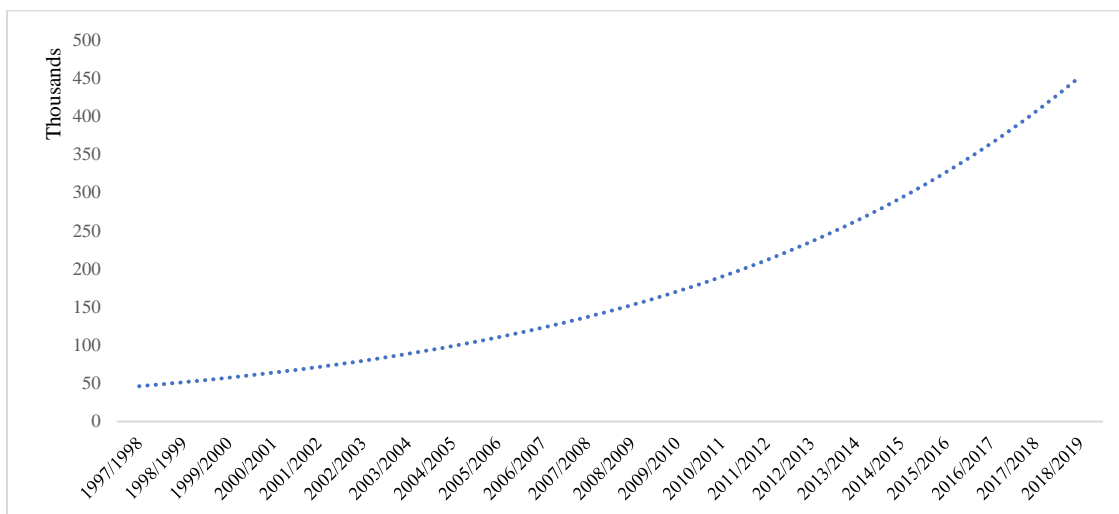


Source: Constructed by the authors using ILO data - estimates - 2000-2017.

Note: Skill level 4 = Directors, executives and managers, intellectual and scientific professions; Skill level 3 = Intermediate professions; Skill level 2 = Staff providing direct services to individuals, traders and salespeople, Farmers, skilled workers in agriculture, forestry and fishing, Skilled trades in industry and crafts, Plant and machine operators and workers in assembly; Skill level 1 = Elementary professions.

According to data from the Ministry of Higher Education, the number of students enrolled in universities is growing steadily, from less than 400,000 in the early 1970s to more than one million in 2018. According to the same source, an average of 350 thousand students graduates each year from the Algerian universities.

Figure 3. Evolution of the number of university graduates, Algeria, 1997 - 2019



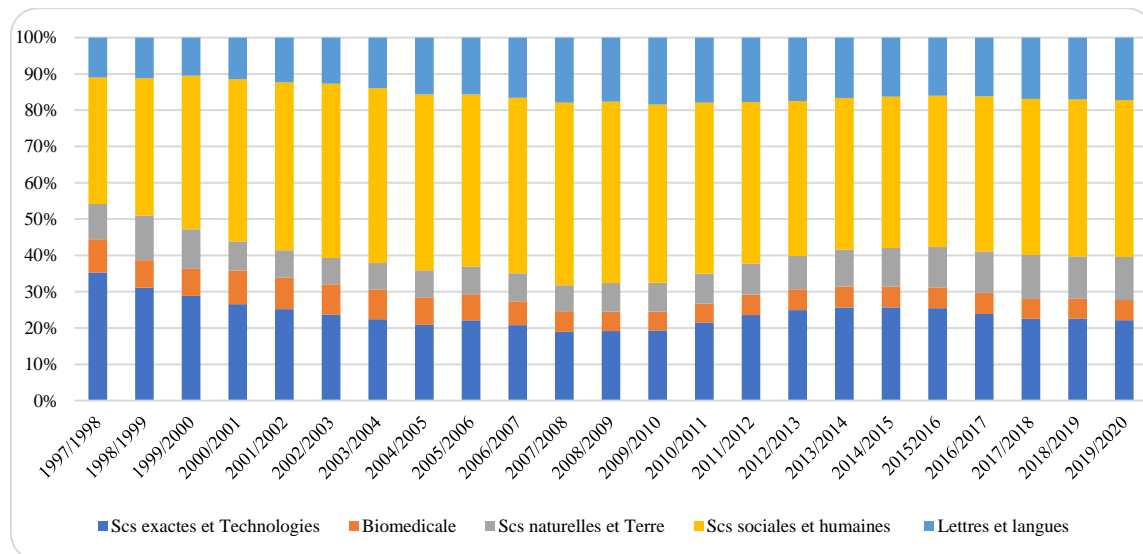
Source: Ministry of Higher Education and Scientific Research - In Publications: Statistical Yearbook- MESRS.

The number of graduates has thus grown since the first reform of the higher education system in 1971. In fact, the number of annual graduates rose from 1,700 for the academic year (1971/1972) to 107,500 in (2004/2005), 199,700 in (2009/2010), 292,683 in (2015/2016) and finally reached the bar of 350 thousand graduates in (2018/2019).

This enormous increase in the enrollment in higher education was not based on a strategy of economic needs. The distribution of students by field of training clearly shows the increase in the share of students in the field of social sciences and humanities (more than 8 percentage points increase between 1997/1998 and 2019/2020) and in the field of letters and languages (more than 6 points over the same period). On the other hand, the share of registered students decreased by 13 percentage points in the fields of exact sciences and technologies and by 3.6 points in biomedical sciences.

The distribution of graduates by fields of study shows that graduates in social sciences and humanities represent the largest share (43.4%). This field is followed by those of natural sciences / technology (25.4%) and letters / languages (18.1%). Graduates of natural and biomedical sciences represent the smallest share (13.1%). The number of graduates in natural sciences and technologies fell by 16.8 percentage points recently. For the academic year 1996/1997, the share of graduates in natural sciences and technologies represented 42.2% of all graduates, but this share has declined sharply in recent years, and it now represents only 24% of all graduates.

Figure 4. Evolution of graduates enrolled by major areas of training, Algeria, 1997- 2020



Source: Constructed by the authors using data from the Ministry of Higher Education and Scientific Research - Statistical Yearbook.

3. Methodology and Analysis

Educational mismatch is defined by comparing the actual and the required levels of education using the International Standard Classification of Occupations (ISCO) (ILO). Each occupation group is assigned a required level of education in accordance with the International Standard Classification of Education (ISCED) (UNESCO). A worker is then classified as well-matched if his or her highest level of acquired education is equal to the required level of education of his or her ISCO group. He/she is classified as over (under) educated if his or her actual education level is greater (lower) than the required education level. We will use Labor Force Survey (LFS) of Algeria (2003, 2005, 2007, 2010 and 2016). We will be able to examine the developments over time. We will analyze men and women separately.

We will first examine the determinants of educational mismatch by using a multinomial probit model to estimate the behaviour for individuals to be mismatched or not. Second, we will analyze the determinants of skill-mismatch by estimating probit model on LFS conducted on 2010 (the only LFS we have the question is asked to employees about the use of the knowledge acquired in the training). Third, we will examine the effects of worker-job mismatch on job satisfaction by using a probit model. After, we will examine the effects of the worker-job mismatch on-the-job search using a probit model. In our surveys, currently, employed individuals were asked the following question: “Did you apply for any other jobs to replace your current job? With a Yes or No answer”.

4. Descriptive analysis of qualification mismatch in Algeria

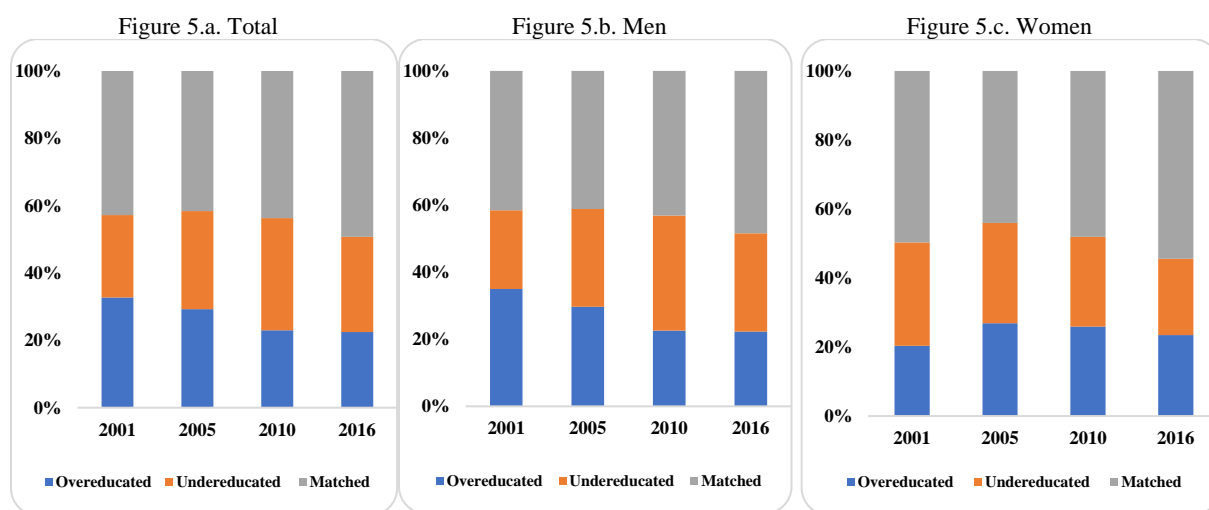
Mismatch is defined with reference to the demands of a job, that is, on the demand side. 1) *Qualification mismatch* refers to a situation in which an employed person, during the reference period, held a job whose qualification requirements did not correspond to the level and / or type of qualification he/she possessed. Qualification mismatch includes: a) Mismatch by level of education: occurs when the level of education of the person employed does not correspond to the level of education required to perform their function. Over-education occurs when the level of education and training of the employed person is higher than that required to perform their job. Under-education occurs when the level of education and training of the employed person is lower than that required to perform their job. b) Mismatch by field of study: occurs when the field of study of the employed person does not correspond to the field of study required to carry out their work. 2) *Skills mismatch* refers to a situation in which an employed person, during the reference period, held a job where the required skills did not match the skills they possessed.

Qualifications mismatch

A qualification mismatch indicator was calculated by level of education for men and women separately and by age group (15-24 years, 25-34 years, 35-59 years, 60-64 years). For each occupation, we calculate the mode of education level. We think of mode as the level of education required for the job. If the job seeker's level of training is higher than the level required for the job, then the person is in an “over-educated” situation. On the other hand, if the job seeker's level of training is lower than the level required by the job, then the person is in an “undereducated” situation.

Analysis of the results shows that women hold more jobs commensurate with their level of education (54.4%) compared to men (48.4%). More than 22% of men are in a situation of over-education (23.5% for women) and 29.3% in a situation of under-education (22.1% for women). By age, it appears that young people (15-24 years) hold more (61.5%) jobs in line with their level of education compared to older people. The adequacy decreases with age 56% for those between 25 and 35 years old, 44.1% for those between 35 and 59 and 21.3% for those between 60 and 64 years old. Older people are more in a situation of undereducated (72.1% for those aged between 60 and 64). On the other hand, those aged between 15-24 and 25-34 have the most jobs in a situation of over-education.

Figure 5. Educational Mismatch by gender, Algeria - 2001 - 2016



Source: Constructed by the authors based on Labor Force Survey 2001-2016 - ONS.

The analysis shows that: Overall, the share of those in a situation of adequacy increased by 6.5 points between 2001 and 2016. Similarly, the share of workers in a situation of under-education increased by 3.8 points. On the other hand, the share of workers in a situation of over-education fell by 10.2 points. The share of workers holding jobs commensurate with their level of education has increased for both men (more than 6 points) and women (4 points). For men, the share of those in a situation of over-education has

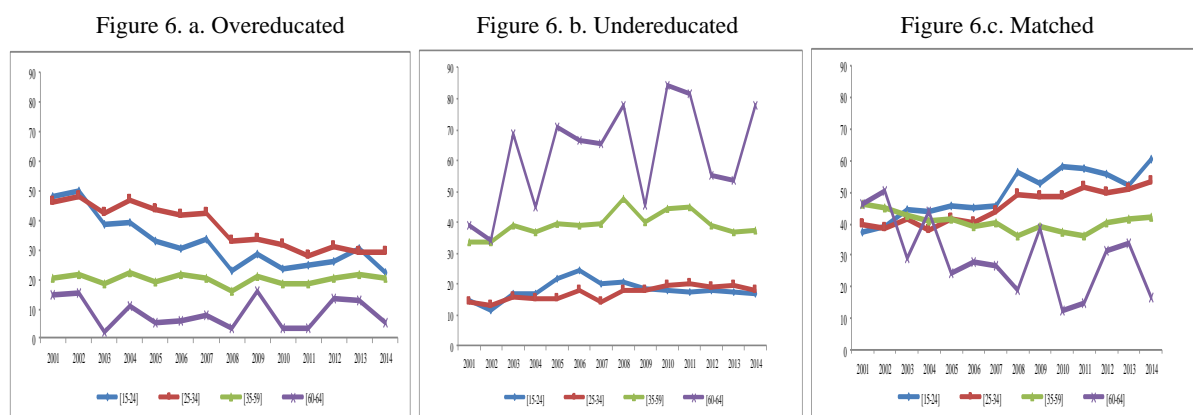
decreased by 12.7 points. On the other hand, the proportion of women in this situation increased by 3.1 points. For women, the share of those in a situation of undereducated has decreased by 8 points. On the other hand, the proportion of men in this situation increased by 5.8 points.

Three explanations: 1) pressure on the labor market, more and more young people entering the labor market (demographic aspect) and who are increasingly university graduates (350,000 graduates in 2019/2020). 2) The Algerian economy is creating less and less qualified jobs to absorb the cohorts of graduates entering the labor market. 3) Lack of statistics on the needs of the Algerian labor market, which explains this gap between supply and demand.

Figure 6 reveals that it is mostly those under the age of 34 who are overeducated (22.4 per cent for those aged 15–24, and 29.1 per cent for those aged 25–34). When it comes to being undereducated, it is people aged over 35 who are most likely to be in this situation (37.5 per cent for those aged 35–59 and 78 per cent for those aged 60–64). Meanwhile, young people are more likely to be adequately matched (education-employment adequacy), with 60.6 per cent for those aged 15–24 and 53.1 per cent for those aged between 25–34 years.

Overall, in 2014, 23.1 per cent of all employees were overeducated. This proportion decreased by nearly 10 percentage points between 2001 and 2014. More than 29 per cent of all employees were undereducated and this proportion increased by 4.7 points over the same period (2001–2014). In contrast, 47.4 per cent of employees are adequately employed (or “matched”) according to their level of education. This proportion increased by nearly 5 percentage points between 2001 and 2014.

Figure 6. Education/occupation mismatches, by age, Algeria, 2008-2014



Source: constructed based on Labour Force Survey 2008-2014 - ONS.

5.A. Determinants of educational Mismatch

In this section, we estimate a series of annual multinomial probit models (MNP)³ on polychotomous outcome variables indicating three situations of educational mismatch⁴ (overeducated, undereducated, and matched). We estimated models for each year (2003, 2005, 2007, 2010, 2016) and we estimated the pooled data to check the robustness of the results and to get the effect of time.

The advantage of MNP over MNL is that MNP does not assume IIA. For each choice j the evaluation functions are:

$$U_{ij} = \beta_j x_i + \gamma z_{ij} + \varepsilon_{ij}$$

The errors $\varepsilon_{i1}, \dots, \varepsilon_{iM}$ are distributed by a multivariate normal distribution in which each error has a mean and the zero and the errors are allowed to be correlated.

V_{ij} represent the deterministic part of U_{ij} for each choice j , so that $U_{ij} = V_{ij} + \varepsilon_{ij}$

The probability of choosing alternative 1 is the probability that U_{i1} is the highest evaluation. For three choices:

$$\begin{aligned} P(y_i = 1) &= P(U_{i1} > U_{i2} \text{ and } U_{i1} > U_{i3}) \\ &= P(V_{i1} + \varepsilon_{i1} > V_{i2} + \varepsilon_{i2} \text{ and } V_{i1} + \varepsilon_{i1} > V_{i3} + \varepsilon_{i3}) \\ &= P(\mu_{i2} < V_{i1} - V_{i2} \text{ and } \mu_{i3} < V_{i1} - V_{i3}) \\ \mu_{i2} &= \varepsilon_{i2} - \varepsilon_{i1} \text{ and } \mu_{i3} = \varepsilon_{i3} - \varepsilon_{i1} \end{aligned}$$

The dependent variable Y takes three modalities:

$Y=1$ if individual “ i ” is in an Overeducated situation (degree to which job level is lower than own schooling level).

$Y=2$ if individual “ i ” is in an Undereducated situation (degree to which job level is higher than own schooling level).

$Y=3$ if individual “ i ” is in a matched situation.

The variables Overeducated and Undereducated are measured in terms of the number of years normally required for the subject’s own level of education and for the level of education considered most appropriate for the current job. The reference category for both variables is having a matching job.

The explanatory variables we include in these models are age and age squared, age at the first job, experience in the job, sectors (five categories), and dummy variables marital status (never married vs. ever

³ MNP does not assume the independence of irrelevant alternatives (IIA) it is often assumed to be more accurate than multinomial logit (MNL).

⁴ Mismatches according to the formal educational requirements for the job.

married), professional training, household relationship (head of household vs. other situation), workplace (establishment vs. other places), job search (social networks vs. formal channels), stratum (urban vs. rural). We also include controls for the presence in the household of other individuals who work in the public sector, in the private sector, wage workers affiliated with social security, individuals in the household with higher education, and the number of uneducated individuals in the household.

1. Socio-demographic characteristics

We introduced the age and age squared as control variables. We find a concave relation to hold an overeducated job. On the other hand, the relationship is linear between age and undereducated. This means that the older the person is, the greater the chance of having an undereducated job, so the less chance of having a job that meets the qualifications. We find the same results for the years 2003, 2005, 2007, 2010 as well as using the pooled data.

The results of the estimates (2016) show that men compared to women are less likely to be in the Undereducated situation (the dummy overeducated is not significant). For the years 2003, 2005, 2007 and 2010, we find for men that the dummy undereducated is significant with a negative effect and the dummy over educated is significant with positive effect, it means that men compared to women have more chance of holding a job over educated and less likely to hold a job.

The dummy marital status is significant only for the year 2007 and for the model estimated on the pooled data. It emerges from the results of the estimates for the year 2007, that the dummy is significant (at 10 percent) with a negative effect of holding a job under educated for never married compared to ever married. In the pooled model, the dummy is significant with a negative effect for the never married to hold an over educated, job and a negative effect to hold an under educated job. This means that never-married people are more likely to hold a job that matches their qualifications compared to ever-married people.

Vocational training has a positive effect on occupying a job in line with the qualification. Indeed, the dummy training is significant with a negative effect for occupying an undereducated, job and a negative effect for occupying an over educated job for people who have followed vocational training compared to those who have not followed training. We find the same results for the years 2003, 2005, 2007, 2010 and for the pooled model.

People who live in urban areas are less likely compared to those who live in rural areas to hold an undereducated job reference to a job in line with the qualifications. This is due to employment opportunities in urban areas. We find the same results using the pooled data, except for the overeducated the variable

stratum is significant (10%) with a positive effect, it means people living in urban areas are more likely to be in overeducated jobs compared people living in rural areas.

2. Labor market characteristics

We have introduced the variable age at first work, it appears from the results (2016 estimate) that people who start working at an older age are more likely to hold an overeducated job and less under educated (compared to matched situation). We find the same results using the pooled data. For the simulations (2016) the variable is significant only for men. For the estimation of the pooled data the variable is significant for men and women with a negative effect of having an undereducated job and a positive effect of having an overeducated job for people that start working at an older age.

The work experience variable has a positive effect for the occupation of a job in line with the qualifications. We find the same results for the years 2003, 2005, 2007, 2010. For the estimates using 2016 data, it appears that the variable is significant only for men. On the other hand, the estimates on the pooled data show that the variable is significant for men and women with the same effect (positive effect of experience for the occupation of a job in line with qualifications).

People who have found a job through social networks are more likely to occupy a job that does not match the qualifications, either under educated or over educated, compared to people who have found a job through formal search methods who are more likely to occupy a job in line with their qualification. This result is true for both men and women.

For the sector of activity, it appears for the 2016 estimates that for the four sectors, the chance of occupying a job in line with the qualifications is lower compared to the service sector. It therefore seems that in the service sector, there is more chance of occupying a job in line with the qualifications.

The analysis by year shows some differences. For the years 2003 and 2005, the results show that people working in the agricultural sector are more likely to hold an undereducated job but more likely to hold an overeducated job. Also, the results show that people working in the industrial sector are less likely to hold an overeducated job, but more likely to hold an undereducated job. Also, people working in the commercial sector are more likely to find an undereducated job compared to people working in the service sector.

3. Household characteristic

We have introduced the characteristics of the household as control variables in the model. The more people there are in the household with a salaried job affiliated with social security, the less is the probability for the other members of the household to occupy an undereducated job. This result is significant only for women. We find a similar effect (negative effect of having an undereducated job) for the number of

individuals in the household with a higher level of education. On the other hand, the more people there are in the household working as employees in the private sector, the less is the chance for the other members of the household to occupy a job in line with their training.

For men, the more people in the household working as employees in the private sector, the less the chance for other household members to hold an overeducated job. On the other hand, the more people in the household with a higher level of education, the greater the chance of having an overeducated job. Finally, the more uneducated there are people in the household, the more likely it is for other household members to hold undereducated jobs.

For the pooled data estimation, we introduced the survey year variable as a control variable to measure changes in job type (overeducated, undereducated, matched) over time. The results show that the chance of holding an undereducated job decreases over time (the chance of holding a job of this type is greater in 2003). On the other hand, for the chance of occupying an overeducated job, the results show that the chance of occupying this type of job is greater in 2005 compared to 2003 (in reference to a matched job). For the years 2007, 2010 and 2016, we find that the chance of having an overeducated job has decreased compared to the year 2003.

The gender analysis shows some differences. Indeed, for men, the results show the chance of having an undereducated job (in reference to matched) decreased over the years compared to 2003. On the other hand, for women, it appears that the chance is less important in the years 2005 and 2007 and 2016 except for the years 2010 where the chance of occupying an undereducated job is greater compared to the reference year 2003. For the overeducated status, estimates show that the chance of occupying this status has decreased for men over time compared to the reference year 2003. On the other hand, for women, the chance of occupying this status (in reference to matched status) is greater in 2007 compared to the reference year 2003. This result shows that the dynamics of the labor market have a different effect for men and women.

Table 1. Determinants of Educational Mismatch - Multinomial Probit Model estimation (marginal effects), Algeria 2016, pooled 2003-2016

	2016						2003-2016					
	Total		Men		Women		Total		Men		Women	
	Over Educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education
Socio-demographic characteristics												
Age	0.0545*** (0.0144)	0.0220* (0.0134)	0.0704*** (0.0158)	0.0182 (0.0145)	-0.0303 (0.0391)	-0.0465 (0.0397)	0.0789*** (0.00545)	0.0106** (0.00513)	0.0895*** (0.00588)	0.0150*** (0.00559)	0.0163 (0.0161)	0.00591 (0.0144)
Age squared	-0.000762*** (0.000186)	0.000427*** (0.000164)	-0.000924*** (0.000203)	0.000445** (0.000177)	0.000177 (0.000516)	0.00135*** (0.000508)	-0.00125*** (7.04e-05)	0.000403*** (6.28e-05)	-0.00135*** (7.56e-05)	0.000323*** (6.79e-05)	-0.000606*** (0.000215)	0.000566*** (0.000183)
Gender (ref: women)												
Men	-0.0443 (0.0571)	-0.300*** (0.0615)	---	---	---	---	0.352*** (0.0233)	-0.313*** (0.0244)	---	---	---	---
Marital status (ref: Currently Married)												
Never Married	0.0299 (0.0569)	0.0528 (0.0596)	-0.0154 (0.0742)	-0.0264 (0.0766)	0.0415 (0.0930)	0.0896 (0.104)	-0.0191 (0.0233)	-0.0273 (0.0252)	-0.0658** (0.0279)	-0.0543* (0.0307)	-0.00213 (0.0462)	-0.00428 (0.0485)
Household Relationship (ref : other)												
Head of household	0.148** (0.0656)	0.341*** (0.0645)	-0.00348 (0.0768)	0.245*** (0.0757)	0.638*** (0.214)	0.246 (0.0885)	-0.0334 (0.0259)	0.261*** (0.0262)	-0.137*** (0.0298)	0.201*** (0.0309)	0.176** (0.0885)	0.395*** (0.0735)
Professional training (ref: No)												
Yes	-0.0228 (0.0442)	-0.0119 (0.0455)	0.0123 (0.0501)	-0.367*** (0.0538)	-0.186* (0.0974)	1.120*** (0.0969)	-0.159*** (0.0190)	-0.341*** (0.0203)	-0.110*** (0.0213)	-0.447*** (0.0233)	-0.419*** (0.0438)	0.102** (0.0441)
Stratum (ref: rural)												
Urban	0.0375 (0.0417)	-0.337*** (0.0407)	0.0653 (0.0462)	-0.299*** (0.0443)	-0.0909 (0.101)	-0.454*** (0.110)	0.0278* (0.0156)	-0.120*** (0.0155)	0.0244 (0.0168)	-0.111*** (0.0167)	0.0182 (0.0469)	-0.0926** (0.0470)
Labor market characteristics												
Age at the first job	0.0143*** (0.00389)	-0.0269*** (0.00361)	0.0135*** (0.00436)	-0.0316*** (0.00406)	0.0146 (0.0114)	-0.000467 (0.0109)	0.0250*** (0.00169)	-0.0276*** (0.00158)	0.0263*** (0.00191)	-0.0376*** (0.00183)	0.0187*** (0.00480)	-0.000686 (0.00406)
Experience	-0.0116*** (0.00365)	0.000470 (0.00297)	-0.00992** (0.00393)	0.00430 (0.00317)	-0.0106 (0.0121)	-0.00713 (0.0111)	-0.0193*** (0.00134)	-0.00588*** (0.00112)	-0.0191*** (0.00142)	-0.00383*** (0.00119)	-0.0170*** (0.00468)	-0.00788** (0.00386)
Workplace (ref: other)												
Establishment	0.0403 (0.0621)	-0.174*** (0.0591)	0.0413 (0.0644)	-0.106* (0.0611)	-0.773*** (0.286)	-1.243*** (0.305)	-0.1000*** (0.0231)	-0.302*** (0.0226)	-0.0743*** (0.0252)	-0.154*** (0.0248)	-0.204*** (0.0734)	-0.942*** (0.0721)
Job search (ref: formal channels)												
Social networks	0.106** (0.0416)	0.0822** (0.0404)	0.0879* (0.0449)	0.0381 (0.0431)	0.250** (0.116)	0.288** (0.124)	-0.0473*** (0.0161)	0.165*** (0.0160)	-0.0516*** (0.0173)	0.154*** (0.0172)	0.0384 (0.0453)	0.238*** (0.0455)
Sectors (ref: services)												
Agriculture	0.313*** (0.0905)	0.471*** (0.0836)	0.329*** (0.0941)	0.453*** (0.0866)	-0.114 (0.446)	0.344 (0.451)	0.600*** (0.0311)	-0.197*** (0.0317)	0.670*** (0.0330)	-0.145*** (0.0339)	0.0681 (0.111)	-0.335*** (0.106)
Industry	0.213*** (0.0636)	0.0451 (0.0672)	0.186*** (0.0686)	0.0505 (0.0721)	0.115 (0.183)	0.0119 (0.204)	0.00498 (0.0242)	0.170*** (0.0241)	-0.0690** (0.0275)	0.0471* (0.0275)	0.133** (0.0636)	0.340*** (0.0646)
Construction	-0.0589 (0.0666)	0.248*** (0.0634)	-0.0612 (0.0696)	0.262*** (0.0659)	-0.0694 (0.284)	-0.416 (0.345)	-0.172*** (0.0279)	0.261*** (0.0268)	-0.145*** (0.0292)	0.326*** (0.0280)	-0.144 (0.143)	-0.125 (0.151)
Trade	0.375*** (0.0659)	-0.00777 (0.0740)	0.276*** (0.0720)	-0.0493 (0.0792)	1.021*** (0.180)	0.248 (0.232)	0.124*** (0.0252)	0.172*** (0.0264)	0.0872*** (0.0264)	0.163*** (0.0274)	0.681*** (0.0930)	0.0308 (0.114)
Household characteristic												
Number of employees affiliated to social security in the household-1	0.0464 (0.0449)	-0.00720 (0.0460)	0.0760 (0.0519)	0.0607 (0.0520)	-0.0844 (0.0944)	-0.270** (0.109)	0.0565*** (0.0144)	-0.0797*** (0.0158)	0.0862*** (0.0162)	-0.0612*** (0.0180)	-0.0124 (0.0331)	-0.139*** (0.0349)
Number of employees in the public sector in household-1	-0.0212 (0.0534)	0.151*** (0.0556)	-0.0592 (0.0634)	0.0898 (0.0646)	0.149 (0.106)	0.366*** (0.123)	-0.0383** (0.0181)	0.0367* (0.0200)	-0.0807*** (0.0207)	0.0157 (0.0231)	0.0334 (0.0393)	0.122*** (0.0423)
Number of employees in the Private sector in the household-1	-0.0467* (0.0276)	0.0834*** (0.0266)	-0.0985*** (0.0313)	0.0380 (0.0293)	0.130** (0.0626)	0.254*** (0.0685)	-0.0224*** (0.00822)	0.0295*** (0.00828)	-0.0348*** (0.00904)	0.00134 (0.00922)	0.00433 (0.0209)	0.0821*** (0.0204)
Number of individuals with higher education level in household-1	0.160*** (0.0359)	-0.329*** (0.0430)	0.232*** (0.0445)	-0.290*** (0.0529)	0.000409 (0.0635)	-0.309*** (0.0800)	0.122*** (0.0110)	-0.241*** (0.0133)	0.146*** (0.0129)	-0.208*** (0.0154)	0.0599*** (0.0221)	-0.278*** (0.0273)
Number of uneducated individuals in household-1	0.0222 (0.0735)	0.212*** (0.0676)	-0.0230 (0.0825)	0.188** (0.0737)	0.248 (0.174)	0.256 (0.187)	-0.0316*** (0.00744)	0.0838*** (0.00729)	-0.0454*** (0.00802)	0.0716*** (0.00786)	0.00853 (0.0215)	0.139*** (0.0209)
Years (ref:2003)												
2005	---	---	---	---	---	---	0.0924*** (0.0252)	-0.0889*** (0.0256)	-1.955*** (0.121)	-0.481*** (0.122)	-0.617** (0.296)	-0.803*** (0.284)
2007	---	---	---	---	---	---	-0.0364 (0.0281)	-0.156*** (0.0279)	0.0722*** (0.0284)	-0.0780*** (0.0284)	0.156*** (0.0606)	-0.152*** (0.0613)
2010	---	---	---	---	---	---	-0.252*** (0.0284)	-0.0733*** (0.0308)	-0.00332 (0.0311)	-0.196*** (0.0311)	-0.239*** (0.0718)	0.141** (0.0718)
2016	---	---	---	---	---	---	-0.451*** (0.0289)	-0.271*** (0.0289)	-0.312*** (0.0313)	-0.0419 (0.0308)	0.0386 (0.0708)	-0.113 (0.0757)
Constant	-2.181*** (0.288)	-1.306*** (0.284)	-2.464*** (0.319)	-1.302*** (0.310)	0.347 (0.748)	-0.129 (0.793)	-2.112*** (0.111)	-0.283** (0.111)	-0.542*** (0.0325)	-0.271*** (0.0323)	-0.118* (0.0667)	-0.115* (0.0692)
Observations	11907	11907	9547	9547	2360	2360	72851	72851	61067	61067	11784	11784

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.B. Determinants of Skill Mismatch

In this point we analyze the following statement:

We use in our current work the knowledge acquired during the training. The question is Do you use the knowledge acquired during the training? With four response options:

- 1) All the time.
- 2) Frequently.
- 3) Rarely/occasionally.
- 4) Never.

We estimated a Probit model using the same variable control as the model above (Determinants of skill Mismatch). We added the educational attainment. We estimate two specifications of the model for both men and women. We constructed a dummy variable by grouping modalities 1,2 and 3 (all the time, frequently and rarely/occasionally) into a single modality and comparing with the option never. In the second model, we are grouping the modalities 1 and 2 (all the time, frequently) in the same modalities and we are grouping the modalities 3 and 4 (rarely/occasionally, never) in the same modality.

1. Socio-demographic characteristics

The results show a concave relationship between age and the use of knowledge acquired in the current job. The variable is significant only for men. We find the same results for both specifications, a concave relation of the age variable.

For the gender variable, the results show that men, compared to women, use less of the knowledge acquired during training in their current job. This denotes the difference in the type of jobs between men and women.

The marital status variable is significant only for the second specification of the model and only for women with a negative effect for never married women compared to ever married women. this means that never married women use less of the knowledge acquired from their training compared to ever married women.

Vocational training is significant with a positive effect on the use of knowledge acquired from training in the performance of work. This result is true for both men and women in the first specification of the model. For the second specification, the variable is only significant for men with a positive effect for those who have followed vocational training.

For the first specification of the stress model, the household relationship variable is significant only for men with a positive effect for the use of knowledge for household heads. On the other hand, for the second specification of the model, the variable is significant for men and women with a positive effect for male household heads and a negative effect for female household heads.

2. Labor market characteristics

The age at first job variable is significant in both models and only for men. The variable is significant with a positive effect on the use of knowledge acquired in training. This means that the older a person begins their working life, the more they use the knowledge acquired during on-the-job training.

The more experience a person has, the more he tends to use the knowledge acquired during training on the current job, which seems consistent. The work experience variable is significant for both men and women with the same effect (positive for the use of knowledge acquired during training) and in both models.

People working in establishments are more likely to use the knowledge acquired during training than this evening for both men and women. Compared to people who exercise in less structured places (in the street, etc.). Work in an establishment is often a more decent job compared to jobs in the street (more informal work).

We introduced a dummy related to job search (formal channel vs. informal channel) used to find the current job. The results show that people who find a job via informal methods use less the knowledge acquired during training in the exercise of their work compared to those who find a job via formal methods. The results are the same for both model specifications.

The dummy sectors of activity are significant for the sectors, industry (positive effect), construction (positive effect) and trade (negative effect) for the use of the knowledge acquired from the training. People working in the industry and construction sectors are more likely to use the knowledge acquired from training than those working in the service sector. On the other hand, those working in the trade sector are less likely to use the knowledge acquired from their training compared to those working in the service sector.

3. Household characteristic

We introduced into the model several variables relating to the characteristics of the household. The results show that the variable number of individuals in the household without qualifications is significant (only for men for the first model and for both sexes for the second model) with a significant effect for the use of knowledge acquired during training in their current job for other household members. The variable number of people in the household working in the public sector has a positive effect for women for the use of knowledge acquired during training (the variable is significant only for women and in both models).

Finally, having in the household are people who exercise as an employee with an affiliation to a social security fund has a negative effect for the uses of the knowledge acquired from training in the exercise of the current job, in particular for the case of women.

Table 2. Determinants of Skill Mismatches - Probit Model (marginal effects), Algeria- 2010

	Yes vs No (1/3 vs. 4)			Yes vs No (1/2 vs. 3/4)		
	Total	Men	Women	Total	Men	Women
Socio-demographic characteristics						
Age	-0.0261*** (0.00486)	-0.0319*** (0.00595)	-0.0115 (0.00955)	-0.0314*** (0.00594)	-0.0359*** (0.00700)	-0.0175 (0.0132)
Age squared	0.000274*** (6.34e-05)	0.000330*** (7.64e-05)	0.000156 (0.000132)	0.000314*** (7.64e-05)	0.000352*** (8.81e-05)	0.000228 (0.000180)
Gender (ref: women)						
Men	-0.0684*** (0.0137)	----	----	-0.0808*** (0.0174)	----	----
Marital status (ref: Currently Married)						
Never Married	-0.0181 (0.0178)	-0.00354 (0.0254)	-0.00793 (0.0211)	-0.0515** (0.0215)	-0.0195 (0.0303)	-0.0509* (0.0291)
Educational Attainment (ref: No certificate)						
Primary	-0.197 (0.170)	-0.174 (0.175)	-0.902 (1.651)	-0.393** (0.156)	-0.379** (0.156)	-0.786 (0.814)
Less than secondary	-0.171 (0.143)	-0.176 (0.148)	-0.932 (9.992)	-0.342** (0.163)	-0.347** (0.165)	-0.878 (4.502)
Secondary	-0.102 (0.134)	-0.108 (0.148)	-0.884 (26.56)	-0.279* (0.166)	-0.284* (0.171)	-0.946 (8.669)
University	0.0608 (0.118)	0.0558 (0.133)	-0.443 (30.94)	-0.115 (0.166)	-0.0850 (0.180)	-0.766 (20.01)
Professional training (ref: No)						
Yes	0.108*** (0.0417)	0.0992* (0.0543)	0.104* (0.0555)	0.130*** (0.0414)	0.165*** (0.0548)	0.0684 (0.0569)
Household Relationship (ref: other)						
Head of household	0.0397* (0.0204)	0.0829*** (0.0280)	-0.123 (0.0817)	0.0189 (0.0258)	0.0810** (0.0336)	-0.211** (0.0923)
Stratum (ref: rural)						
Urban	0.0180 (0.0147)	0.0314* (0.0181)	-0.0144 (0.0232)	0.0310* (0.0180)	0.0462** (0.0211)	0.000119 (0.0340)
Labor market characteristics						
Age at the first job	0.00570*** (0.00141)	0.00806*** (0.00173)	-0.00177 (0.00296)	0.00646*** (0.00179)	0.00960*** (0.00209)	-0.00558 (0.00423)
Experience	0.0129*** (0.00116)	0.0142*** (0.00138)	0.00617** (0.00295)	0.0178*** (0.00143)	0.0180*** (0.00161)	0.0113*** (0.00403)
Workplace (ref: other)						
Establishment	0.254*** (0.0327)	0.264*** (0.0348)	0.163 (0.103)	0.293*** (0.0327)	0.293*** (0.0342)	0.212* (0.117)
Job search (ref: formal channels)						
Social networks	-0.0751*** (0.0141)	-0.0967*** (0.0173)	-0.0216 (0.0224)	-0.0710*** (0.0168)	-0.105*** (0.0200)	0.0249 (0.0292)
Sectors (ref: services)						
Agriculture	-0.0416 (0.0451)	-0.0560 (0.0534)	0.0708 (0.0525)	-0.0109 (0.0543)	-0.0222 (0.0617)	0.100 (0.104)
Industry	0.0494*** (0.0148)	0.0783*** (0.0179)	-0.0283 (0.0315)	0.0704*** (0.0190)	0.0971*** (0.0221)	1.77e-05 (0.0405)
Construction	0.0450** (0.0205)	0.0648*** (0.0240)	0.0166 (0.0511)	0.0235 (0.0288)	0.0438 (0.0319)	0.0483 (0.0735)
Trade	-0.0523** (0.0236)	-0.0104 (0.0263)	-0.213*** (0.0679)	-0.0693** (0.0285)	-0.00180 (0.0314)	-0.353*** (0.0707)
Household characteristic						
Number of employees affiliated to social security in the household-1	-0.00627 (0.0119)	0.00823 (0.0159)	-0.0261* (0.0156)	-0.0257* (0.0147)	-0.0129 (0.0190)	-0.0430* (0.0221)
Number of employees in the public sector in household-1	0.00704 (0.0138)	-0.0111 (0.0186)	0.0322* (0.0184)	0.00757 (0.0170)	-0.0176 (0.0220)	0.0443* (0.0253)
Number of employees in the Private sector in the household-1	0.00235 (0.00844)	-0.00557 (0.0110)	0.0143 (0.0121)	0.0175 (0.0107)	0.0114 (0.0134)	0.0265 (0.0172)
Number of individuals with higher education level in household-1	0.0127** (0.00622)	0.0142* (0.00822)	0.0104 (0.00842)	0.0231*** (0.00736)	0.0224** (0.00938)	0.0256** (0.0115)
Number of uneducated individuals in household-1	-0.00196 (0.00649)	0.00386 (0.00847)	-0.00862 (0.00925)	-0.00788 (0.00803)	0.00286 (0.0102)	-0.0183 (0.0130)
Observations	5041	3591	1450	5041	3591	1450

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5.C. Effects of mismatch on job satisfaction

We examined the effects on job satisfaction by using a probit model to estimate the effects of mismatch on job satisfaction. The dependent variable Y takes two modalities: $Y=1$ if individual “ i ” is satisfied with job and $Y=0$ otherwise. We use as control variables the same variables of the first model on skill mismatch. We include also the education attainment (five categories) and the dummy variable of skill-mismatch (overeducated, undereducated, matched) as control variables. We used data from labor force survey conducted on 2010 (the only survey where the question on job satisfaction was asked).

The Probit model can be represented using the following formula:

$$\Pr(Y = 1|X) = \Phi(Z) = \Phi(b_0 + b_1X_1 + b_2X_2 + \dots + b_nX_n)$$

Where, Y is the dependent variable and represents the probability that the event will occur (hence, $Y=1$) given the variables X . Φ is the cumulative standard normal distribution function. Z is the linear combination of independent variable (X) with coefficients $(b_0, b_1, b_2, \dots, b_n)$. The relationship between a specific factor and the outcome of the probability is interpreted by the means of the marginal effect which accounts for the partial change in the probability. The marginal effects provide insights into how the explanatory variables change the predicted probability of project success.

1. Socio-demographic characteristics

The results of the estimates show a convex effect of the variable age. This means that the probability of job satisfaction decreases with age up to a certain age and then increases with age. The variable is only significant for women. The sex variable is not significant. On the other hand, marital status is significant with a negative effect for single women compared to ever-married women to be satisfied with their job.

We have introduced as control variables the level of education as well as the variable followed by vocational training. It appears from the results that the two variables are not significant.

2. Labor market characteristics

The workplace variable is significant only for men with a positive effect of being satisfied people who work in an establishment (working in an establishment reflects organized, formal work) compared to those who work in other places (ambulant, sidewalk, market, agricultural exploitation, home).

We introduced the dummy job search (social networks vs. formal channels) as variable control. The results show that the variable is significant only for men with a negative effect on job satisfaction for people who found a job via informal methods (social networks). Lassassi, Sami (2022) finds that informal search methods (social networks) are popular for finding a job in Algeria, but they do not guarantee a decent, secure and stable job.

Table 3. Effects of mismatch on job satisfaction - probit model (marginal effects), Algeria, 2010

	Total	Men	Women
Socio-demographic characteristics			
Age	-0.0137* (0.00730)	-0.00694 (0.00850)	-0.0418** (0.0190)
Age squared	0.000213** (9.72e-05)	0.000127 (0.000111)	0.000584** (0.000265)
Gender (ref: women)			
Men	0.0337 (0.0225)	----	----
Marital status (ref: Currently Married)			
Never Married	-0.0920*** (0.0253)	-0.0562 (0.0361)	-0.106*** (0.0371)
Household Relationship (ref : other)			
Head of household	-0.0272 (0.0327)	0.00213 (0.0415)	0.0105 (0.105)
Stratum (ref: rural)			
Urban	0.0497** (0.0225)	0.0621** (0.0267)	0.0263 (0.0418)
Educational Attainment (ref: No certificate)			
Primary	-0.313 (0.240)	-0.285 (0.242)	-0.832 (0.955)
Less than secondary	-0.171 (0.217)	-0.178 (0.220)	-0.906 (7.457)
Secondary	-0.0559 (0.205)	-0.0286 (0.213)	-0.919 (17.44)
University	0.0938 (0.193)	0.117 (0.199)	-0.639 (29.53)
Professional training (ref: No)			
Yes	0.0929 (0.0569)	0.129 (0.0796)	0.0212 (0.0730)
Job characteristic			
Education-job match (ref: Matched situation)			
Under-educated	-0.193*** (0.0234)	-0.218*** (0.0319)	-0.181*** (0.0451)
Over-educated	0.113*** (0.0302)	0.102** (0.0444)	0.0923** (0.0450)
Age at the first job	0.00289 (0.00211)	0.00340 (0.00246)	0.00425 (0.00498)
Experience	0.0133*** (0.00182)	0.0120*** (0.00204)	0.0183*** (0.00571)
Workplace (ref: other)			
Establishment	0.261*** (0.0382)	0.300*** (0.0407)	-0.0278 (0.0900)
Job search (ref: formal channels)			
Social networks	-0.0825*** (0.0193)	-0.113*** (0.0230)	-0.00552 (0.0324)
Sectors (ref: services)			
Agriculture	-0.0572 (0.0664)	-0.00141 (0.0679)	-0.240 (0.228)
Industry	-0.00160 (0.0243)	0.0391 (0.0276)	-0.137** (0.0631)
Construction	-0.133*** (0.0355)	-0.0851** (0.0379)	-0.308*** (0.118)
Trade	-0.189*** (0.0333)	-0.189*** (0.0381)	-0.0999 (0.0662)
Household characteristic			
Number of employees affiliated to social security in the household-1	0.0169 (0.0169)	0.0282 (0.0224)	-0.00192 (0.0231)
Number of employees in the public sector in household-1	-0.00490 (0.0201)	-0.0294 (0.0269)	0.0374 (0.0282)
Number of employees in the Private sector in the household-1	-0.0236** (0.0117)	-0.0205 (0.0151)	-0.0178 (0.0173)
Number of individuals with higher education level in household-1	0.00595 (0.00882)	0.0190 (0.0116)	-0.0190 (0.0132)
Number of uneducated individuals in household-1	-0.00535 (0.00934)	-0.0143 (0.0121)	0.0160 (0.0147)
Observations	3397	2424	973

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

For the sector of activity, it emerges that only the dummy construction and commerce is significant with negative effects for job satisfaction compared to people working in the service sector. We find the same results for men. For women, there is only the dummy of the construction sector, which is significant with a negative effect for job satisfaction compared to women working in the service sector.

The dummy stratum is significant only for men with a positive effect for job satisfaction for people residing in urban areas compared to those living in rural areas. This provides information on the types and qualities of employment in urban areas.

3. Education-mismatch

For the skill mismatch variable, as expected the results shows a positive relationship between over-educated dummy and job satisfaction for both men and women, with a greater effect for men. Also, as expected, we find for both men and women a negative relationship between dummy variable undereducation and job satisfaction.

Allen, J and van der Velden (2001) find that overeducation has a negative effect on the job occupant's satisfaction, but the effect is not significant. Also, that undereducation has no significant effect on job satisfaction.

4. Household characteristic

We have introduced several dummy variables relating to the characteristics of the household. The only significant dummy is the number of employees in the household working in the private sector with a negative effect for job satisfaction.

5.C. Effects of educational mismatch on job search

In this section we examined the effects of mismatches on the likelihood that respondents are looking for alternative employment. We try to answer the following question: Are workers who experience a poor match between their own skills and those required their current job motivated by this to quit their job in favor of other work? We estimated probit model using five labor force survey (2003, 2005, 2007, 2010, 2016). We use as control variables the same variable used in the second model (job satisfaction). We estimated models for each year (2003, 2005, 2007, 2010, 2016) and we estimated on the pooled data to check the robustness of the results and to get the effect of time.

1. Socio-demographic characteristics

The results show a concave relationship between the age variable and job search. This means that people are looking for a new job at the beginning of their working life, then at a certain age they are looking for more stability and therefore less they are looking for a new job. We find the same result for the other years

(2005, 2007 and 2010). The result is significant only for men. We find also the same result concave relationship between age and looking for another job using pooled data (2003-2016).

The dummy variable sex is significant only for the year 2007 and on the pooled data (2003-2016) with a negative effect for men looking for another job compared to women. This means that women are more likely to want to change their jobs, perhaps this is due to the types of jobs they hold (less in line with their qualifications, low wages....).

Single people are more likely to look for another job compared to ever-married people. For estimates based on LFS 2016 data, the variable is significant only for men. For the other years (2003, 2005, 2007, 2010) marital status is significant for both men and women with a positive effect on seeking other employment for single people.

Heads of household are less likely to want to change jobs compared to other members of the household. They do not want to take the risk of changing jobs given their family responsibilities. For the year 2016, the marital status dummy is only valid for men. On the other hand, for the estimates on the pooled data (2003-2016), the variable is significant for both men and women, but with different effects. Indeed, for men the heads of household are less likely to look for another job, but for women it is the opposite, women heads of household are more likely to look for another job.

The results from the LFS data show that the stratum variable is significant only for women with a negative effect of looking for another job compared to men. Estimates of the pooled data show an opposite effect of the stratum effect for men and women. Indeed, for men the effect is positive compared to women. In other words, men living in urban areas are more likely to seek other employment compared to those living in rural areas. For women, the results show that women in urban areas are less likely to look for another job compared to those living in rural areas.

2. Human capital

Overall, the results show a negative effect on the level of education for the decision to change jobs. This means that the most educated people are less likely to change jobs compared to people with a low level of education. The higher the level of education, the lower the probability of seeking another job. This means that educated people have more attractive jobs, they may have motivated to look for other jobs.

Estimates based on 2016 LFS data show that variable professional training is not significant. On the other hand, for the years 2015, 2007, 2010 and on the pooled data, the variable is significant with a positive effect for looking for another job for people who have followed vocational training.

3. Labor market characteristics

We introduced age at first job and work experience as control variables. The results show that the older a person begins his working life, the less likely he is to seek another job, whether for men or women. Also, for the experienced person, the more experience a person has, the less they tend to look for another job, whether for men or women.

People working in an establishment are less likely to want to change their job compared to people working on the street with less job protection. This result is true for both men and women. We find the same results for all years (2003,2005,2007,2010 pooled date (2003-2016)).

We introduced the variable job search methods (dummy social networks vs. formal channels) as control variables. It appears in the year LFS 2016, that the variable is significant for only women with a negative effect to seek another job for people who have found their job via informal methods (social networks). For the other years as well as for the model of the pooled data, the variable is significant for both men and women with a positive effect for men and a negative effect for women. this means that men who have found a job via social networks are more likely to seek another job compared to women who have found employment via the same informal methods who are more likely to seek another job.

For the sector of activity variable, the results (LFS 2016) show that men working in the farming, construction and trade sectors are more likely to want to change jobs compared to those working in the agricultural sector. Services. On the other hand, those who work in the industrial sector are less likely to look for another job compared to those who work in the service sector. For women, it appears that those who work in the agricultural sectors are more likely to want to change jobs, unlike those who work in the construction and trade sectors who are less likely to want to change jobs. to those working in the service sector. Pooled data estimates show for men that only those working in the service sector are more likely to change jobs compared to other sectors. On the other hand, for women the results show that those who work in the agriculture and industry sectors are less likely to change jobs and that those who work in the construction and trade sectors are more likely to want to change jobs compared to those who work in the service sector.

4. Education-mismatch

For the education-mismatch variable, the results show that people in an uneducated situation are more likely to plan to change jobs for both men and women compared to those in a Matched situation. We find the same results on pooled data.

Table 4. Effects of mismatch on job search - Probit (marginal effects) -2016 - polled data (2003-2016)

	2016			2003-2016		
	Total	Men	Women	Total	Men	Women
Socio-demographic characteristics						
Age	0.00723** (0.00328)	0.0106*** (0.00367)	0.000886 (0.00812)	0.0111*** (0.00142)	0.0141*** (0.00158)	-0.00519* (0.00312)
Age squared	-0.000176*** (4.19e-05)	-0.000212*** (4.65e-05)	-9.57e-05 (0.000112)	-0.000203*** (1.82e-05)	-0.000238*** (2.01e-05)	2.36e-05 (4.23e-05)
Gender (ref: women)						
Men	-0.00602 (0.0154)	---	---	-0.0197*** (0.00691)	---	---
Marital status (ref: Currently Married)						
Never Married	0.0447*** (0.0143)	0.0469** (0.0186)	0.0156 (0.0162)	0.0540*** (0.00650)	0.0377*** (0.00796)	0.0511*** (0.00866)
Household Relationship (ref : other)						
Head of household	-0.0277* (0.0160)	-0.0571*** (0.0191)	0.0574 (0.0547)	0.00447 (0.00712)	-0.0279*** (0.00836)	0.0382** (0.0185)
Educational Attainment (ref: No certificate)						
Primary	0.00362 (0.0220)	-0.00377 (0.0242)	-0.0194 (0.0520)	-0.0431*** (0.00745)	-0.0415*** (0.00827)	-0.0226 (0.0182)
Less than secondary	-0.0598** (0.0284)	-0.0636* (0.0352)	-0.0252 (0.0479)	-0.0800*** (0.00926)	-0.0649*** (0.0108)	-0.0644*** (0.0152)
Secondary	-0.177*** (0.0248)	-0.207*** (0.0310)	-0.0642 (0.0462)	-0.142*** (0.00912)	-0.128*** (0.0110)	-0.0970*** (0.0180)
University	-0.190*** (0.0258)	-0.225*** (0.0290)	-0.103* (0.0583)	-0.144*** (0.00939)	-0.136*** (0.0115)	-0.131*** (0.0209)
Professional training (ref: No)						
Yes	-0.0105 (0.0119)	-0.0115 (0.0137)	-0.00393 (0.0200)	0.0330*** (0.00551)	0.0320*** (0.00630)	0.0244** (0.00948)
Job characteristic						
Skill-mismatch (ref: Matched situation)						
Over-educated	0.115*** (0.0160)	0.130*** (0.0223)	0.0856*** (0.0200)	0.0511*** (0.00584)	0.0410*** (0.00692)	0.0708*** (0.0101)
Under-education	-0.0432** (0.0197)	-0.0361 (0.0265)	-0.0408* (0.0220)	-0.00432 (0.00671)	0.00851 (0.00782)	-0.0318*** (0.0109)
Age at the first job	-0.00513*** (0.000964)	-0.00547*** (0.00114)	-0.00116 (0.00201)	-0.00382*** (0.000440)	-0.00525*** (0.000524)	0.000477 (0.000883)
Experience	-0.00919*** (0.000832)	-0.00860*** (0.000913)	-0.0136*** (0.00239)	-0.0104*** (0.000343)	-0.0101*** (0.000375)	-0.0116*** (0.000962)
Workplace (ref: other)						
Establishment	-0.178*** (0.0145)	-0.185*** (0.0150)	-0.193** (0.0760)	-0.233*** (0.00710)	-0.240*** (0.00733)	-0.175*** (0.0301)
Job search (ref: formal channels)						
Social networks	-0.0201** (0.00971)	-0.0146 (0.0108)	-0.0369*** (0.0181)	0.0184*** (0.00415)	0.0246*** (0.00462)	-0.0153* (0.00784)
Sectors (ref: services)						
Agriculture	0.131*** (0.0224)	0.152*** (0.0238)	-0.123*** (0.0153)	0.111*** (0.0100)	0.128*** (0.0107)	-0.0540*** (0.0208)
Industry	-0.0393** (0.0162)	-0.0395** (0.0185)	-0.00672 (0.0309)	0.0127* (0.00689)	0.0232*** (0.00782)	-0.0313*** (0.0108)
Construction	0.154*** (0.0161)	0.158*** (0.0170)	0.184** (0.0726)	0.162*** (0.00776)	0.170*** (0.00817)	0.121*** (0.0320)
Trade	0.184*** (0.0182)	0.199*** (0.0197)	0.0837** (0.0389)	0.198*** (0.00849)	0.215*** (0.00900)	0.0741*** (0.0213)
Household characteristic						
Number of employees affiliated to social security in the household-1	-0.0529*** (0.0108)	-0.0598*** (0.0127)	-0.0315** (0.0160)	-0.0323*** (0.00397)	-0.0383*** (0.00468)	-0.0124** (0.00583)
Number of employees in the public sector in household-1	0.0304** (0.0131)	0.0331** (0.0157)	0.0200 (0.0181)	0.0198*** (0.00500)	0.0292*** (0.00599)	-0.000964 (0.00709)
Number of employees in the Private sector in the household-1	0.00280 (0.00620)	-0.00371 (0.00715)	0.0136 (0.00987)	-0.000263 (0.00236)	-0.00279 (0.00265)	0.00482 (0.00445)
Number of individuals with higher education level in household-1	0.0239** (0.00950)	0.0264** (0.0121)	0.0130 (0.0111)	-0.00246 (0.00316)	-0.00700* (0.00387)	0.00212 (0.00408)
Number of uneducated individuals in household-1	-0.0295* (0.0156)	-0.0194 (0.0179)	-0.0169 (0.0271)	0.00143 (0.00194)	-0.000445 (0.00218)	0.000927 (0.00368)
Stratum (ref: rural)						
Urban	-0.00383 (0.00983)	0.0159 (0.0112)	-0.0751*** (0.0191)	0.00784* (0.00409)	0.0119*** (0.00457)	-0.0142* (0.00846)
Years (ref:2003)						
2005	---	---	---	0.0149* (0.00777)	0.0152* (0.00883)	-0.00222 (0.0133)
2007	---	---	---	0.0716*** (0.00813)	0.0703*** (0.00915)	0.0670*** (0.0155)
2010	---	---	---	0.146*** (0.00843)	0.156*** (0.00939)	0.0698*** (0.0161)
2016	---	---	---	0.0736*** (0.00843)	0.0723*** (0.00959)	0.0420*** (0.0143)
Observations	11907	9547	2360	59410	49694	9716

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

5. Household characteristic

We have introduced several variables relating to the characteristics of the household. The variable number of individuals in the household exercising as an employee with an affiliation to social security has a negative effect for both men and women seeking another job. On the other hand, for men, the varied number of individuals in the household exercising as an employee in the public sector, number of individuals in the household with a higher level of education are significant (only for men) with a positive effect to look for another job.

In the model estimated on the pooled data, it appears that individuals are more likely to change jobs over time compared to the reference year 2003. This result is true for both men and women. This may be due to the casualization of jobs over time.

Conclusions

We analyze on the one hand the determinants of educational mismatch and skill mismatch and on the other hand the effect of educational mismatch on two outcome variables, first on job satisfaction and second on-the-job search for both men and women in the case of Algeria. We use several labor forces surveys 2003, 2005, 2007, 2010 and 2016. We construct also a pooled data (2003-2016) to analyze the effect of time on educational mismatch. We estimate the choice models described: multinomial probit and binary probit and we use as control variables: 1) socio-demographic characteristics, 2) human capital, 3) labor market characteristics and 4) household characteristic. For job satisfaction models and on the job search we include also educational mismatch (dummy overeducated, dummy undereducated, dummy matched as reference modality).

First result the different estimates show some robustness in the results between the different years used in the estimates. The salient findings are job satisfaction and, on the job, search are strongly influenced by educational mismatch and some job characteristics for both men and women.

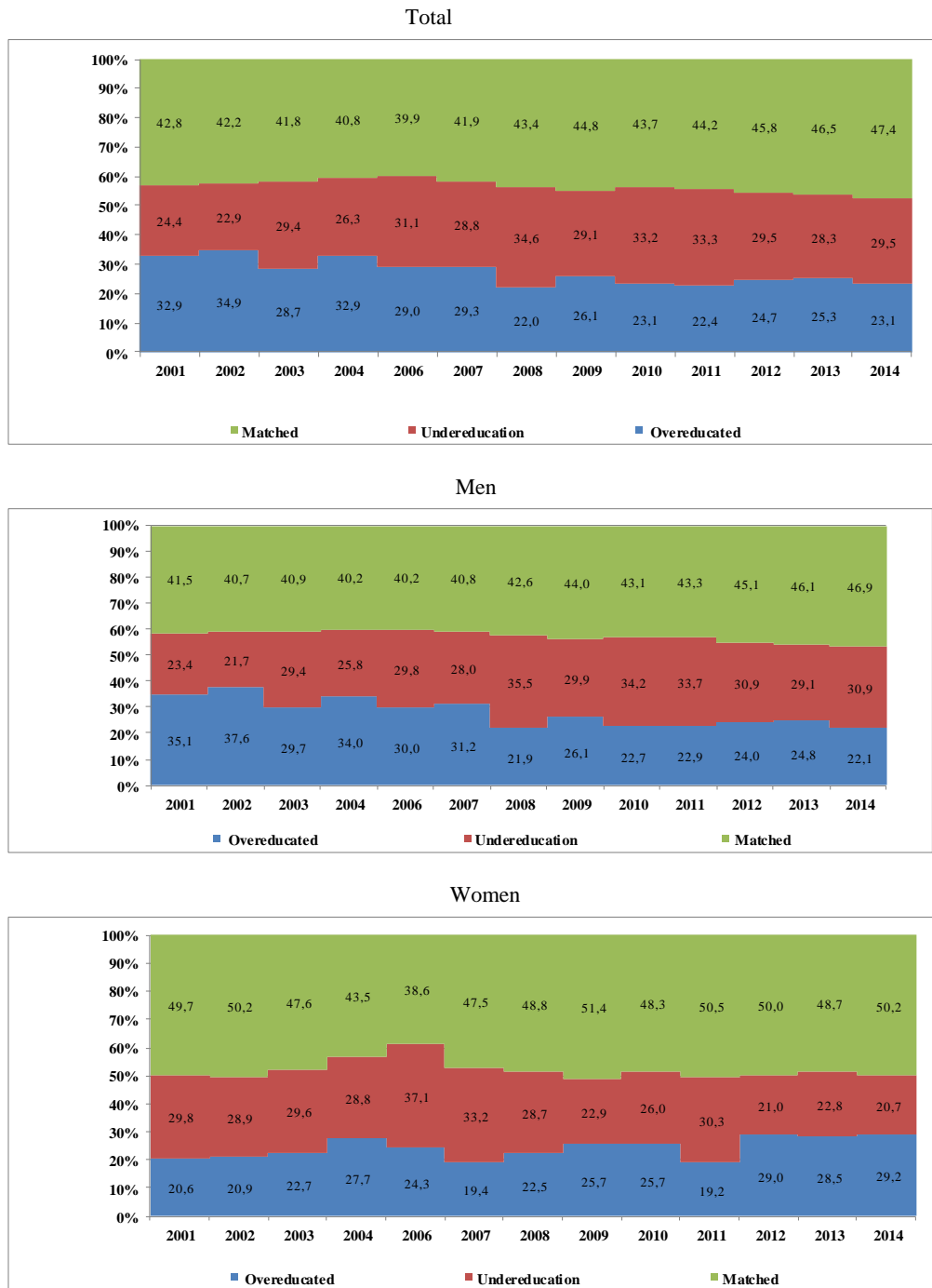
The results on the relationship between educational mismatch, job satisfaction and on-the-job search provide insights on the adjustments that take place in the labor market. The findings have important policy implications on how to address the persistent educational mismatches among man, women and developing policies to improve work and life satisfaction in Algeria.

References

- Allen, J., and R. van der Velden (2001), “Educational Mismatches versus Skill Mismatches: Effects on Wages, Job Satisfaction, and On-the-Job Search”, *Oxford Economic Papers*, 53 (3): 434-452.
- Amador, L. B., A. L., Nicola, and L. E. Vila (2012), “The consequences on job satisfaction of job–worker educational and skill mismatches in the Spanish labour market: a panel analysis”, *Applied Economics Letters*, 19 (4): 319-324.
- Battu, H., C. R. Belfield, and P. J. Sloane (1999), “Overeducation among graduates: a cohort view”, *Education Economics*, 7 (1): 21–38.
- Battu, H., C. R. Belfield, and P. J. Sloane (2000), “How well can we measure graduate overeducation and its effects?”, *National Institute Economic Review*, 171: 82–93.
- Chevalier, A., and J. Lindley (2009), “Overeducation and the skills of UK graduates”, *Journal of the Royal Statistical Society: Statistics in Society, Series A*, 172 (2): 307–337.
- DeLoach, S. B., and M. Kurt (2018), “On-the-Job Search, Mismatch and Worker Heterogeneity”, *Journal of Labor Research*, 39 (2): 219–233. 47.
- Duncan, G., and S.D. Hoffman (1981), “The incidence and wage effects of overeducation”, *Economics of Education Review*, 1 (1): 75–86. Eckaus, R. S. (1964), “Economic criteria for education and training”, *The Review of Economics and Statistics*, 47(2): 181–190.
- Florit, E. F., and L. E. Vila Lladosa (2007), “Evaluation of the Effects of Education on Job Satisfaction: Independent Single-Equation vs. Structural Equation Models”, *International Advances in Economic Research*, 13 (2): 157–170.
- Johnson, G. J., and W. R. Johnson (2002), “Perceived overqualification and dimensions of job satisfaction: A longitudinal analysis,” *Journal of Psychology*, 134 (5), 537–555.
- Lassassi, M., Sami,l (2022), Gender, social networks and job access: evidence from the Algerian labor market, *International Journal of Social Economics*.

Annex 1

Figure 1. Education/occupation mismatch, by sex



Source: Authors' computations using Labour Force Survey 2001-2014 - ONS.

Annex 2

Table 1. Determinants of skill Mismatch - mprobit (marginal effects) model estimation, Algeria 2003 - 2005 - 2007 - 2010

	2003		2005		2007		2010	
	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education
Socio-demographic characteristics								
Age	0.0626*** (0.0109)	0.0169 (0.0105)	0.110*** (0.0107)	0.0286*** (0.0102)	0.0892*** (0.0129)	-0.0315*** (0.0121)	0.102*** (0.0153)	-0.0259* (0.0140)
Age squared	-0.00114*** (0.000142)	0.000320** (0.000127)	-0.00173*** (0.000135)	0.000160 (0.000123)	-0.00145*** (0.000170)	0.000820*** (0.000150)	-0.00142*** (0.000202)	0.00111*** (0.000176)
Gender (ref: women)								
Men	0.508*** (0.0498)	-0.457*** (0.0517)	0.360*** (0.0461)	-0.299*** (0.0485)	0.713*** (0.0537)	-0.293*** (0.0556)	0.104 (0.0666)	-0.245*** (0.0732)
Marital status (ref: Currently Married)								
Never Married	0.0248 (0.0479)	-0.0821 (0.0527)	0.00865 (0.0457)	0.0668 (0.0503)	-0.0671 (0.0537)	-0.104* (0.0580)	-0.0872 (0.0677)	-0.0443 (0.0725)
Professional training (ref: No)								
Yes	-0.103*** (0.0385)	-0.348*** (0.0420)	-0.287*** (0.0406)	-0.444*** (0.0441)	-0.142*** (0.0448)	-0.369*** (0.0497)	-0.348*** (0.0495)	-0.420*** (0.0517)
Household Relationship (ref: other)								
Head of household	-0.163*** (0.0543)	0.245*** (0.0550)	-0.0119 (0.0493)	0.267*** (0.0509)	-0.000773 (0.0587)	0.107* (0.0589)	-0.0690 (0.0777)	0.508*** (0.0781)
Age at the first job	0.0289*** (0.00356)	-0.0258*** (0.00338)	0.0317*** (0.00358)	-0.0401*** (0.00337)	0.0201*** (0.00409)	-0.0349*** (0.00384)	0.0164*** (0.00432)	-0.0230*** (0.00389)
Experience	-0.0168*** (0.00261)	-0.00757*** (0.00218)	-0.0185*** (0.00259)	-0.0142*** (0.00222)	-0.0295*** (0.00314)	0.00697*** (0.00261)	-0.0216*** (0.00390)	-0.0111*** (0.00319)
Workplace (ref: other)								
Establishment	-0.278*** (0.0451)	-0.255*** (0.0455)	-0.317*** (0.0417)	-0.360*** (0.0413)	0.180*** (0.0619)	-0.211*** (0.0609)	0.215*** (0.0717)	-0.0894 (0.0679)
Job search (ref: formal channels)								
Social networks	-0.112*** (0.0336)	0.162*** (0.0343)	-0.140*** (0.0323)	0.248*** (0.0321)	-0.0118 (0.0367)	0.186*** (0.0369)	0.0514 (0.0433)	0.133*** (0.0420)
Sectors (ref: services)								
Agriculture	0.350*** (0.0585)	-0.139** (0.0598)	0.783*** (0.0574)	-0.859*** (0.0621)	0.796*** (0.0891)	-0.0971 (0.0922)	0.806*** (0.0976)	0.139 (0.0966)
Industry	-0.139*** (0.0514)	0.340*** (0.0499)	-0.0291 (0.0462)	0.296*** (0.0448)	0.00628 (0.0547)	0.00562 (0.0564)	0.00628 (0.0678)	-0.0617 (0.0693)
Construction	-0.0612 (0.0597)	0.187*** (0.0592)	-0.487*** (0.0584)	0.414*** (0.0537)	0.114* (0.0646)	0.258*** (0.0640)	-0.0418 (0.0760)	0.403*** (0.0713)
Trade	0.0453 (0.0504)	0.392*** (0.0524)	-0.0137 (0.0460)	0.198*** (0.0474)	0.0224 (0.0653)	0.0273 (0.0711)	0.182** (0.0726)	0.105 (0.0770)
Household characteristic								
Number of employees affiliated to social security in the household-1	0.0581* (0.0339)	-0.0616* (0.0371)	0.126*** (0.0325)	-0.0902** (0.0359)	0.0600** (0.0249)	-0.0702** (0.0280)	0.0104 (0.0450)	-0.0755 (0.0480)
Number of employees in the public sector in household-1	-0.0529 (0.0395)	0.00574 (0.0436)	-0.109*** (0.0391)	-0.00333 (0.0433)	-0.147*** (0.0489)	-0.0712 (0.0557)	-0.00254 (0.0549)	0.0924 (0.0591)
Number of employees in the Private sector in the household-1	-0.0306** (0.0153)	0.00185 (0.0156)	-0.00182 (0.0153)	0.0231 (0.0154)	0.0468 (0.0697)	0.248*** (0.0697)	-0.0952*** (0.0273)	0.00162 (0.0265)
Number of individuals with higher education level in household-1	0.130*** (0.0203)	-0.188*** (0.0242)	0.161*** (0.0366)	-0.277*** (0.0456)	0.0963*** (0.0214)	-0.250*** (0.0255)	0.153*** (0.0245)	-0.278*** (0.0296)
Number of uneducated individuals in household-1	-0.0366*** (0.0128)	0.137*** (0.0123)	-0.119*** (0.0324)	0.176*** (0.0328)	-0.0163 (0.0124)	-0.0422*** (0.0127)	-0.0307 (0.0224)	0.202*** (0.0213)
Stratum (ref: rural)								
Urban	-0.0962*** (0.0363)	0.136*** (0.0361)	0.119*** (0.0324)	-0.199*** (0.0320)	0.0920** (0.0377)	-0.0921** (0.0375)	-0.0117 (0.0489)	-0.197*** (0.0464)
Constant	-1.547*** (0.222)	-0.774*** (0.228)	-2.526*** (0.214)	-0.278 (0.218)	-2.689*** (0.257)	0.738*** (0.257)	-2.677*** (0.301)	-0.455 (0.296)
Observations	17032	17032	19783	19783	13944	13944	10185	10185

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Annex 3

Table 2. Determinants of skill Mismatch - mprobit (marginal effects) model estimation, Algeria 2003 - 2005 - 2007 - 2010

	2003				2005				2007				2010			
	Men		Women		Men		Women		Men		Women		Men		Women	
	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education	Over educated	Under education
Socio-demographic characteristics																
Age	0.0719*** (0.0118)	0.0137 (0.0115)	-0.00879 (0.0325)	0.0300 (0.0290)	0.120*** (0.0115)	0.0422*** (0.0112)	0.0702** (0.0320)	0.0196 (0.0278)	0.0994*** (0.0138)	-0.0252* (0.0132)	-0.0194 (0.0419)	-0.0540 (0.0347)	0.160*** (0.0221)	-0.0220 (0.0192)	0.00846 (0.0483)	-0.0979** (0.0462)
Age squared	-0.00123*** (0.000152)	0.000301** (0.000138)	-0.000279 (0.000446)	0.000461 (0.000378)	-0.00179*** (0.000145)	-2.18e-05 (0.000134)	-0.00148*** (0.000421)	0.000286 (0.000343)	-0.00158*** (0.000180)	0.000705*** (0.000163)	2.39e-05 (0.000577)	0.00128*** (0.000447)	-0.00223*** (0.000301)	0.00127*** (0.000241)	-0.000678 (0.000644)	0.00190*** (0.000594)
Marital status (ref: Currently Married)																
Never Married	0.00933 (0.0551)	-0.0161 (0.0627)	0.0282 (0.107)	-0.0204 (0.112)	0.0392 (0.0539)	0.0673 (0.0602)	-0.212** (0.0942)	0.0351 (0.103)	-0.204*** (0.0632)	-0.169** (0.0721)	0.184 (0.113)	-0.121 (0.109)	-0.233** (0.101)	-0.114 (0.111)	-0.0250 (0.142)	-0.148 (0.159)
Professional training (ref: No)																
Yes	-0.0445 (0.0426)	-0.342*** (0.0471)	-0.381*** (0.0927)	-0.178* (0.0979)	-0.253*** (0.0459)	-0.435*** (0.0503)	-0.470*** (0.0901)	-0.402*** (0.0965)	-0.0975* (0.0499)	-0.481*** (0.0580)	-0.455*** (0.107)	0.0294 (0.102)	-0.280*** (0.0696)	-0.681*** (0.0752)	-0.993*** (0.126)	0.193 (0.128)
Household Relationship (ref : other)																
Head of household	-0.229*** (0.0613)	0.321*** (0.0644)	0.0681 (0.202)	0.118 (0.167)	-0.0695 (0.0569)	0.170*** (0.0604)	0.171 (0.165)	0.576*** (0.140)	-0.137** (0.0663)	0.0298 (0.0702)	0.164 (0.203)	0.204 (0.153)	-0.388*** (0.117)	0.547*** (0.118)	0.0157 (0.260)	0.539** (0.214)
Age at the first job	0.0287** (0.00398)	-0.0323*** (0.00393)	0.0256** (0.00841)	-0.00524 (0.00424)	0.0414*** (0.00418)	-0.0655*** (0.00990)	0.00645 (0.00821)	0.00129 (0.00645)	0.0178*** (0.00465)	-0.0528*** (0.00465)	0.0152 (0.00931)	-0.00241 (0.00609)	0.0213*** (0.00527)	-0.0376*** (0.00527)	0.0369*** (0.0169)	0.0145 (0.0148)
Experience	-0.0174*** (0.00277)	-0.00546** (0.00233)	-0.0112 (0.00889)	-0.00379 (0.00732)	-0.0195*** (0.00235)	-0.0117*** (0.00235)	-0.0195** (0.00935)	-0.0132* (0.00796)	-0.0269*** (0.00331)	0.00932*** (0.00281)	-0.0430*** (0.0116)	0.00886 (0.00888)	-0.0229*** (0.00568)	-0.00873** (0.00412)	-0.00767 (0.0173)	-0.0191 (0.0150)
Workplace (ref: other)																
Establishment	-0.255*** (0.0496)	-0.108** (0.0506)	-0.104 (0.140)	-0.939*** (0.141)	-0.268*** (0.0470)	-0.136*** (0.0470)	-0.385*** (0.131)	-1.034*** (0.134)	0.184*** (0.0647)	-0.166** (0.0643)	-0.0496 (0.251)	-0.229 (0.224)	0.281*** (0.0959)	-0.124 (0.0890)	-0.0525 (0.311)	-0.342 (0.309)
Job search (ref: formal channels)																
Social networks	-0.0922** (0.0360)	0.180*** (0.0368)	-0.225** (0.102)	0.283*** (0.104)	-0.144*** (0.0349)	0.225*** (0.0347)	0.0370 (0.0914)	0.409*** (0.0928)	-0.0355 (0.0396)	0.142*** (0.0402)	0.117 (0.101)	0.279*** (0.0979)	0.0660 (0.0602)	0.131** (0.0565)	0.0374 (0.122)	0.307** (0.128)
Sectors (ref: services)																
Agriculture	0.380*** (0.0634)	-0.170*** (0.0656)	0.324* (0.179)	0.241 (0.175)	0.923*** (0.0669)	-0.720*** (0.207)	-0.157 (0.216)	-1.792*** (0.0917)	0.808*** (0.0955)	-0.116 (0.569)	0.0484 (0.569)	0.117 (0.129)	1.095*** (0.129)	0.100 (0.129)	-0.0563 (0.524)	0.0104 (0.506)
Industry	-0.235*** (0.0599)	0.173*** (0.0584)	0.0794 (0.126)	0.475*** (0.130)	-0.129** (0.0547)	0.115** (0.0531)	0.0208 (0.125)	0.314** (0.130)	-0.0462 (0.0588)	-0.00492 (0.0611)	0.205 (0.152)	0.137 (0.152)	-0.0611 (0.0929)	-0.143 (0.0942)	0.0934 (0.192)	0.335 (0.209)
Construction	-0.0531 (0.0619)	0.209*** (0.0615)	0.108 (0.400)	0.668* (0.388)	-0.432*** (0.0606)	0.542*** (0.0560)	-0.519 (0.384)	-0.575 (0.462)	0.119* (0.0673)	0.277*** (0.0670)	0.197 (0.294)	-0.176 (0.337)	-0.0767 (0.103)	0.499*** (0.0936)	-0.685* (0.358)	0.315 (0.318)
Trade	0.0178 (0.0521)	0.358*** (0.0539)	0.606*** (0.228)	0.269 (0.258)	0.000824 (0.0477)	0.213*** (0.0488)	0.152 (0.208)	-0.175 (0.239)	-0.00661 (0.0685)	0.0563 (0.0740)	0.504** (0.231)	-0.698** (0.333)	0.140 (0.0972)	0.0918 (0.105)	0.891*** (0.235)	0.128 (0.306)
Household characteristic																
Number of employees affiliated to social security in the household-1	0.0805** (0.0374)	-0.0387 (0.0416)	-0.0331 (0.0854)	-0.129 (0.0882)	0.153*** (0.0362)	-0.0530 (0.0404)	0.00387 (0.0773)	-0.194** (0.0818)	0.0919*** (0.0283)	-0.0473 (0.0327)	-0.000705 (0.0546)	-0.0911 (0.0560)	-0.00556 (0.0638)	-0.115* (0.0691)	0.0353 (0.104)	-0.133 (0.124)
Number of employees in the public sector in household-1	-0.0871** (0.0441)	-0.0209 (0.0494)	0.0727 (0.0936)	0.138 (0.0990)	-0.0283 (0.0445)	-0.00821 (0.0496)	0.0694 (0.0861)	-0.166** (0.0941)	-0.0245 (0.0568)	0.127 (0.0663)	-0.0245 (0.101)	0.0226 (0.107)	0.106 (0.0786)	-0.0195 (0.0867)	0.200 (0.121)	0.200 (0.143)
Number of employees in the Private sector in the household-1	-0.0372** (0.0166)	-0.0275 (0.0174)	-0.0148 (0.0410)	0.0518 (0.0392)	-0.0104 (0.0169)	0.00206 (0.0171)	0.0388 (0.0383)	0.0213 (0.0383)	-0.0181 (0.0807)	0.133 (0.0841)	0.122 (0.145)	0.459*** (0.133)	-0.148*** (0.0384)	-0.0132 (0.0363)	-0.00264 (0.0738)	0.104 (0.0782)
Number of individuals with higher education level in household-1	0.138*** (0.0235)	-0.139*** (0.0276)	0.0971** (0.0424)	-0.302*** (0.0546)	0.197*** (0.0445)	-0.249*** (0.0562)	0.113* (0.0672)	-0.212*** (0.0627)	0.111*** (0.0251)	-0.208*** (0.0301)	0.0467 (0.0427)	-0.285*** (0.0499)	0.234*** (0.0348)	-0.362*** (0.0446)	-0.0164 (0.0536)	-0.276*** (0.0681)
Number of uneducated individuals in household-1	-0.0497*** (0.0136)	0.145*** (0.0131)	0.0694 (0.0432)	0.175*** (0.0427)	-0.104*** (0.0348)	0.131*** (0.0361)	-0.196** (0.0908)	0.307*** (0.0847)	-0.0247* (0.0136)	-0.0715*** (0.0142)	-0.0324 (0.0324)	0.0758** (0.0308)	-0.103*** (0.0323)	0.264*** (0.0291)	0.0799 (0.0604)	0.165** (0.0669)
Stratum (ref: rural)																
Urban	-0.0845** (0.0384)	0.116*** (0.0384)	-0.199* (0.121)	0.421*** (0.115)	0.103*** (0.0348)	-0.432* (0.238)	0.157* (0.0931)	-0.164* (0.0927)	0.0872** (0.0402)	-0.0387 (0.0403)	0.113 (0.115)	0.00340 (0.691)	-0.0315 (0.0611)	-0.233*** (0.0611)	-0.0275 (0.157)	-0.264 (0.168)
Constant	-1.216*** (0.242)	-1.074*** (0.253)	-0.233 (0.606)	-2.109*** (0.579)	-2.670*** (0.232)	-0.189*** (0.0344)	-0.696 (0.580)	-0.700 (0.550)	-2.006*** (0.271)	0.770*** (0.275)	-0.472 (0.763)	-0.306*** (0.107)	-3.603*** (0.423)	-0.841** (0.403)	-0.680 (0.855)	0.115 (0.854)
Observations	14483	14483	2549	2549	16748	16748	16748	3035	11519	11519	2425	2425	8770	8770	1415	1415

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Annex 4

Table 3. Do you use the knowledge acquired during the training - multinomial logit - odds ratio- 2010

	Total			Men			Women		
	All the time	Frequently	Rarely occasionally	All the time	Frequently	Rarely occasionally	All the time	Frequently	Rarely occasionally
Socio-demographic characteristics									
Age	0.796*** (0.0278)	0.901** (0.0414)	0.900** (0.0409)	0.786*** (0.0303)	0.870*** (0.0455)	0.889** (0.0443)	0.842* (0.0842)	1.018 (0.121)	0.954 (0.126)
Age squared	1.002*** (0.000460)	1.001** (0.000595)	1.001** (0.000595)	1.002*** (0.000499)	1.002*** (0.000662)	1.001** (0.000643)	1.002 (0.00139)	1.000 (0.00164)	1.001 (0.00183)
Gender (ref: women)									
Men	0.605*** (0.0661)	0.518*** (0.0721)	0.706** (0.0993)	---	---	---	---	---	---
Marital status (ref: Currently Married)									
Never Married	0.741** (0.0921)	1.366* (0.226)	1.170 (0.192)	0.888 (0.139)	1.218 (0.273)	1.095 (0.228)	0.715 (0.161)	1.631* (0.447)	1.297 (0.370)
Educational Attainment (ref: No certificate)									
Primary	0.353 (0.303)	0.109** (0.102)	519.078 (3.829e+08)	0.448 (0.391)	0.0970** (0.0919)	274.716 (1.371e+08)	2.66e-06 (0.00192)	0.736 (717.6)	0.191 (197.1)
Less than secondary	0.369 (0.311)	0.177* (0.158)	389.026 (2.870e+08)	0.406 (0.348)	0.166** (0.149)	182.678 (9.116e+07)	6.42e-06 (0.00464)	1.019 (994.3)	0.537 (555.4)
Secondary	0.575 (0.485)	0.193* (0.172)	540.941 (3.991e+08)	0.639 (0.548)	0.175* (0.157)	241.959 (1.207e+08)	1.06e-05 (0.00765)	1.225 (1,194)	1.108 (1,145)
University	1.837 (1.625)	0.642 (0.607)	1.219e+06 (8.990e+08)	1.960 (1.783)	0.518 (0.501)	362.160 (1.807e+08)	4.06e-05 (0.0294)	5.745 (5,603)	5.059 (5,230)
Professional training (ref: No)									
Yes	2.431*** (0.696)	1.719 (0.577)	1.373 (0.482)	2.288** (0.746)	1.480 (0.593)	0.894 (0.392)	3.358* (2.191)	2.625 (1.837)	3.093 (2.190)
Household Relationship (ref: other)									
Head of household	1.274 (0.193)	1.423* (0.285)	1.554** (0.312)	1.733*** (0.315)	1.481 (0.376)	1.558* (0.376)	0.295** (0.153)	0.353 (0.234)	0.826 (0.556)
Age at the first job	1.041*** (0.0105)	1.040*** (0.0139)	1.026* (0.0133)	1.056*** (0.0117)	1.052*** (0.0160)	1.026* (0.0147)	0.972 (0.0302)	0.963 (0.0343)	1.006 (0.0403)
Experience	1.115*** (0.00958)	1.061*** (0.0118)	1.035*** (0.0114)	1.112*** (0.0103)	1.065*** (0.0130)	1.039*** (0.0122)	1.090*** (0.0326)	1.022 (0.0346)	1.007 (0.0394)
Workplace (ref: other)									
Establishment	4.950*** (0.830)	2.723*** (0.624)	2.040*** (0.421)	5.131*** (0.915)	2.315*** (0.564)	2.052*** (0.449)	2.973* (1.705)	5.902** (5.235)	1.794 (1.389)
Job search (ref: formal channels)									
Social networks	0.633*** (0.0569)	0.608*** (0.0752)	0.665*** (0.0798)	0.563*** (0.0574)	0.566*** (0.0820)	0.706*** (0.0951)	0.932 (0.195)	0.752 (0.196)	0.543** (0.156)
Sectors (ref: services)									
Agriculture	0.748 (0.219)	1.192 (0.438)	0.558 (0.232)	0.687 (0.221)	1.187 (0.476)	0.529 (0.234)	2.814 (3.396)	3.407 (4.631)	2.128 (3.230)
Industry	1.441*** (0.172)	1.704*** (0.261)	1.138 (0.184)	1.673*** (0.222)	2.039*** (0.353)	1.276 (0.227)	0.823 (0.230)	0.840 (0.285)	0.625 (0.245)
Construction	1.291 (0.213)	1.361 (0.306)	1.494* (0.308)	1.476** (0.259)	1.344 (0.332)	1.565** (0.343)	1.013 (0.600)	2.153 (1.425)	0.836 (0.671)
Trade	0.673*** (0.0971)	0.843 (0.172)	0.864 (0.167)	0.910 (0.145)	1.170 (0.266)	0.863 (0.192)	0.171*** (0.0616)	0.232*** (0.114)	0.726 (0.288)
Household characteristic									
Number of employees affiliated to social security in the household-1	0.916 (0.0760)	0.931 (0.104)	1.115 (0.119)	1.004 (0.0997)	0.958 (0.138)	1.203 (0.154)	0.716** (0.112)	0.801 (0.151)	0.880 (0.171)
Number of employees in the public sector in household-1	1.022 (0.0985)	1.171 (0.150)	1.018 (0.125)	0.880 (0.102)	1.129 (0.185)	0.975 (0.143)	1.439** (0.263)	1.413 (0.310)	1.236 (0.280)
Number of employees in the Private sector in the household-1	1.057 (0.0621)	1.031 (0.0824)	0.910 (0.0732)	1.029 (0.0709)	0.937 (0.0961)	0.865 (0.0827)	1.165 (0.145)	1.225 (0.178)	1.051 (0.167)
Number of individuals with higher education level in household-1	1.137*** (0.0498)	1.038 (0.0583)	0.989 (0.0558)	1.130** (0.0583)	1.059 (0.0728)	1.000 (0.0669)	1.179* (0.103)	1.023 (0.106)	0.977 (0.106)
Number of uneducated individuals in household-1	1.002 (0.0453)	0.908 (0.0563)	1.036 (0.0605)	1.054 (0.0561)	0.913 (0.0706)	1.030 (0.0715)	0.937 (0.0887)	0.863 (0.101)	1.013 (0.119)
Stratum (ref: rural)									
Urban	1.175 (0.117)	1.117 (0.150)	1.003 (0.128)	1.238* (0.135)	1.279 (0.200)	1.029 (0.145)	0.988 (0.256)	0.721 (0.216)	0.817 (0.255)
Constant	13.70** (15.11)	1.436 (1.852)	1.56e-06 (0.00115)	5.783 (6.791)	1.618 (2.291)	4.48e-06 (0.00223)	1.638e+06 (1.184e+09)	0.0487 (47.46)	0.269 (278.0)
Observations	5041	5041	5041	3591	3591	3591	1450	1450	1450

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Annex 5

Table 4. Effects of mismatch on job search - Probit model (marginal effects) 2003 - 2005 - 2007 - 2010

Probit mfx	2003			2005			2007			2010		
	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women
Socio-demographic characteristics												
Age	0.00293 (0.00302)	0.00553 (0.00338)	-0.00966 (0.00610)	0.01088*** (0.00287)	0.0147*** (0.00325)	-0.000919 (0.00472)	0.0110*** (0.00292)	0.0136*** (0.00325)	-0.00418 (0.00677)	0.0182*** (0.00383)	0.0203*** (0.00414)	-0.00953 (0.00948)
Age squared	-6.87e-05* (3.85e-05)	-9.90e-05** (4.28e-05)	8.74e-05 (8.16e-05)	-0.000187*** (3.65e-05)	-0.000240*** (4.11e-05)	-7.91e-07 (6.22e-05)	-0.000193*** (3.80e-05)	-0.000224*** (4.21e-05)	1.52e-05 (9.24e-05)	-0.000334*** (4.97e-05)	-0.000365*** (5.34e-05)	0.000144 (0.000129)
Gender (ref: women)												
Men	-0.0169 (0.0156)	----	----	-0.0155 (0.0138)	----	----	-0.0385*** (0.0140)	----	----	0.0194 (0.0189)	----	----
Marital status (ref: Currently Married)												
Never Married	0.0540*** (0.0142)	0.0445*** (0.0169)	0.0377* (0.0200)	0.0667*** (0.0131)	0.0523*** (0.0159)	0.0380*** (0.0146)	0.0399*** (0.0132)	0.0154 (0.0161)	0.0718*** (0.0204)	0.0511*** (0.0187)	0.0170 (0.0221)	0.108*** (0.0285)
Household Relationship (ref: other)												
Head of household	0.0224 (0.0158)	-0.00160 (0.0183)	0.000591 (0.0322)	0.0190 (0.0135)	-0.0112 (0.0161)	0.0464 (0.0290)	0.00344 (0.0142)	-0.0314* (0.0166)	0.0271 (0.0373)	0.0104 (0.0215)	-0.0239 (0.0249)	-0.0166 (0.0512)
Educational Attainment (ref: No certificate)												
Primary	-0.0331** (0.0157)	-0.0353** (0.0173)	0.0201 (0.0497)	-0.0227* (0.0129)	-0.0221 (0.0146)	0.0426 (0.0395)	-0.0459*** (0.0158)	-0.0370** (0.0179)	-0.0629* (0.0326)	-0.0762*** (0.0211)	-0.0734*** (0.0227)	-0.0838* (0.0472)
Less than secondary	-0.0483** (0.0195)	-0.0365 (0.0223)	-0.0274 (0.0382)	-0.0710*** (0.0147)	-0.0631*** (0.0174)	-0.00304 (0.0277)	-0.0828*** (0.0190)	-0.0623*** (0.0225)	-0.0873*** (0.0319)	-0.135*** (0.0295)	-0.121*** (0.0342)	-0.155*** (0.0396)
Secondary	-0.0961*** (0.0201)	-0.0838*** (0.0234)	-0.0831* (0.0436)	-0.0971*** (0.0157)	-0.0757*** (0.0193)	-0.0333 (0.0297)	-0.144*** (0.0184)	-0.129*** (0.0226)	-0.109*** (0.0379)	-0.240*** (0.0284)	-0.242*** (0.0340)	-0.170*** (0.0543)
University	-0.105*** (0.0201)	-0.0909*** (0.0250)	-0.104*** (0.0403)	-0.104*** (0.0161)	-0.0707*** (0.0224)	-0.0668** (0.0278)	-0.126*** (0.0200)	-0.107*** (0.0249)	-0.140*** (0.0451)	-0.275*** (0.0261)	-0.288*** (0.0299)	-0.216*** (0.0641)
Professional training (ref: No)												
Yes	0.0204* (0.0115)	0.0198 (0.0132)	0.0204 (0.0180)	0.0584*** (0.0119)	0.0636*** (0.0139)	0.0162 (0.0150)	0.0482*** (0.0119)	0.0423*** (0.0138)	0.0444*** (0.0214)	0.0359*** (0.0147)	0.0281* (0.0161)	0.0758*** (0.0330)
Job characteristic												
Skill-mismatch (ref: Matched situation)												
Over-educated	0.0391*** (0.0121)	0.0340** (0.0137)	0.0487** (0.0236)	0.00886 (0.0105)	-0.00109 (0.0122)	0.0284* (0.0162)	0.0459*** (0.0113)	0.0343*** (0.0131)	0.0786*** (0.0228)	0.142*** (0.0185)	0.139*** (0.0224)	0.154*** (0.0322)
Under-education	0.0289** (0.0138)	0.0457*** (0.0156)	-0.0514** (0.0202)	-6.35e-05 (0.0118)	0.00511 (0.0136)	-0.00315 (0.0187)	-0.00592 (0.0132)	0.00353 (0.0154)	-0.0201 (0.0240)	-0.0452* (0.0232)	-0.0374 (0.0276)	-0.0312 (0.0380)
Age at the first job	-0.00407*** (0.000975)	-0.00609*** (0.00115)	0.00307* (0.00181)	-0.00459*** (0.000978)	-0.00869*** (0.00124)	0.000175 (0.000962)	-0.00336*** (0.000120)	-0.00527*** (0.00185)	0.00148 (0.00108)	-0.000471 (0.00188)	-0.000433 (0.00120)	-0.00287 (0.00311)
Experience	-0.00907*** (0.000688)	-0.00909*** (0.000752)	-0.00601*** (0.00187)	-0.00863*** (0.000669)	-0.00809*** (0.000743)	-0.0109*** (0.00139)	-0.0122*** (0.000715)	-0.0119*** (0.000783)	-0.0121*** (0.00203)	-0.0116*** (0.000940)	-0.0111*** (0.000993)	-
Workplace (ref: other)												
Establishment	-0.206*** (0.0168)	-0.221*** (0.0175)	-0.0558 (0.0496)	-0.254*** (0.0168)	-0.263*** (0.0173)	-0.223*** (0.0810)	-0.269*** (0.0152)	-0.268*** (0.0158)	-0.290*** (0.0627)	-0.256*** (0.0172)	-0.264*** (0.0177)	-0.117 (0.0713)
Job search (ref: formal channels)												
Social networks	0.0132 (0.00876)	0.0134 (0.00981)	0.0106 (0.0160)	0.0263*** (0.00801)	0.0392*** (0.00905)	-0.0343*** (0.0101)	0.0277*** (0.00864)	0.0361*** (0.00963)	-0.0133 (0.0173)	0.0168 (0.0113)	0.0152 (0.0122)	0.0376 (0.0258)
Sectors (ref: services)												
Agriculture	0.180*** (0.0224)	0.193*** (0.0237)	0.151* (0.0847)	0.0302 (0.0186)	0.0380* (0.0205)	-0.0345 (0.0334)	0.136*** (0.0233)	0.152*** (0.0246)	-0.0179 (0.0769)	0.0709*** (0.0261)	0.0860*** (0.0274)	-0.135*** (0.0420)
Industry	0.0514*** (0.0152)	0.0742*** (0.0175)	-0.0366** (0.0182)	0.0303** (0.0131)	0.0460*** (0.0151)	-0.0329*** (0.0122)	0.0327** (0.0143)	0.0421*** (0.0162)	-0.0147 (0.0259)	-0.0512*** (0.0186)	-0.0508** (0.0206)	-0.0223 (0.0374)
Construction	0.134*** (0.0185)	0.142*** (0.0196)	0.128 (0.0956)	0.145*** (0.0179)	0.158*** (0.0191)	0.0953 (0.0709)	0.157*** (0.0160)	0.165*** (0.0169)	0.0790 (0.0622)	0.179*** (0.0188)	0.182*** (0.0196)	0.168** (0.0790)
Trade	0.178*** (0.0205)	0.197*** (0.0217)	0.0290 (0.0524)	0.140*** (0.0189)	0.158*** (0.0204)	0.0159 (0.0333)	0.188*** (0.0176)	0.191*** (0.0186)	0.201*** (0.0614)	0.240*** (0.0189)	0.255*** (0.0195)	0.0442 (0.0492)
Household characteristic												
Number of employees affiliated to social security in the household-1	-0.0265** (0.0109)	-0.0368*** (0.0130)	-0.00464 (0.0152)	-0.0564*** (0.0100)	-0.0590*** (0.0118)	-0.0260** (0.0116)	-0.0221*** (0.00614)	-0.0255*** (0.00732)	-0.00282 (0.00959)	-0.0375*** (0.0120)	-0.0426*** (0.0135)	-0.0251 (0.0208)
Number of employees in the public sector in household-1	3.30e-05 (0.0124)	0.0122 (0.0148)	-0.0171 (0.0166)	0.0526*** (0.0115)	0.0574*** (0.0138)	0.0219* (0.0125)	0.0296** (0.0123)	0.0334** (0.0152)	0.000605 (0.0182)	0.0403*** (0.0149)	0.0559*** (0.0170)	0.00556 (0.0245)
Number of employees in the Private sector in the household-1	-0.00816* (0.00444)	-0.0100** (0.00489)	0.000655 (0.00929)	0.00367 (0.00416)	0.000333 (0.00476)	0.00367 (0.00570)	0.0247 (0.0158)	0.0442** (0.0194)	-0.00602 (0.0240)	0.0171** (0.00683)	0.0165** (0.00749)	0.0172 (0.0137)
Number of individuals with higher education level in household-1	-0.00954 (0.00622)	-0.0154** (0.00759)	0.00396 (0.00749)	-3.82e-05 (0.0110)	-0.00359 (0.0142)	0.00871 (0.00934)	-0.00502 (0.00557)	-0.0102 (0.00688)	-0.00152 (0.00719)	-0.0201*** (0.00754)	-0.0240*** (0.00871)	-0.00870 (0.0119)
Number of uneducated individuals in household-1	0.00737** (0.00355)	0.00498 (0.00394)	0.0139* (0.00780)	-0.0219** (0.00903)	-0.0224** (0.0101)	-0.0246 (0.0151)	0.00381 (0.00295)	0.00252 (0.00337)	8.05e-05 (0.00560)	0.000693 (0.00563)	-0.00285 (0.00619)	0.000146 (0.0119)
Stratum (ref: rural)												
Urban	-0.0472*** (0.00976)	-0.0531*** (0.0107)	0.000982 (0.0212)	-0.0387*** (0.00830)	-0.0370*** (0.00926)	-0.0358** (0.0159)	0.0751*** (0.00855)	0.0812*** (0.00961)	0.0408** (0.0179)	0.0262** (0.0123)	0.0295** (0.0132)	-0.00574 (0.0308)
Observations	10586	10586	1536	12841	10853	1988	13891	11474	2417	10185	8770	1415

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1