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Gender wage gap in the Tunisian labour market: An econometric analysis

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Abstract

This article is based on the explanation of the pay differences between women and men in the Tunisian labour market. The theoretical framework of our research is articulated around the economic theory of gender discrimination in the labour market, by focusing on the main typologies highlighted in the work of Becker (1972), Phelps (1972), and Arrow (1973). Based on the Oaxaca-Blinder model (1973), the use of micro-econometric data from the 2015 national population and employment survey shows a pay gap between men and women of 10.4%. The unexplained part of this gap, which can be attributed to discrimination, is 14%. This work has also made it possible to identify the various socio-economic factors that can, directly and indirectly, impact wage inequalities between women and men.

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List of acronyms:

- INS: National institute of statistics of Tunisia
- ENPE: National population and employment survey
- ILO: International and labour organisation
- CAP: Certificate of professional aptitude
- BTS: Superior technician's diploma
- BTP: Professional technician's diploma
- CDD: Fixed-term contract
- CDI: Permanent contract
- TND: Tunisian Dinars
- OLS: Ordinary least squares

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1 Introduction

In Tunisia, the adoption of the Personal Status Code in 1956-1957 was the origin of major reforms affecting the issue of inequalities between women and men in the labour market across various socio-economic aspects related to gender. The constitutional reforms, recently adopted in Tunisia, aim for greater equality between women and men. Indeed, article 21 of the Tunisian constitution of 2014 advocates equality between the two genders. Despite these achievements, the gaps between women and men in the labour market remain significant in terms of participation in economic life, working conditions and remuneration. The importance of this topic stems from the fact that gender equality is linked to economic progress, financial and social benefits (better health and education for their children), peace, and the breaking the poverty cycle.

Interestingly, the economics of gender, as well as labour discrimination literature, were abundantly produced and discussed by economists, sociologists and psychologists. The literature is rich in analysis and presentation of explanatory factors, which are mainly divided into three categories: economic factors such as poverty, unemployment, the public sector and a country's economic situation; social factors such as culture, traditions, customs, education, marital status and number of children; and legal factors. In this context, gender discrimination has long been presented as a multi-disciplined and complex phenomenon that can be explained by various socio-economic factors. Indeed, research (Rebecca Miles, 2012; Antoine Bozio, Brigette Dormont, and Cecilia Garcia-Penalosa, 2014) shows that women face severe wage discrimination in the workplace, with this discrimination extending to both skilled and unskilled jobs, as well as labour opportunities in the public and private sectors. Men are allocated to skilled employment, whilst women are allocated to unskilled or low-skilled work. Women are, in fact, thought to be less advantageous than men (Annie Fouquet and Claude Rack, 1999).

The objective of this work is to explain the differences in pay between men and women in the labour market in Tunisia and to measure the part that is linked to discrimination. Indeed, it is approached mainly by microeconomic theories, which draw inspiration from the neoclassical school and are founded by Becker (1957). Since the late 1950s, there has been an emphasis within the socio-economic system on the extent of the effects of discrimination against women. This question has been analysed primarily by Becker (1957, 1971), Phelps (1972), Arrow (1973), Mincer (1974) and Glein Cain (1986).

The contribution of this article is, therefore, on the one hand, to measure the pay gap observed between men and women in the labour market in Tunisia. On the other hand, it is a question of explaining this gap, not by objective elements (difference in terms of human capital) but by subjective elements (by isolating the gender effect), which can be understood as being a source of discrimination.

For this, the work will be structured as follows: Section two will focus on a theoretical literature review on discrimination. Section three will describe the individual database used, as well as the profile of the Tunisian labour market. Section four proposes the econometric methodology adopted. Finally, the fifth section will present the results obtained according to the OLS regressions and according to the decompositions of Blinder-Oaxaca (1973).

2 The typologies of gender discrimination in the labour market

There are two types of gender-based discrimination in the labour market, highlighted respectively in the work of Becker (1957, 1972), Phelps (1972) and Arrow (1973). The two types are: “discrimination by taste” and “statistical discrimination” (Cain, 1986; Becker and Phelps, 1972; Arrow, 1973; Francois Combarnous, 1994; Nathalie Havet and Catherine Sofer, 2002; Bernard Gazier, 2010; Stéphane Carcillo and Marie-Anne Valfort, 2018). The first theories explain that discriminatory preferences form a whole thesis, which is based mainly on three economic models: Firstly, discrimination on the part of employers (employers that want to gain the greatest economic profit hire people based on their attributes. The neoclassical theory assumes that men are preferred, valued and paid more than women). Secondly, discrimination on the part of male employees (the theory is that due to tastes and preferences, men choose not to collaborate with women). And, thirdly, discrimination on the part of consumers (consumers refused to be associated with women because of their independent tastes and preferences). The precursors of taste discrimination, Francis Edgeworth (1922), Becker (1957), Edmund Phelps (1972) and Cain (1986), explain that this type is characterised by the aversion of agents (employers, employees and consumers) to minorities (women) who are ready to give up part of their income, in order not to work with women (Pascale Petit, 2003, Nathalie Havet and Catherine Sofer, 2002; Bernard Gazier, 2010). These actors are ready to make complex choices in order to satisfy their preferences. Certainly, the modeling of this idea relies on the maximisation of a utility function, in which the number of women hired is a negative influence argument.

Phelps (1972a,1972b) conceptualises statistical discrimination in the literature, employing the hypothesis of imperfect information on the labour market (Nathalie Havet and Catherine Sofer, 2002). The key premise is that employers have limited job seekers’ qualifications. In this approach, an employer judges individual productivity based on quantifiable characteristics, such as gender, which they believe are traits associated with an individual’s performance and output. The theory assumes that employers make statistical assumptions and project specific group characteristics, as a result of the existence of an unobserved component of applicants' productivity at the time of hiring. This contributes to gender discrimination in the labour market, not only through hiring but also through a low expectation of female productivity (Mc Call, 1972, Arrow, 1973; Heckman, 1988; Nathalie Havet et Catherine Sofer, 2002; Pascale Petit, 2003)

Interestingly, recent advances in the economics of gender, that have been achieved via the experimental approach, discuss how the experimental literature contributes to a deeper understanding of recurrent questions on gender, as well as to the broadening of research questions towards previously unexplored dimensions of gender differences. The factors driving gender differences in the labour market can be broadly categorised into 2 forces: economic factor and social factor.

In order to look into the reasons behind the gender wage gap in the Turkish labour market, Ipek Ilkkaracan et Raziye Selim (2007) used matched employer-employee data, conventional wage regression estimations, the Oaxaca decomposition method and common

wage regression estimations. The huge number of variables in the data set enables a rigorous quantitative analysis of the involvement of various individual and company-related factors creating wage disparities between men and women, such as job duration, occupational and industry segregation, location in the private versus public sector, collective bargaining employment and firm size. It also analyses the level of gender-based industry and occupational segregation within the data set and computes the Duncan & Duncan segregation index. They discover that women have much lower levels of job experience and employment longevity, which explains a significant portion of the salary disparity between men and women. Other key factors influencing salary gaps include a lower concentration of women in occupations subject to collective bargaining and a substantial level of occupational and industrial segregation. The findings show that the various rates of return, on a number of the wage determinant variables, have a major impact on how the gender wage gap develops.

Using PSID microdata from 1980 to 2010, Lawrence M. Kahn and Francine D. Blau (2016) provide new empirical evidence on the dynamics and structure of the gender wage difference, which dramatically decreased throughout this time. They come to the conclusion that many of the traditional hypotheses are still valid. Although overall human capital effects are now essentially inconsequential, women's workforce interruptions and shorter hours in highly skilled occupations continue to be important, possibly because of offsetting differentials.

Experimental evidence, supported by research, strongly demonstrates that discrimination cannot be disregarded. Gender disparities in roles and the division of work, as well as variances in jobs and industries, continue to be important. One of the recent theories explaining gender disparities is predicated on psychological traits or non-cognitive skills.

Newlier, Marwa Biltagy (2019) explores the determinants of the gender wage gap in Egypt, by estimating wage differentials between males and females. The methodology is based on the Oaxaca-Blinder and Neuman-Oaxaca decomposition methods and it uses data from the Egypt Labour Market Panel Survey from 2006 and 2012 (ELMPS 2006, 2012). The results of this paper reveal wage disparities, due to visible differences in characteristics between men and women, including invisible differences. The gender pay gap is projected to be 25% and 21% respectively in 2006 and 2012, and progress is being made. Part of this discrepancy can be explained by the fact that girls are less likely than men to get high-standard, high-paying jobs. In addition, unobservable factors, such as non-cognitive talents and psychological endowments, are seen as emerging causes of the gender pay gap.

3 The Tunisian Labour Market: Some Descriptive Statistics

3.1 Database analysis

The data used for this study comes from the National Population and Employment Survey, carried out in 2015 by the National Institute of Statistics of Tunisia. This survey constitutes an important statistical source for the analysis of wages in Tunisia. Using this database will allow us not only to measure but also to break down the pay gap between women and men. The salary module of the ENPE 2015 provides several pieces of information on the individual characteristics of salaried category workers in the strict sense of the ILO, of which 23.24% are female and 76.76% are male. This is a survey based on a sample of 17,504 observations, distributed as follows (see table below):

Table 1: Database descriptive statistics

Number of observations	Women	Men
Sex	7159	10345
Marital status	31094	102682
Education	31095	102683
Diploma nature	12721	22416
Economic sector	31087	102681
Place of work	30384	101969
Contract nature	30353	101792

INS - ENPE 2015

In Tunisia, according to 2019 INS data, women represent 26.4% of the employed labour force. Moreover, the participation rate of women is relatively low compared to men, at 28%.

Women have relatively different socio-demographic characteristics in the market than men. Their average age is 37 years, younger than men (41). Interestingly, men are on average four years older than women and, consequently, have more professional experience. Older men are also more likely to earn more money than women (see annexe Table I). In addition, 35% of women are single, compared to 28% of men. Women also tend to prolong their studies, since 29.5% of them have a higher education level compared to 12% of men. Finally, employed women are mainly divided between the education, health and administration sector (30%), as well as the textile sector (17.4%), commerce (11.9%) and agriculture (11.4%). Thus, despite relatively high levels of education, women paradoxically hold jobs in sectors with low added value. Women are more impacted by unemployment, since the unemployment rate for women for the year 2019 is 22.5%, whilst for men it is 12.3% (Figures 2, 3 and 4).

3.2 Salaries for both men and women:

Figure 1 depicts estimates of the wage distribution of male and female employees using kernel density estimators. In comparison to female workers, men's earnings are more consistent and have a higher mean wage. Obviously, in the labour market context, the distribution of the average salary of women followed roughly the same pattern as that of males. This is the result of Tunisia's salary system. The highest level of pay is seen for men, as is to be expected. Interestingly, the wage distribution demonstrates that 50% of male employees have a wage that is lower or greater than the maximum point of the median wage (0.85). However, it is 0.82 for females. High levels of salary disparity between men and women can be used to explain this difference.

The following section describes wage differences between men and women and makes an attempt to use the Blinder-Oaxaca wage decomposition to explain the wage gap in Tunisia.

4 Methodology

4.1 Definition of variables

Based on the empirical literature, we use two econometric methods to explain gender-based wage differences. On the one hand, we use the OLS regression in an aggregated and disaggregated version, the main objective of which is to analyse the significance and estimate the effect of different variables used on the average salaries of men and women. Next, we use the decomposition method, with an interaction effect inspired by the classical Oaxaca-Blinder decomposition (1973).

In addition, the decomposition with interaction effect (Cotton, 1988; Jones and Kelly, 1984; Reimers, 1983; Winsborough and Dickenson, 1971) is used to study the mean difference in the wages of women and men, to detect the individual characteristics that explain in more detail the wage gap observed in the labour market in Tunisia. Indeed, the method breaks down the difference in average wages into three components within the framework of a detailed linear regression: an “explained” part, attributable to all the characteristics weighted with the reference coefficient; a residual part “unexplained” , interpreted as discrimination linked to gender; and a part interpreted as the term of interaction between the explained part and the unexplained part (Seyed Moaven Razavi and Nader Habibi, 2014; Ben Jann, 2008; Alan S. Blinder, 1973; Ronal L. Oaxaca, 1973).

The objective is to identify the contributions of the different individual characteristics, to control the effects of the "returns effect" variables and to understand the interaction between the differences in characteristics (the explained part) and the "discrimination" (the unexplained part). (Brocherie C., 2020; Diacnou M., 2016).

Indeed, our empirical work follows on from the many empirical studies inspired by Beckerian (1976). Based on the data available from the ENPE 2015, we estimate the pay gap between women and men as a function of the following variables: sex (it is a dummy variable), marital status, age (people aged 15 years and over), age2 (the age of the individual increased squared), education, nature of the diploma, economic sector, place of work and nature of the contract. It's important to note that the selection of these controls is guided by existing variables in the database.

The dependent variable: is defined by the average monthly salary in logarithmic form.

The explanatory variables are:

Marital status: this is a categorical variable which indicates the status of the individual (single, married, divorced, widowed, undeclared). The reference modality is "Married". It is reasonable to imagine that there is a relationship between the marital status of women, participation in the labour force and the definition of wages. In this context, several studies (Duncan al., 2003; Asaad et al., 2012; Ragui Asaad, Rana Hendi and Shaimaa Yassin, 2012; Rim Mouelhi and Mohamed Goaied, 2017; Med Amara, Wajih Khalouli and Faycel Zidi, 2018) show that married women are less likely to participate in the labour force.

Education: refers to the level of education of the individual. It is a categorical variable, where the reference category is "Secondary". In the literature review, this type of variable is frequently judged to be important. Several studies, both old and recent (Al Qudsi, 1998; Gustaffsson and Kenjo in Del Boca and Wetzles, 2007; Johnes, 1999; Sackey, 2005; Agenla Cipollone and Carlo D'Ippoliti, 2009; Rim Ben Ayed and Mohamed Goaied, 2017), continue to give an important role to education in explaining gender discrimination in the labour market. The same studies show that education is a major factor influencing the position of women in the labour market.

Nature of the degree: this is a categorical variable. "Superior technician's diploma (BTS), equivalent" is the reference modality. Along this line of thought, it is interesting to observe the impact of the nature of the degree on the probability of increasing the individual's salary.

Economic sector: this is a category variable. It determines the area occupied by the individual. "Education, Health and Administration" is the reference modality. When it comes to economic sectors, women are generally directed to low-skilled sectors that only guarantee low-paying jobs and occupations, such as the education, health, and secretarial sectors (according to individual choice). Gender occupational segregation has also decreased in recent decades, despite convergence in work-related characteristics and a decrease in the size of the unexplained gap (H. Mandel, M. Semyonov, 2014; Blau and al. 2013; Cotter and al. 2004); England, 2006). In fact, Despite the tightening gender pay gap, the economic sector remains an important variable in explaining discrimination.

Place of work: This is a categorical variable. It indicates the categories of workplaces that exist in the labour market. "Public firms" is the reference modality.

Type of contract: this is a category variable that indicates the type of contract according to three methods: CDD, CDI, and no contract. The modality "No contract" is the reference modality.

4.1.1 Aggregate decomposition:

The coefficients are estimated by the aggregate wage decomposition in logarithmic form using the OLS method:

Typically, the model formula takes the following form:

$$y = \beta_0 + \beta_1 X + \delta Di,j + \varepsilon \quad \forall i,j \;\; i,j\{1 \ldots n\}$$

Where:

$$E(\varepsilon) = 0$$

Hence, $E(Y)$ can be written as:

$$E(Y) = \hat{\beta}_0 + \hat{\beta}_1 \bar{X} + \hat{\delta}_0 D_{i,j}$$

Di,j: Dummy variable.

$$\forall j \quad (j \in Goup\ "Women")\ j = 1..n$$
$$\forall i \quad (i \in Group\ "Men")\ i = 1..n$$

β_0 : the constant.

β_1 : denotes regression coefficients.

ε : a random error term.

X : the matrix of individual characteristics.

Y : the outcome variable.

4.1.2 Detailed decomposition:

Wages equations are defined as follows:

$$y = \beta_0^j + \beta_1^j X + \varepsilon_i \quad \forall j \quad (j \in Goup\ "Women")\ j = 1..n$$

$$y = \beta_0^i + \beta_1^i X + \varepsilon_i \quad \forall i \;\; (i \in Goup\ "Women")\ i = 1..n$$

Where, $\beta_0^j \# \beta_0^i$ et $\beta_1^i \# \beta_1^j$

Finally, for the case of the detailed decomposition, the coefficients are estimated by an OLS regression:

$$E(y) = \hat{\beta}_0^j + \hat{\beta}_1^j \bar{X}_j$$

$$E(y) = \hat{\beta}_0^i + \hat{\beta}_1^i \bar{X}_i$$

$$E(Y) = \hat{\beta}_0 + \hat{\delta}_0 D_{i,j} + \hat{\beta}_1 \bar{X} + \hat{\delta}_1 D_{i,j} \bar{X}$$

4.1.3 Blinder-Oaxaca decomposition:

In the context of the Blinder -Oaxaca decomposition, the outcome for women and men can be expressed as Y_h et Y_f. I will label two groups f" Female" and h "Men". In labour economic fundamentals, theory claims that the expression can be transformed into a logarithmic form. Where, X_h and X_f contain the values of explanatory variables (H). k = 1, 2..., n ; represent the individual characteristics of women and men (education, age² (age²)...)(Seyed Moaven Razavi, Habibi, 2014). Hence, the outcome for groups (f : "females" and h : "males") can be written as:

$Y_i = \beta_{ho} + \Sigma X_{ik} \beta_{hk} + \xi_i$ (eq.1) and $Y_i = \beta_{fo} + \Sigma X_{ik} \beta_{fk} + \xi_i$ (eq.2)

Hence, the mean outcome for group f and h can be expressed as[3]:

$\overline{Y_h} = \beta^*_{ho} + \Sigma \bar{X}_{ik} \beta^*_{hk} + \xi_i$ (eq.3) and $Y_f = \beta^*_{fo} + \Sigma \bar{X}_{ik} \beta^*_{fk} + \xi_i$ (eq.3')

Where, $Y_h - Y_f = \beta^*_{ho} + \Sigma \bar{X}_{ik} \beta^*_{hk} - \beta^*_{fo} + \Sigma \bar{X}_{fk} \beta^*_{fk}$ (eq.4)

Adding and subtracting ($\beta_h X_F$) to the above regression model:

$\overline{Y_h} - \overline{Y_f} = (\beta^*_{ho} - \beta^*_{fo}) + \Sigma \bar{X}_k (\beta^*_{hk} - \beta^*_{fk}) + \Sigma (\bar{X}_{hk} - \bar{X}_k) \beta^*_{hk}$ (eq.5)[4]

Threefold Decomposition:

Following (Cotton, 1988), the study adopts the threefold decomposition Blinder Oaxaca decomposition of the mean outcome difference, which incorporates the interaction component into their model and is specified thus:

$\overline{Y_h} - \overline{Y_f} = \Sigma (\bar{X}_{hk} - \bar{X}_{fk}) \beta^*_{fk} + \Sigma \bar{X}_{fk} (\beta^*_{hk} - \beta^*_{fk}) + \Sigma (\bar{X}_{hk} - \bar{X}_{fk}) (\beta^*_{ho} - \beta^*_{fo})$ (eq.6)[5]

$= \Delta \bar{X} \beta_f + \bar{X}_f \Delta \beta + \Delta \bar{X} \Delta \beta$ (eq.7)

$= H + D + I$ (eq.8)

Where: H= Endowments factor, D= Coefficients factor, I=Interaction factor, in which the interaction factor involves possible cross-level interaction between variables.

[3] Seyed Moaven Razavi, Habibi, (2014).

[4] By definition : $\Sigma (X_{HK} - X_{FK}) \beta^*_{HK}$: the explained part (H), and, $(\beta^*_{H0} - \beta^*_{F0}) + \Sigma X_{FK} (\beta^*_{HK} - \beta^*_{FK})$: the unexplained part " , attributable to discrimination (D). In fact, unexplained part is complex in their interpretation (Sophie Maillard et Béatrice Boutchenik, June 2018).

[5] Jones et Kelly (1984).

5 Results

5.1 OLS Aggregate Regression Results

First, we obtain the adjusted coefficient of determination, $R^2 = 0.3505$. That is, the model explains approximately 35.05% of the variability around the mean. Indeed, 35.05% of the salary is explained by all the explanatory variables of the model. There is, therefore, a significant impact of the explanatory variables (F-test = 0.0000 at the 5% level and a CI of 95%). The model is globally significant.

Let us now examine the coefficients of different modalities representing socio-economic characteristics. We first observe that the "higher" level of education for women and men increases the salary by 7.4%, compared to the "secondary" reference modality, which has the highest frequency. What interests us are the differences between men and women in terms of the coefficients and their significance.

However, you have to pay attention to the nature of the diploma. It is noted that higher education qualifications for all types of branches of study positively influence both sex groups from 1% to 66.6%. For example, the probability of increasing the salary of an individual who has an "Engineer" degree, compared to the benchmark "Senior technician, BTS or equivalent", is 12.11%, whereas the probability of increasing the salary for women and men who have a degree in economics, management, and law is 4.4%. In short, the results show a wage gap between women and men, not only according to the level of education but also according to the nature of the diploma (see annexe Table IV).

Then, considering the age variable, we find that the probability of increasing the salary for men and women is 1.7%. So, logically, working one more year increases the wages of women, like the wages of men for equal initial conditions "all other things being equal". Indeed, the results show that the age component has a positive influence on the study variable (the salary in logarithmic form), whilst the age-squared has a negative influence (concave impact on the gender wage gap). What tests the hypothesis? The probability that a group of individuals with a higher salary compared to others increases with age. In other words, the salary increases with age.

As for the sectors of economic activity, the results show a negative impact of the different sectors on the average wage (the coefficients appear negative) compared to the reference sector "Education, Health, Administration". Indeed, the sector effect can bias the gender pay gap, to which special attention must be paid.

For the workplace, the different modality coefficients appear insignificant and/or they are negative. It is not possible to retain this in the analysis, because there is a risk of getting snowed under.

For the nature of the contract, the yield of the CDI-type contract is 39%, for both men and women. Indeed, in terms of the percentage of explained variance, we gain about 39 points of explanation for the probability of increasing the salary, in terms of the presence or absence of a signed contract, which is not small.

Regarding the constant of the decomposition aggregated by the OLS method, it amounts to (6.099467). Indeed, the aggregate decomposition shows us that the constant is lower for women than for men. We can see, therefore, that for identical earnings there is a wage gap between the two gender groups. As found in the theoretical literature, women are discriminated against in the labour market.

5.2 OLS Detailed Regression Results

Interestingly, compared to the reference modality "secondary", obtaining a higher education improves wages for women by 6%. Accordingly, the likelihood that female employees will earn more money rises, as they gain more education, invest more in their human capital, or finish a longer course of study. The corresponding coefficient's sign is negative for men (see Appendix Table VI). We clearly see the negative association between a higher level of education and the likelihood of having greater pay. More specifically, the likelihood of pay growth is negatively influenced by higher education. In conclusion, a better wage is not always guaranteed, even with a high level of education.

Looking at the nature of the degree variable, the result shows that the relationship between the education field and employment is crucial. In fact, the results drawn from a number of different modalities, show that the likelihood of a woman's wage increasing with a type of degree traditionally reserved for women, is higher than the likelihood of a man's wage increasing with a type of degree traditionally reserved for men, and vice versa. For example, the salary of women increases by 10.8% when they hold an "Engineering" degree, whilst the salary for men increases by 14% compared to the reference degree of " Higher technician, equivalent BTS " (see Appendix Tables V et VI). This finding is significant since it highlights a sort of degree-level discrimination.

The increase in salaries with age is then seen to be 0.9% for men and 1.34% for women. As a result, women typically earn more money as they get older. As a result, men are more likely to receive higher pay than younger women.

The various modalities of the economic sector variable have a negative sign on women. This is consistent with what was predicted. The “economic sector” variable has a damaging effect on the high probability of raising women's wages. According to the other modalities, the economic sector variable for men has a negative sign (statistically insignificant at the 5% level). This is not what was predicted, as it was anticipated that this variable would have a strong impact on the likelihood of an increase in the average men's wage. In conclusion, the various sectors have a weak negative correlation with both men's and women's probability of enduring wage increases (see Appendix Tables V and VI).

According to the contract's nature, compared to the "no contract" reference modality, a permanent contract has a 30% chance of increasing men's wages and a 45% chance of increasing women's wages.

5.3 Blinder-Oaxaca (1973)

The study results of the threefold decomposition of the gender wage gap, which was inspired by the Oaxaca-Blinder (1973) method, are shown in Tables II and III.

Based on the aggregate regression results, we assume that men's average log salary is higher than for women. Table II provides confirmation of the findings. It reveals that the "explained part" of the overall gap, which is related to differences in individual characteristics, is -20.96%. The unexplained component is equal to 132.11%. However, it is interesting to note that discrimination is attributed to "The unexplained part", whereas 11.15% of the overall difference between men and women is explained by the interaction of the differences in endowment and the differences in coefficients (they have the same characteristics). In conclusion, our findings confirm the hypothesis of the existence of discrimination against women in the Tunisian labour market.

Table II: Blinder-Oaxaca decomposition estimates

	Coef.	Std. Err.	z	P>z	[95% Conf. Interval]
Males	6.46673	.007277	888.66	0.000**	[6.452467 ; 6.480992]
Females	6.367767	.0085298	746.53	0.000**	[6.351049 ; 6.384485]
Difference	.0989628 (100%)	.0112122	8.83	0.000**	[.0769873 ; .1209382]
Endowments (H)	-.0207417 (-20.96%)	.020239	-1.02	0.305	[-.0604095 ; .0189261]
Coefficients (D)	.1307383 (132.11%)	.0104432	12.52	0.000**	[.1102699 ; .1512066]
Interaction (I)	-.0110338 (-11.15%)	.0198737	-0.56	0.579	[-.0499855 ; .0279179]

Source: Authors' calculations using data from INS -ENPE-2015

*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

Interestingly, we propose estimating a model that includes the exponential form, to translate the data back to the original scale (the Tunisian dinar in our case). For men and women, respectively, the geometric means of the wages are 643.3 TND and 582.7 TND. This represents a gap of 10.4% but 13.9% are unexplained by objective variables.

Table III: Blinder-Oaxaca decomposition estimates (TND)

	exp(b)	Std. Err.	z	P>z	[95% Conf. Interval]
Males	643.3763	4.681835	888.66	0.000**	[634.2652 ; 652.6183]
Females	582.7551	4.970803	746.53	0.000**	[573.0935 ; 592.5796]
Difference	1.104025	.0123785	8.83	0.000**	[1.080028 ; 1.128555]
Endowments (H)	.9794719	.0198236	-1.02	0.305	[.941379 ; 1.019106]
Coefficients (D)	1.139669	.0119018	12.52	0.000**	[1.116579 ; 1.163237]
Interaction (I)	.9890268	.0196556	-0.56	0.579	[.9512432 ; 1.028311]

Source: Authors' calculations using data from INS -ENPE-2015

*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

According to the threefold decomposition of the wage gap determinants (see Appendix Table VII), the variables that contribute the most to the wage difference are: age (1019.36%), economic sector (537%), type of contract (239.49%) and education level (166%). However, there is a bias in the wage disparity between men and women in the labour market, due to individual characteristics.

According to the examination of the coefficients, there is a negative wage disparity based on education level. The wage disparity by nature of degree has a negative and significant effect on women. Those results confirm the hypothesis that women with higher education typically earn less money than males in the Tunisian labour market. Interestingly, the findings demonstrate that the type of degree adds to pay discrimination against women in the labour market.

Table VIII reveals the impact of the economic sector variable on the gender pay gap. The results show that the gender pay gap depends on the economic sector for 537% of the global difference attributed to the studied variable. Compared to men, women's sector occupations have a negative impact on the employees' (females) likelihood of having a higher salary. This leads to the wage disparity between women and men in Tunisia. Moreover, the findings support the need to increase the number of years of experience for women, in order to receive the same wage as the oldest men. As a result, women typically earn more money as they get older.

A particularly important focus of the various modalities of the two variables "nature of degree" and " economic sector " explain why the wage gap between men and women is more prevalent for those with the highest levels of education. Paradoxically, women are more likely to obtain the lowest-paying jobs and/or economic sectors. Also, in the context of the Tunisian labour market and the education system, a higher degree of education or the particular nature of a degree does not automatically translate into higher wages for women. Our results are in line with the neoclassical theory that explains where firms strive to optimise revenues by hiring based on an individual's characteristics. According to this goal, and when physical power is required for occupations, males are favoured and paid more than females (Mohamed Amara, Wajih Khalouli and Faycel Zidi, 2018; Jennings, 1999; Becker 1976; Mincer, 1974).

This was inspired by the Oaxaca-Blinder (1973) method and the result reveals that the gender wage gap increases in favour of women by 0.49%, when compared to married men (see Appendix Table VIII). Indeed, married status contributes to 33.37% of the overall difference.

At the 5% level, the variable place of work becomes significant. In fact, it represents about 46.89% of the overall gap. According to this, there is more often women's wage discrimination in the public sector than the private sector.

The findings also indicate a smaller income disparity in favour of women in "private" workplaces. For instance, women are paid more than men in "mixed private firms" than in "public firms". In conclusion, we have observed a decrease in discrimination in private firms. However, there are disparities in gaining access to well-paid positions within "private firms." Furthermore, the wage pay gap between men and women grows with age (0.7%). In conclusion, according to the gap attributable to individual characteristics, the wage pay gap is two-fold significant.

According to the contract's nature, we discovered that the nature of the contract positively affects men's wages. Yet, the coefficients associated with the variable's different categories were significant and negatively affected women's wages. In fact, in the Tunisian labour market, women tend not to sign a fixed-term contract "CDD". Interestingly, the employment contract type represents about 239.49% of the global difference and is a negative indicator. It illustrates how wage discrimination between women and men in the Tunisian labour market is a result of the existence or non-existence of the contract.

At the individual level, the empirical evidence analysed in this paper suggests that, despite the remarkable advancement in women's education, skillful integration and wage increases, wages in Tunisia are still higher for men than for women.

6 Conclusion

In this paper, we have measured the wage gap between men and women using data from the 2015 Employment Survey. A Blinder-Oaxaca model of gender wage discrimination was estimated for women and men using individual characteristics (level of education, type of degree, type of contract, economic sector, etc.). The study result was decomposed into explained and unexplained "discrimination" and interaction components. According to our estimation, the gender wage gap is about 10.4%, of which 14% is significantly attributed to discrimination.

The empirical estimation found that the wage gap is explained by the overrepresentation of women in occupations and the economic sector (low-skilled or intermediate) traditionally attributed to women, which partly justifies the wage gap between women and men. This is explained by the occupational segregation and dogmatic division of economic sector. In this context, we conclude that the cultural factor is one of the most significant factors accounting for the pay gap and occupation segregation between women and men. Overall, it conveys a complete picture of the cultural background and defines a set of personal choices related to education, type of sector and quality of work performed in the labour market. Indeed, this seems problematic. The major force creating this gap was the important integration of women to occupations that were traditionally present. In other words, the relationship between degree type and job type (skilled or unskilled) may be a reason for a wage gap between the two groups. This increases the likelihood that female wages are, on average, lower than male wages. As a result, wage inequalities between women and men are justified by age (1019.36%), economic sector (537%), type of contract (239.49%) and level of education (166%). Ironically, the results affirm that women need to acquire more experience in the labour market before they can access a well-paid job, especially in heavy sectors that have many prospects. This explains the precarious situation of women in the Tunisian labour market. Also, the descriptive analysis reveals that the gender wage gap is not necessarily explained by the level of education, but rather by the complexity of the Tunisian socio-economic process, in terms of matching job quality with skill sets. Indeed, the present study provides strong evidence that the level of education does not guarantee a qualified job and, at an equivalent level of education, a comparable average salary equivalent to that of men. Nevertheless, the regular increase in number of women represented at the level of higher education in Tunisia could change this type of observation.

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8 Annexes:

Table I: Descriptive statistics

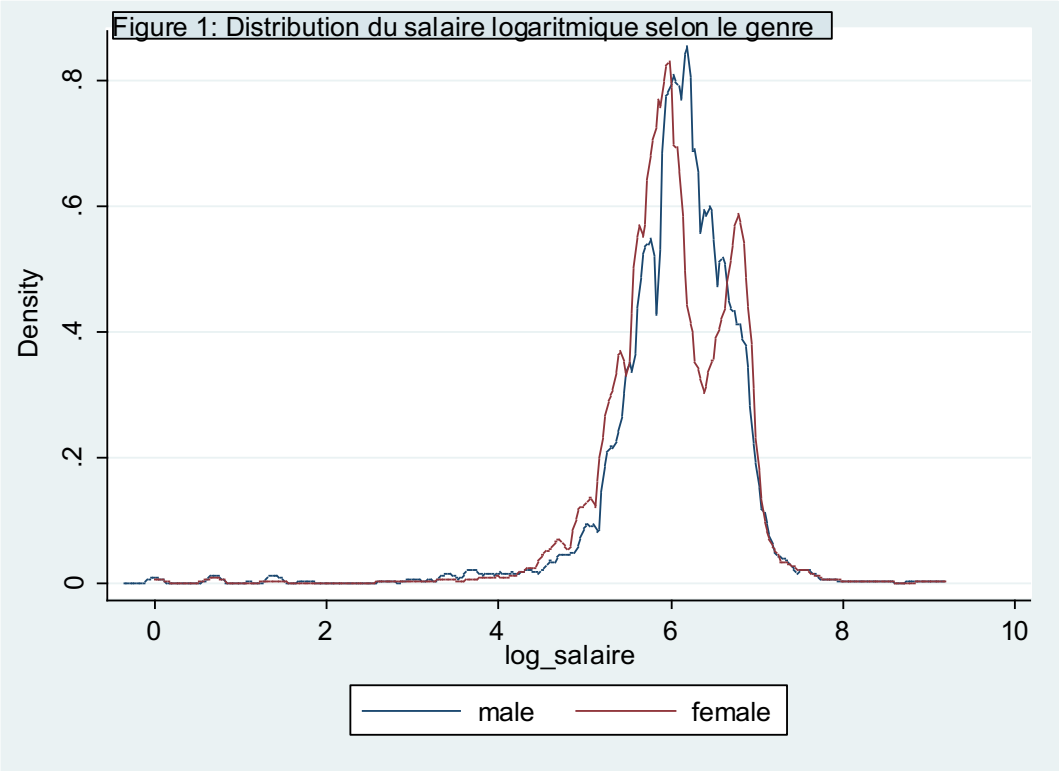
Variable	Males				Females			
	Mean	Std.Dev	Min	Max	Mean	Std.Dev	Min	Max
Age	41	12.254	15	105	37	11	15	94
Age square	1836.952	1066.348	225	11025	1510.242	898.3355	225	8836
Wage	522.393	406.859	0	9800	508.648	414.019	0	9999
Marital status (i)								
Single	0.280	0.499	0	1	0.350	0.477	0	1
Married	0.7099	0.454	0	1	0.588	0.492	0	1
Widowed	0.005	0.070	0	1	0.037	0.189	0	1
Divorced	0.005	0.0714	0	1	0.024	0.154	0	1
Education (i)								
Non	0.087	0.281	0	1	0.112	0.516	0	1
Primary	0.383	0.486	0	1	0.219	0.414	0	1
Secondary (as reference)	0.405	0.491	0	1	0.369	0.483	0	1
University	0.123	0.328	0	1	0.295	0.456	0	1
Undeclared	0.002	0.044	0	1	0.003	0.055	0	1
Nature of the degree (i)								
Diploma before baccalaureate	0.035	0.184	0	1	0.018	0.132	0	1
Bachelor's degree equivalent	0.140	0.347	0	1	0.121	0.326	0	1
Higher technician, equivalent BTS	0.114	0.318	0	1	0.168	0.374	0	1
Master of Arts and Social Science (Maitrise)	0.0598	0.237	0	1	0.133	0.3998	0	1
Master's degree in economics, management and law (Maitrise)	0.079	0.269	0	1	0.102	0.303	0	1
Master of exact science (Maitrisse)	0.052	0.222	0	1	0.050	0.218	0	1
Engineering degree	0.072	0.258	0	1	0.096	0.294	0	1
Other masters (Maitrises)	0.054	0.226	0	1	0.024	0.154	0	1
Doctor or pharmacist	0.017	0.129	0	1	0.025	0.156	0	1
Magester or similar	0.027	0.163	0	1	0.037	0.188	0	1
DOCTORATE	0.011	0.106	0	1	0.011	0.105	0	1
CAP	0.097	0.296	0	1	0.0399	0.196	0	1
BTP	0.107	0.309	0	1	0.08	0.271	0	1
BTS	0.027	0.162	0	1	0.027	0.163	0	1
Other diploma	0.107	0.309	0	1	0.068	0.252	0	1
Economic sector **(i)**								
Agriculture and fishing	0.204	0.403	0	1	0.115	0.319	0	1
Food industry	0.022	0.145	0	1	0.021	0.145	0	1
Construction	0.015	0.120	0	1	0.003	0.062	0	1
Electricity	0.031	0.172	0	1	0.063	0.242	0	1

Chemical industry	0.018	0.087	0	1	0.008	0.092	0	1
Textile	0,019	0,137	0	1	0,174	0,379	0	1
Manufacturing	0.024	0.152	0	1	0.011	0.104	0	1
Mining	0.003	0.057	0	1	0.0007	0.026	0	1
EXTR.RAF.PET GAZ	0.004	0.065	0	1	0.0014	0.038	0	1
Electricity supply	0.004	0.063	0	1	0.002	0.039	0	1
Water supply	0.002	0.050	0	1	0.001	0.031	0	1
B.T.P	0.182	0.385	0	1	0.008	0.087	0	1
Trade	0.139	0.346	0	1	0.119	0.324	0	1
Transport	0.064	0.246	0	1	0.020	0.140	0	1
Communication								
Hotels and restaurant	0.033	0.179	0	1	0.015	0.120	0	1
Financial intermediation (banks)	0.005	0.073	0	1	0.010	0.100	0	1
ACT.IMM.REPAR.SE	0.039	0.196	0	1	0.041	0.198	0	1
Social services	0.024	0.154	0	1	0.075	0.264	0	1
Education, Health and Administration	0.175	0.379	0	1	0.3099	0.462	0	1
Place of work (i)								
Public firms	Réf							
Public firms	0.031	0.174	0	1	0.017	0.129	0	1
Private firms (Tunisian)	0.114	0.318	0	1	0.209	0.407	0	1
Private firms (Mixed)	0.032	0.176	0	1	0.1240	0.329	0	1
Private local	0.183	0.387	0	1	0.170	0.376	0	1
Accommodation	0.007	0.082	0	1	0.037	0.188	0	1
Mobile	0.063	0.243	0	1	0.005	0.069	0	1
Agriculture exploitation	0.168	0.374	0	1	0.111	0.314	0	1
Chantier Batiment	0.179	0.384	0	1	0.006	0.079	0	1
Autre Chantier	0.012	0.1097	0	1	0.004	0.062	0	1
Autre Lieu de travail	0.021	0.142	0	1	0.004	0.065	0	1
Type of contract (i)								
CDD	Réf							
CDI	0.381	0.486	0	1	0.562	0.496	0	1
None	0.524	0.499	0	1	0.279	0.449	0	1

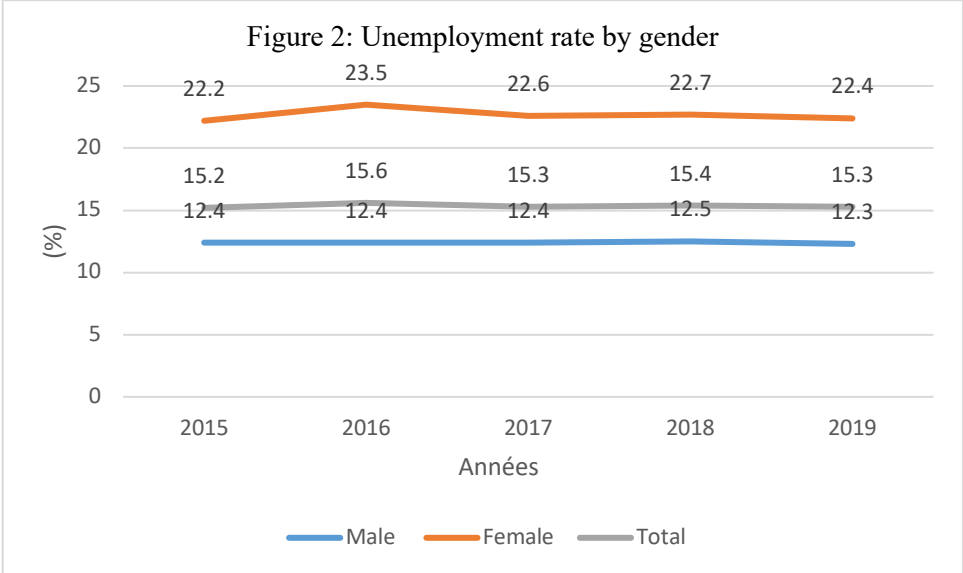
Source: Authors' calculations using data from INS -ENPE-2015

note: (i) = Categorial variable /* the employees as reference

Figure 1: Kernel density estimates of the wage distribution of the employees (by gender)

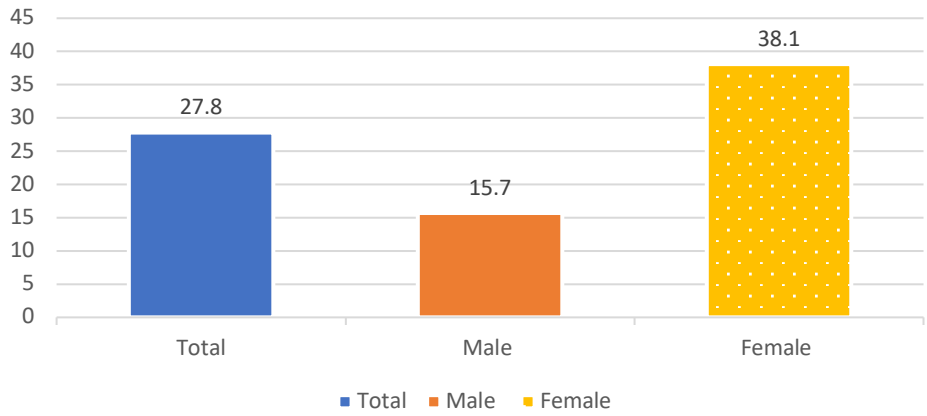


Source: Authors' calculations using data from INS -ENPE-2015



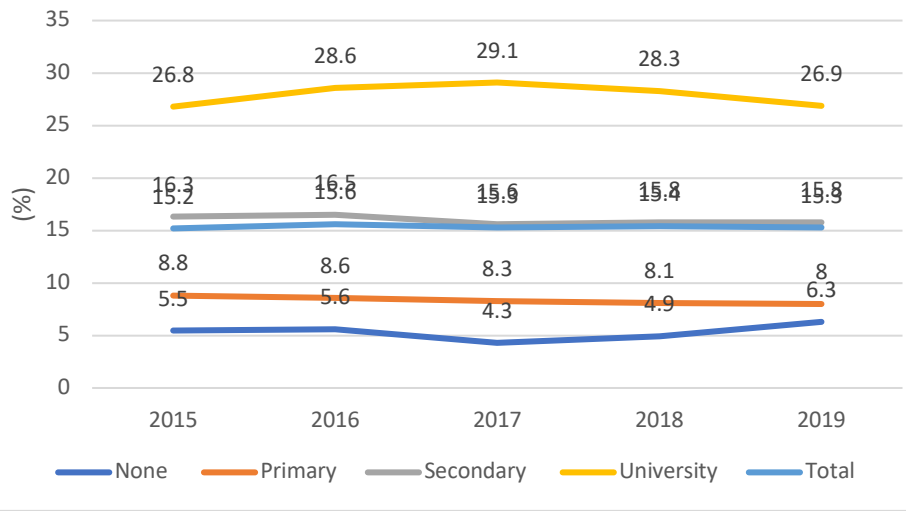
Source: Authors' calculations using data from INS -ENPE-2015

Figure 3: Unemployement rate of educated (gender distribution), 2019
(%)



Source: Authors' calculations using data from INS -ENPE-2015

Figure 4: Unemployment rate by education level



Source: Authors' calculations using data from INS -ENPE-2015

Table IV: Aggregated OLS model estimation

	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Single	-.1579109	.0127542	-12.38	0.000**	[-.1829105 ; -.1329114]
Widowed	-.0099112	.0337713	-0.29	0.769	[-.0761063 ; .0562838]
Divorced	-.0296621	.0322851	-0.92	0.358	[-.0929441 ; .03362]
Primary	-.0796782	.0233554	-3.41	0.001**	[-.1254572 ; -.0338992]
University	.0738759	.0198391	3.72	0.000**	[.0349892 ; .1127625]
Before baccalaureate	-.1908239	.0364034	-5.24	0.000**	[-.2621781 ; -.1194696]
Equivalent baccalaureate	-.0175721	.0229912	-0.76	0.445	[-.062637 ; .0274929]
Master of Arts and Social Science (maitrise)	.103561	.0193152	5.36	0.000**	[.0657013 ; .1414207]
Master's degree in economics, management and law (maitrise)	.0437065	.0227915	1.92	0.055**	[-.0009671 ; .0883801]
Mastery of exact science (maitrise)	.0866133	.0239028	3.62	0.000**	[.0397614 ; .1334651]
Engineer	.1156326	.0193557	5.97	0.000**	[.0776935 ; .1535717]
Other masters (maitrises)	.3795863	.0294726	12.88	0.000**	[.3218171 ; .4373555]
Doctor or pharmacist	.4694814	.0535238	8.77	0.000**	[.3645694 ; .5743934]
Magester or similar	.286228	.0312639	9.16	0.000**	[.2249477 ; .3475082]
Doctorate	.6658165	.030728	21.67	0.000**	[.6055866 ; .7260465]
CAP	-.1282319	.0305454	-4.20	0.000**	[-.188104 ; -.0683598]
BTP	-.1108323	.0279011	-3.97	0.000**	[-.1655213 ; -.0561433]
BTS	-.0368363	.0318319	-1.16	0.247	[-.09923 ; .0255575]
Other diploma	-.1409687	.0280076	-5.03	0.000**	[-.1958663 ; -.086071]
Age	.0169515	.0038181	4.44	0.000**	[.0094676 ; .0244354]
Age square	-.000091	.000046	-1.98	0.048	[-.0001812 ; -8.05e-07]
Agriculture and fishing	-.7105859	.2321524	-3.06	0.002**	[-1.165628 ; -.2555441]
Food industry	-.4599532	.2288138	-2.01	0.044**	[-.908451 ; -.0114554]
Indust MAT cons ceramique	-.4833794	.2308908	-2.09	0.036**	[-.9359485 ; -.0308104]
Electricity industry	-.5326086	.227799	-2.34	0.019**	[-.9791174 ; -.0860998]
Chemical industry	-.6075435	.236865	-2.56	0.010**	[-1.071822 ; -.1432646]

Textile	-.6314081	.2281901	-2.77	0.006**	[-1.078683 ; -.1841328]
Manufacturing industry	-.4527601	.2298163	-1.97	0.049**	[-.9032229 ; -.0022972]
Mining	-.2967252	.2309379	-1.28	0.199	[-.7493866 ; .1559362]
Extra raf pet gaz	-.2876353	.2364433	-1.22	0.224	[-.7510878 ; .1758172]
Prod dis electr	-.3490462	.2342285	-1.49	0.136	[-.8081575 ; .1100652]
Water distribution, production	-.4058203	.2409424	-1.68	0.092*	[-.8780915 ; .0664509]
BTP	-.5721536	.23099	-2.48	0.013**	[-1.024917 ; -.1193901]
Trade	-.5422957	.2280272	-2.38	0.017**	[-.9892517 ; -.0953396]
Transport	-.3787386	.2287831	-1.66	0.098 *	[-.8271762 ; .0696991]
Communication	-.4306504	.2294664	-1.88	0.061*	[-.8804275 ; .0191267]
Hotels and restaurants	-.1791107	.2297468	-0.78	0.436	[-.6294373 ; .2712159]
Financial intermediation (banks)	-.4442043	.227764	-1.95	0.051*	[-.8906445 ; .002236]
Act imm repar se	-.7450725	.2276682	-3.27	0.001**	[-1.191325 ; -.2988201]
Social services	-.4330809	.2266359	-1.91	0.056*	[-.8773098 ; .0111481]
Public firms	.0263656	.0381935	0.69	0.490	[-.0484975 ; .1012288]
Private firms (Tunisian)	.0115372	.0250575	0.46	0.645	[-.037578 ; .0606525]
Private firms (mixed)	.0654921	.027719	2.36	0.018 **	[.0111601 ; .1198241]
Private local	-.3367618	.0253223	-13.30	0.000**	[-.3863962 ; -.2871275]
Accommodation	-.2822594	.1202768	-2.35	0.019**	[-.5180139 ; -.0465049]
Mobile	-.2340415	.1297324	-1.80	0.071*	[-.4883299 ; .020247]
Agriculture exploitation	-.3181809	.1157911	-2.75	0.006**	[-.5451429 ; -.0912189]
Chantier batiment	-.0124285	.0540107	-0.23	0.818	[-.1182949 ; .0934379]
CDD	-.0334987	.0263023	-1.27	0.203	[-.0850539 ; .0180565]
CDI	.3897789	.0263982	14.77	0.000**	[.3380358 ; .4415219]
Constant	6.099467	.2395399	25.46	0.000**	[5.629944 ; 6.568989]

Source: Authors' calculations using data from INS -ENPE-2015

*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

Table V: Estimates of wage equation for females (OLS)

	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Single	-.1790303	.0179369	-9.98	0.000 **	[-.214192 -.1438687]
Widowed	-.0037627	.0389821	-0.10	0.923	[-.0801793 ; .0726539]
Divorced	.0020062	.029701	0.07	0.946	[-.0562166 ; .060229]
Primary	-.0635095	.041682	-1.52	0.128	[-.1452186 ; .0181997]
University	.0603645	.0306496	1.97	0.049**	[.0002821 ; .1204468]
Before baccalaureate	-.1910227	.0502355	-3.80	0.000 **	[-.2894992 ; -.0925462]
Equivalent baccalaureate	-.0352079	.0340433	-1.03	0.301	[-.1019429 ; .0315271]
Master of Arts and Social Science (maitrise)	.1217511	.025048	4.86	0.000 **	[.0726496 ; .1708527]
Master's degree in economics, management and law (maitrise)	.0473137	.0282716	1.67	0.094*	[-.008107 ; .1027344]
Master of exact science (maitrise)	.0856117	.0338942	2.53	0.012 **	[.019169 ; .1520545]
Engineer	.1076239	.0270585	3.98	0.000 **	[.0545812 ; .1606666]
Oher masters (maitrises)	.3605782	.0444114	8.12	0.000 **	[.2735186 ; .4476379]
Doctor or pharmacist	.4956881	.0664571	7.46	0.000 **	[.3654124 ; .6259638]
Magester or similar	.2882716	.0451111	6.39	0.000 **	[.1998404 ; .3767028]
Doctorate	.6953316	.0437744	15.88	0.000 **	[.6095208 ; .7811425]
CAP	-.1327395	.047389	-2.80	0.005 **	[-.2256361 ; -.039843]
BTP	-.1305709	.041034	-3.18	0.001 **	[-.2110097 ; -.050132]
BTS	-.0676728	.0474457	-1.43	0.154	[-.1606804 ; .0253348]
Other diploma	-.1814335	.041149	-4.41	0.000 **	[-.2620978 ; -.1007692]
Age	.0134485	.005952	2.26	0.024**	[.0017807 ; .0251162]

Age square	-.0000327	.000074	-0.44	0.659	[-.0001777 ; .0001123]
Agrigulture and fishing	-1.385546	.1100047	-12.60	0.000**	[-1.601187 ; -1.169904]
Food industry	-1.022232	.0684523	-14.93	0.000**	[-1.156418 ; -.8880447]
Construction	-.9926319	.0935242	-10.61	0.000**	[-1.175967 ; -.8092966]
Electricity	-1.127733	.0598897	-18.83	0.000**	[-1.245135 ; -1.010331]
Chemical industry	-1.035359	.0986335	-10.50	0.000**	[-1.22871 ; -.8420077]
Textile	-1.12233	.0593943	-18.90	0.000**	[-1.238761 ; -1.0059]
Manufacturing	-1.006083	.0831542	-12.10	0.000**	[-1.16909 ; -.8430757]
Mining	-.8997333	.0652975	-13.78	0.000**	[-1.027736 ; -.7717307]
Extra raf pet gaz	-.8955001	.0894705	-10.01	0.000**	[-1.070889 ; -.7201114]
Prod dis electr	-.7210012	.093975	-7.67	0.000**	[-.9052202 ; -.5367823]
Prod dis water	-.9712928	.1548354	-6.27	0.000**	[-1.274816 ; -.6677694]
BTP	-1.136009	.1100471	-10.32	0.000**	[-1.351734 ; -.9202836]
Trade	-1.046275	.0583019	-17.95	0.000**	[-1.160564 ; -.9319862]
Transport	-.958261	.0826334	-11.60	0.000**	[-1.120247 ; -.7962749]
Communication	-.8859475	.0741406	-11.95	0.000**	[-1.031285 ; -.7406099]
Hotels and restaurants	-.6996846	.0779701	-8.97	0.000**	[-.8525292 ; -.5468401]
Financial intermediation (banks)	-.9855052	.0586212	-16.81	0.000**	[-1.10042 ; -.8705901]
Act imm repar se	-1.226282	.0496338	-24.71	0.000**	[-1.323579 ; -1.128985]
Social services	-.9184509	.0428936	-21.41	0.000**	[-1.002535 ; -.8343667]

Public firms	.0363072	.0749857	0.48	0.628	[-.1106871 ; .1833014]
Private firms (Tunisian)	.0065787	.0350663	0.19	0.851	[-.0621617 ; .0753192]
Private firms (mixed)	.1035023	.0390324	2.65	0.008 **	[.0269871 ; .1800174]
Private local	-.3282766	.0329922	-9.95	0.000 **	[-.3929512 ; -.263602]
Accommodation	-.2415089	.1672709	-1.44	0.149	[-.5694097 ; .0863919]
Mobile	-.1238396	.3484249	-0.36	0.722	[-.8068561 ; .5591769]
Agriculture exploitation	-.4256101	.3769289	-1.13	0.259	[-1.164503 ; .3132827]
Construction site	-.166861	.2745083	-0.61	0.543	[-.7049789 ; .371257]
CDD	-.0117198	.0409493	-0.29	0.775	[-.0919926 ; .0685529]
CDI	.4479884	.042456	10.55	0.000 **	[.3647621 ; .5312148]
Constant	6.575099	.1337543	49.16	0.000 **	[6.3129 ; 6.837297]

Source: Authors' calculations using data from INS -ENPE-2015

*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

Table VI: Estimates of wage equation for Males (OLS)

	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]
Single	-.1416291	.0175606	-8.07	0.000**	[-.1760513 ; -.1072069]
Widowed	.0259136	.0716338	0.36	0.718	[-.1145025 ; .1663297]
Divorced	-.1069998	.1264697	-0.85	0.398	[-.3549049 ; .1409053]
Primary	-.1068612	.0277562	-3.85	0.000**	[-.1612688 ; -.0524536]
University	.104855	.0216191	4.85	0.000**	.[0624775 ;.1472326]
Before baccalaureate	-.1985895	.0464782	-4.27	0.000**	[-.2896958 ; -.1074832]
Equivalent baccalaureate	-.0039957	.0246621	-0.16	0.871	[-.0523383 ; .0443469]
Master of Arts and Social Science (maitrise)	.09592	.0279728	3.43	0.001**	[.0410879 ; .1507521]
Master's degree in economics, management and law(maitrise)	.0703863	.0370687	1.90	0.058*	[-.0022757 ; .1430482]

Master of exact science(maitrise)	.0862458	.0296873	2.91	0.004**	[.028053 ; .1444386]
Engineer	.1378597	.0222956	6.18	0.000**	[.0941559 ; .1815634]
Other masters (maitrises)	.358835	.0375543	9.56	0.000**	[.2852212 ; .4324488]
Doctor or pharmacist	.4114968	.0925773	4.44	0.000**	[.2300274 ; .5929662]
Magester or similar	.2961094	.0322105	9.19	0.000**	[.2329706 ; .3592483]
Doctorate	.6266638	.0416321	15.05	0.000**	[.5450568 ; .7082709]
CAP	-.1685793	.0354344	-4.76	0.000**	[-.2380376 ; -.099121]
BTP	-.0945021	.0325433	-2.90	0.004**	[-.1582933 ; -.0307109]
BTS	-.0017649	.0351815	-0.05	0.960	[-.0707274 , .0671977]
Other diploma	-.1209515	.0333014	-3.63	0.000**	[-.1862287 ; -.0556743]
Age	.008673	.0049019	1.77	0.077*	[-.0009356 ; .0182817]
Age square	-.0000249	.0000575	-0.43	0.665	[-.0001376 ; .0000878]
Agriculture and fishing	-.4095322	.2791304	-1.47	0.142	[-.956682 ; .1376177]
Food industry	-.2251113	.2754816	-0.82	0.414	[-.7651087 ; .3148861]
Indust MAT cons ceramique	-.2931076	.2776639	-1.06	0.291	[-.8373828 ; .2511677]
Electricity industry	-.2504926	.2742327	-0.91	0.361	[-.7880419 ; .2870568]
Chemical industry	-.4406777	.2922238	-1.51	0.132	[-1.013493 ; .1321378]
Textile	-.3020385	.2756544	-1.10	0.273	[-.8423747 ; .2382977]
Manufacturing	-.2397652	.2765561	-0.87	0.386	[-.7818688 ; .3023384]
Mining	-.0620155	.2768323	-0.22	0.823	[-.6046605 ; .4806296]
Extra raf pet gaz	-.0611452	.2862655	-0.21	0.831	[-.6222813 ; .4999908]
Prod dis electr	-.1450845	.282198	-0.51	0.607	[-.6982474 ; .4080784]
Prod dis water	-.095415	.2879342	-0.33	0.740	[-.6598219 ; .468992]
BTP	-.3413446	.2777277	-1.23	0.219	[-.885745 ; .2030557]
Trade	-.3009446	.2746917	-1.10	0.273	[-.8393936 ; .2375045]
Transport	-.0864557	.2736974	-0.32	0.752	[-.6229558 ; .4500443]
Communication	-.2885718	.2765615	-1.04	0.297	[-.8306861 ; .2535425]
Hotels and restaurants	.0930038	.2746982	0.34	.735	[0-.4454581 ; .6314657]
Financial intermediation (banks)	-.1552524	.273835	-0.57	0.571	[-.6920222 ; .3815174]

Act imm repar se	-.4127397	.2768312	-1.49	0.136	[-.9553826 ; .1299032]
Social services	-.1629704	.2730361	-0.60	0.551	[-.6981742 ; .3722335]
Public firms	.0335689	.0385533	0.87	0.384	[-.0420032 ; .1091409]
Private firms (Tunisian)	.0468922	.0330052	1.42	0.155	[-.0178043 ; .1115887]
Private firms (mixed)	.0943947	.037695	2.50	0.012**	[.0205052 ; .1682842]
Private local	-.2814269	.0382769	-7.35	0.000**	[-.356457 ; -.2063968]
Accommodation	-.3416421	.1720297	-1.99	0.047**	[-.6788536 ; -.0044305]
Mobile	-.3369184	.1372348	-2.46	0.014**	[-.6059253 ; -.0679115]
Agriculture exploitation	-.3533403	.1083334	-3.26	0.001**	[-.5656949 ; -.1409857]
Construction site	-.0857014	.0637047	-1.35	0.179	[-.2105749 ; .0391721]
CDD	.013067	.0306822	0.43	0.670	[-.047076 ; .07321]
CDI	.2987602	.0284502	10.50	0.000**	[.2429922 ; .3545282]
Constant	6.139701	.2890767	21.24	0.000**	[5.573055 ; 6.706348]

Source: Authors' calculations using data from INS -ENPE-2015

Niveau de significativité : ***significatif à 1%(p<0.01) /** significatif à 5%(p<0.05) /* significatif à 10%

Table VII: Oaxaca-Blinder decomposition

	Différences de caractéristiques	Différences de Coefficients	Interaction	Différence Totale 0 .0989628 (100%)
Marital status	-.0014963	-.0300329	-.0014963	-0.0330255 (-33.37%)
Education	-.0384576**	.2139238	-.0110887	0.1643775 (166%)
Diploma category	-.0004904	.0132556	.0020693	0.0148345 (14.99%)
Age	.1508846**	-.9847245**	-.074946**	-1.0087859 (-1019.36%)
Age square	-.1099946**	.374353**	.0608753**	0.3252337 (328.64%)
Economic sector	-.0003136	.0536684	-.0048143	0.5315561

				(537%)
Place of work	-.0742924**	.0917196**	.0289861**	0.0464133 (46.89%)
Type of Contract	.0094006**	-.2269987**	-.013411**	-0.2370091 (-239.49%)
Constant		.6707139**		

Source: Authors' calculations using data from INS -ENPE-2015
*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

Table VIII: Oaxaca-Blinder detailed decomposition

	Endowments (H)	Coefficients (D)	Interaction (I)
Single	.0049784**	.0125437	-.00104
Widowed	.0000326	.0003315	-.000257
Divorced	-.0000291	-.0021308	.0015833
Primary	-.0028103	-.0009503	-.0019183
University	-.0087407**	.0312962	-.0064422
Before baccalaureate	-.0031248**	-.000113	-.0001238
Equivalent baccalaureate	-.0006976	.0040007	.0006184
Master of Arts and Social Science (matrise)	-.009433**	-.0039277	.0020013
Master's degree in economics, management and law(maitrise)	-.0009281	.0020908	-.0004526
Master of exact science (maitrise)	.000673	.0000363	4.98e-06
Engineer	-.0020463**	.0031452	-.0005749
Other masters (maitrise)	.0091135**	-.0000341	-.0000441
Doctor or pharmacist	-.0023879**	-.001105	.0004056
Magester or similar	-.0021722**	.0002605	-.0000591
Doctorate	.0007788	-.0007191	-.0000769
CAP	-.0072246**	-.001231	-.0019507
BTP	-.0025886**	.0028807	.0007151
BTS	-.0000685	.0018497	.0000667
Other diploma	-.0068562**	.0032006	.0022855
Age	.037077**	-.1729855	-.0131657
Age square	-.0074018	.0107957	.0017555

Agriculture and fishing	-.0317589**	.0069501**	.0223718**
Food industry	-.0135207**	.0090152**	.0105432**
Indust MAT cons ceramique	-.0121866**	.0019534**	.0085881**
Electricity	-.0186221**	.0357657*	.0144858**
Chemical industry	-.0049711**	.0063935**	.0028553
Textile	.045234**	.0530292**	-.0330607**
Manufacturing	-.015567**	.0052429	.0118571**
Mining	-.0044421**	.0002339**	.0041359**
Extra raf pet gaz	-.0084949**	.0025629*	.0079149**
Prod dis electr	-.0051914**	.0015278**	.0041468*
Prod dis water	-.0023551**	.0013452**	.0021237**
BTP	-.0842751**	.0039944**	.0589523**
Trade	-.0060782**	.0450612**	.0043299
Transport	-.0251624	.0219108**	.0228922**
Communication	-.0232739**	.0045041**	.0156931**
Hotels and restaurants	.0009385	.0123961**	-.0010633
Financial intermediation (banks)	.003505	.0449788**	-.0029529
Act imm repar se	.0454576**	.04839**	-.0301576**
Social services	.14682**	.4688789	-.1207682**
Public firms	.001252	-.0000593	-.0000944
Private firms (Tunisian)	.0002594	.0066701	.0015896
Private firms (mixed)	-.0009664*	-.0007185	.000085
Private local	.0076341**	.0050042	-.0010895
Accommodation	-.0000516	-.0001818	-.0000214
Mobile	-.0006473	-.0000595	-.0011137
Agriculture exploitation	-.003316	.0001211	.0005631
Construction site	-.011222	.0001473	.0054583
CDD	.0007061	.0041704	-.0014934
CDI	.0034107	-.1123275**	-.0011361
Constant		-.4353975	

Source: Authors' calculations using data from INS -ENPE-2015

*** 1%(p<0.01) /** (p<0.05) /* 10% (p<0 .1)

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