

Wage Inequality between Men and Women in Côte D'Ivoire: An Oaxaca-Blinder Decomposition Method

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Abstract

The purpose of this study is to analyze the wage gap between men and women in Côte d'Ivoire. More specifically, it aims to assess the main aspects of gender inequality in the functioning of the labor market in Côte d'Ivoire. The factors underlying the wage gap between men and women are examined empirically using the Oaxaca-Blinder decomposition method. The data used are from the 2016 National Survey on the Situation of Employment and the Informal Sector (ENSESI) among households. The results of the study show that, more 74.16% of the total wage gap remains unexplained by objective factors. In addition, wage inequality varies by socio-demographic characteristics (age, gender, education), employment setting (urban or rural), and by sector and employment status. Finally, the total wage gap is predominantly explained by age, work experience, socio-professional category (senior manager) and form of remuneration.

Keywords

Wage Gap between Men and Women, Wage Inequality between Men and Women, Oaxaca-Blinder Decomposition, Explained Gap, Unexplained Gap

1. Introduction

Gender wage inequality remains a widespread problem around the world and has been the subject of numerous studies. It has become one of the most debated topics in the economic literature and its issues are still relevant today. According to Wolfelsperger, the concept of wage discrimination refers to unfavorable treat-

ment of a group with certain identical characteristics, regardless of their productive characteristics (Hammouda & Souag, 2011). Most often, these characteristics relate to: age, gender, level of education, sector of employment, professional experience, etc. In most countries of the world, there is no country where women's wages are equal to men's (Meulders, Plasman, & Rycx, 2005). Thus, studies have shown that women suffer from wage inequality in both developed and developing countries. Authors such as Ponthieux & Meurs (2004), have shown in their report that in the European Union countries in 2000, women's wages represented between 80% and 95% of men's wages in hourly terms, and 65% and 80% in monthly terms. The work of Coudin, Maillard, & Tô (2017) on hourly wages by gender in the private sector, shows that women earn 14.3% less per hour than men.

For this reason, the topic of gender wage gaps is increasingly attracting the attention of the scientific world. For developing countries, employment is an important issue for policy makers. Unemployment rates, the strong growth of low-productivity and low-paying precarious jobs, the explosion of the informal sector, and gender issues are the most visible features of the labor market in developing countries. Furthermore, empirical studies in some African countries have shown that there are significant wage gaps between men and women. For example, the study on Cameroon found that the average wage gap against women is around 52.36% (Ekamena, 2014). In Côte d'Ivoire, the economic situation and demographic strength have led to destruction and imbalance in the labor market. According to the General Housing and Population Census (2014), the Ivorian population is estimated at 22,671,331 inhabitants, with 51.6% men versus 48.4% women. Also, the socio-political crisis that has shaken the country in recent years has weakened its economic system in general and more particularly that based on the labor market. Employment in Côte d'Ivoire is almost dominated by the informal sector (93.9%) where 91.9% of men and 96.8% of women are employed. The latter are also predominantly present in sectors of activity such as trade (31.7%) and services (23.7%). On the other hand, they are poorly represented in formal jobs (3.2%) (ENSESI, 2016).

However, the mechanisms that govern these inequalities in the job market in Côte d'Ivoire are not always easy to understand. On the conceptual level, socio-economic factors, cultural factors and gender have been used to explain these inequalities. On the theoretical and empirical level, multiple studies have been undertaken to explain and measure the wage gap between men and women. Thus, it is still of interest to understand why wage inequalities exist between men and women in many countries. The objective of this article is to explain and characterize the wage differentials between men and women in the labor market in Côte d'Ivoire. Using the method developed by Oaxaca and Blinder (1973), we will study the explanatory factors of these inequalities.

To do this, the work will be structured in three sections. The first describes an analysis of the labor market in Côte d'Ivoire. The second concerns theoretical

and empirical literature on wage inequality. The third section is reserved for the methodological approach of the Oaxaca-Blinder decomposition and the different results.

1.1. Analysis of the Labor Market in Côte D'Ivoire

As **Table 1** indicates and as in most of sub-Saharan Africa, the labor market in Côte d'Ivoire is dominated by the informal sector (93.9%), which is mainly found in agricultural activity. This informal sector plays an important and growing role in the absorption of the active population. As for agriculture, it contributes 22% of GDP and is the source of income for two-thirds of the country's households (BAD, 2015). Women and men play different and often complementary roles in ensuring the country's economic and social development. The predominance of informal employment remains marked among both men and women even though, among employed women, very few have a formal job (3.2%) compared to 8.1% for men. In addition, there is a multitude of workers and entrepreneurs in Côte d'Ivoire who work in the informal economy, and also in precarious conditions. However, these workers are poor, unregistered, and lack insurance (Lognon, 2013). Gender discrimination at work also exists in this sector. For example, according to the INS survey (2008), the level of capital is very low among women in the informal sector compared to men. 94.6% of the shares they manage have a capital of less than 452 USD.

Several factors deserve special attention in monitoring the labor market in Côte d'Ivoire. These are the labor force in the labor market, gender disparities in economic activity, and the wage structure.

1.2. The Labor Force in the Côte D'Ivoire Labor Market

According to the ENSESI report (2016), the working age population in Côte d'Ivoire is 14,870,704 out of a total projected population of 23,681,171, or 62.8 percent (see **Table 2**). This population is made up of 50.5% men and 49.5% women. The Ivorian labor force represents 58.2% of the total population of working age. The employed and unemployed populations are estimated at about 97.2% and 2.8% of the workforce, respectively. The gender breakdown of the employed population shows that the proportion of men (67.2%) is higher than

Table 1. Distribution of employment by type (in %) by gender.

Socio-demographic characteristics	Formal job	Informal job	Total
<u>Sex</u>			
Men	8.1	91.9	100
Women	3.2	96.8	100
Combined	6.1	93.9	100

Note: The percentage distribution of employment by type and gender according to data from the national survey on the employment situation and the informal sector in 2016.

Table 2. Structure of the workforce (in %) by individual characteristics.

Characteristics of people	Working-age population	Employed population	Unemployed population
<u>Sex</u>			
Men	50.5	67.2	2.3
Women	49.5	45.8	3.5
Education level			
No education	47.1	61.2	1.4
Primary	22.4	60.3	2.2
Secondary	25.4	44.1	5.2
Tertiary	3.5	55.5	11.7
Combined	62.8	97.2	2.8

Note: The characteristics of individuals and the structure of the labor force according to the survey on the situation of employment and the informal sector in 2016.

that of women (45.8%). Moreover, the employment rate varies with the level of education. Indeed, it is higher among individuals with no education (61.2%) and those with primary education (60.3%) and is relatively low with higher education (55.5%). Unemployment, which is low overall, tends to increase with the level of education. Indeed, in 2016, the unemployment rate was 2.8% and 11.7% of working-age individuals with the higher level were unemployed, compared to 1.4% for individuals with no education. It is also generally noted that women are more vulnerable to unemployment than men, (3.5% versus 2.3%).

The increasingly competitive labor market requires a good level of training and skills. However, women face many barriers to employment in most African countries because of their limited training.

Gender-related behaviors and practices in the labor market in Côte d'Ivoire are rooted in the traditional patriarchal system, which is unfavorable to the promotion of women's activities. The precarious and informal nature of women's work is mainly explained by the principles of separation and hierarchy in society. Thus, the man is considered the head of the family and must therefore work to meet the family's needs, while the role of the woman is essentially domestic. Consequently, it is easy to understand why, despite the existence of employment opportunities, women are excluded or reduced to precarious or marginal jobs. Also, the norms that govern the relationship between men and women vary from one region of the country to another.

1.3. Gender Disparities in Economic Activity

In recent years, the labor force participation rate in Côte d'Ivoire has increased from 55.7 percent in 2013 to 58.2 percent in 2016 according to the new employment statistics standards. This rate varies greatly depending on the gender of the

population. The behavior of women in the Ivorian labor market has declined and remains low, but has not reached that of men. Their labor force participation rate fell from 49.2% in 2013 to 47.4% in 2016. However, that of men increased from 61.8% to 68.8%. Thus, the labor force participation gap between men and women increased from 12.6 percentage points in 2013 to 21.4 percentage points in 2016, an increase of 10 percentage points. The unemployment rate in Côte d'Ivoire decreased significantly from 5.3 percent in 2013 to 2.8 percent in 2016. It was higher among women (3.5%) than men (2.3%) in 2016. However, the unemployment gap between men and women in the labor market decreased by 1 percentage point between 2013 and 2016 (Table 3).

1.4. Wage Structure

Gender wage differentials also depend on the wage structure of the country in question. According to Becker's (1964) human capital theory, men and women have different endowments in terms of education and experience, thus occupying jobs in different sectors. According to the World Bank (2015), the average income in Côte d'Ivoire is low, even compared to comparable countries in Sub-Saharan Africa. Based on 2013 macroeconomic data, the average monthly income of a worker in Côte d'Ivoire is estimated to be about 175 USD, an amount below the average for Sub-Saharan Africa.

However, according to the results of ENSESI (2016), the average monthly wage of employees is estimated at 159 USD, a difference of 16 USD compared to that estimated by the World Bank in 2015. However, this salary is not homogeneous regardless of sociodemographic characteristics (area of residence, gender, age group, and level of education). Men have a relatively better average monthly salary (169 USD) than women (124 USD), with a gap of about 45 USD (ENSESI, 2016) as shown in Figure 1.

2. Review of the Literature on Wage Inequality

2.1. Theoretical Framework on Wage Inequality

In the economic literature, several studies have analyzed the reasons for wage

Table 3. Distribution of labor force and unemployment (%) by gender.

Characteristics	2013		2016	
	Workforce	Unemployment	Workforce	Unemployment
<u>Sex</u>				
Men (M)	61.8	4.3	68.8	2.3
Women (W)	49.2	6.6	47.4	3.5
Combined	55.7	5.3	58.2	2.8
Ecart de genre (H-F)	12.6	-2.3	21.4	-1.2

Source: ENSETE (2013), ENSESI 2016, by Authors.

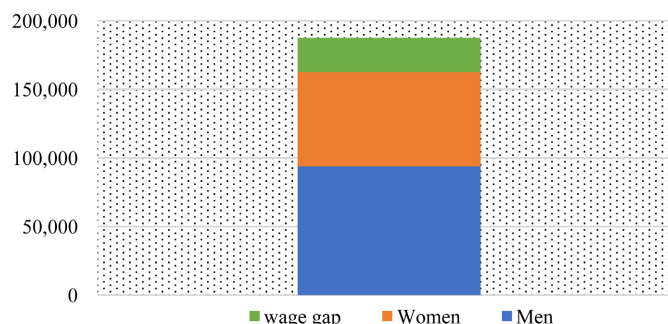


Figure 1. Salary distribution and wage gap (in CFA francs) by gender in Côte d'Ivoire (2016). Source: ENSESI 2016.

differentials between men and women. In the early 1970s, this was explained by both the human capital theory (Mincer & Polachek, 1974) and Becker's (1971) discrimination theory.

According to Mincer and Polachek (1974), the pay gap between men and women is justified by the difference in individual characteristics. Women invest less in their human capital because they anticipate, first, the career interruptions they will be subject to throughout their working lives or the work stoppages they will take, and second, that their professional career will be shorter than that of a man because of their family responsibilities. However, the work of Oaxaca-Blinder (1973) combines these two theories. For these authors, the wage gap between men and women is in fact broken down, on the one hand, by differences in characteristics between the sexes and, on the other hand, by the discrimination to which women are subjected in the labour market. Furthermore, the wage gap is justified by the theory of human capital developed by Gary Becker (1964).

This theory is strongly dominant in neoclassical circles and is based on the hypothesis of the heterogeneity of human capital in the supply of labor, according to which: the level of qualification, which determines the productivity of the worker, is the main factor in setting the wage. Moreover, human capital, a determinant of wages, represents an investment on both the supply and demand sides of the labor market. Indeed, it allows workers (men and women) to increase their wages for the same amount of work. In addition, work experience is a stock of formal and informal human capital (practice and seniority). To this end, this theory considers work experience as a voluntary alternative to other learning processes (Lecourt, 2011). This presupposes the anticipation of opportunity costs in time and money which, according to Becker, implies a calculatory rationality of economic agents depending on financial constraints, individual capacities and socio-economic status (Lecourt, 2011). Between experience and training, women and men are not equal. Women, considered to have little professional and political experience, find it difficult to gain easy access to decision-making positions. Also, family constraints are the main obstacles for the majority of them to benefit from training. Consequently, this affects their competence, motivation and salary. In this theory developed by Becker (1962; 1993),

wage differences reflect the investment in training made by individuals throughout their lives, and particularly during the initial education phase. This theory is situated in the framework of perfect competition: wages are directly linked to individual productivity, which in turn results from the acquisition of skills that can be valued on the labour market. Individuals, depending on their own characteristics, would decide on their investments in human capital by seeking to maximize the wages obtained throughout their career.

According to defenders of the human capital thesis (Mincer & Polachek, 1974; Polachek, 1981; 2004), women's weaker integration into the labour market explains the gender wage gap. They are less developed in their earning activities, and they accumulate less work experience and skills in their profession. They also undergo less initial and continuous training, which would reduce their human capital and make them less productive. For these reasons, companies would not be willing to pay them the same wages as men or provide them with jobs that pay as well as men. However, gender wage differences cannot be explained by human capital alone. This is seen in the discriminatory wage difference, which cannot be explained. With the same qualifications and, therefore, the same human capital, women are simply paid less than men (Aisenbrey & Brückner, 2008). It is in the same vein that the gender decompositions of wage differentials initiated by the work of Oaxaca-Blinder (1973) have become one of the favored avenues of study in this area. This method is based on the idea that there is a part explained by differences in productive capacities (level of education, professional experience, seniority in the job) and by differences in the structure of employment (sectors, size of firms, occupations), and another part resulting from a difference in pay for identical characteristics between men and women. Several studies have been conducted to explain the wage gap and most are based on a combination of these economic theories.

Another study was conducted in India on gender wage inequality in the agricultural sector. According to this study, the size of the village influences the gender wage gap. To this end, the study revealed that in large villages, the growth in women's wages relative to men's was significantly lower. In other words, gender wage inequality in India's agricultural sector widens as village size increases (Srivastava & Sengupta, 2016).

However, The Civil Rights Act of 1964 ended legal discrimination against women in the labor market. While this reduced employment barriers, discrimination could still occur in several ways, such as women being less likely to be accepted in male-dominated occupations or less likely to be considered for promotion into managerial positions (Blau & Kahn, 2017).

Previous studies have examined the effect of marriage and children on the wage gap. This allows us to see whether the gap is primarily explained by the lower earnings of married women relative to unmarried women, or the lower earnings of unmarried men relative to married men (or both). Then the literature reveals how children play a larger role in the gender income gap. In other

words, children can contribute to lower earnings for women. Children are seen as important contributors to the wage gap (Iceland & Redstone, 2020).

2.2. Wage Gaps—Empirical Implications

Many studies have been conducted to explore the history, magnitude, source, and underlying reasons for the wage gap. To provide clear explanations of the wage gap, a recent study was conducted in Turkey. According to this study, the wage gap between men and women in Turkey can be explained almost entirely by discrimination against women in the labor market. Through the Oaxaca decomposition method, this study reveals that 13% of the gap comes from observable gender differences and the remaining 87% is attributable to wage discrimination (Akhmedjonov, 2012). Furthermore, for more explanation on the gender wage gap, another study was conducted in China. In this paper, by the same decomposition method, education accounts for only 6% of the wage gap with a negative sign, indicating that education widens the wage gap between women and males. While in the unexplained part, education shows a positive effect and explains 23% of the discrimination. This is explained by the fact that women have a higher level of education than men, while they are paid particularly less on jobs. In addition to education, among all characteristics, occupation has the strongest power in the explained part. It explains 27% of the wage gap (Su & Heshmati, 2011). For these authors, occupation plays an important role in explaining the wage gap while education, instead of explaining the wage gap, contributes to gender discrimination in labor markets. In addition, a review of empirical studies on wage gaps was observed by public-private sectors. The public-private wage gap was found to decrease with the distribution of wages: large, positive gaps for the lowest paid workers and small, positive, or even negative gaps for the highest paid workers (Azam & Prakash, 2015; Cai & Liu, 2011; Christofides & Michael, 2013; Depalo & Giordano, 2011; Foley & O’Callaghan, 2011; Mizala, Romaguera, & Gallegos, 2011; Papapetrou, 2006; Poterba & Ruben, 1994; Saha, Roy, & Kar, 2014).

Otherwise, Śliwicki & Ryzkowski (2014), show that women in Poland receive on average from 10.1% to 14.6% lower wages in comparison to men, because of potential discrimination. However, the level of virtual discrimination might be a little lower due to sociological, psychological and social factors that were not considered for the decomposition.

In South Korea, there appears to be explicit discrimination against women in general, with stronger discrimination against married women. Indeed, after accounting for differences in region, occupational category, duration of occupation, education, union membership, working for a large firm, industrial category of employment, and marital status, men received 26.2% more than women (the ratio is 0.792). The premium paid to married men raises the average wage of men relative to the average wage of women by 6.9% (the ratio is 0.935). Similarly, the marriage penalty for women lowers average women’s wages relative to

men's wages giving a ratio of 0.987. In other words, men's average wages relative to women's wages are 1.3% higher due to the effect of the marriage penalty for women. There is also professional experience that would explain the pay gap between men and women. In this country, differences in experience and experience squared explain why men's average wages are 9.0% higher than women's wages (the ratio is 0.917). Males had 17.71 years of experience on average compared to 9.12 years for women. The difference (8.59) times the coefficient for experience (0.02) equals 0.172. According to the decomposition, the combined effect on men's salary relative to women's is 0.172, 2, 0.086, 5, 0.086. Thus, 0.086 is the difference in the $\ln W$ of men relative to women. The antilogarithm is 1.09. Hence, men earn 1.09 as much as women due to differences in experience (Monk-Turner & Turner, 2000). In another article published in 2011, reveals that Reimers found, for men of Puerto Rico, discrimination may be responsible for 18% of the wage differential, on its part, for "other Hispanics", discrimination can cause up to 12% of the wage gap. For Mexicans, however, accounts of discrimination only amount to 6%, the rest of the 34% wage gap is due to differences in characteristics such as education (Ospino, RoldánVasquez, & Narváez, 2010).

In a report published by the Institute for Women's Policy Research (IWPR) in 2020, Income differences by gender, race and ethnicity, women of all major racial and ethnic groups earn less than men of the same group. They also earn less than white men. Hispanic workers have lower median weekly earnings than White, Black and Asian women workers. The median weekly earnings of Hispanic women in 2019 were \$642 per week of full-time work, only 56.0% of the median weekly earnings of non-Hispanic white men, but 85.9% of the median weekly earnings of Hispanic men (because Hispanic men also have low earnings).

Juhn & McCue (2017) focused on the role of marriage and children in explaining the gender earnings gap across cohorts, and found that earnings gap attributable to marriage has declined over time, but the gap attributable to children has been more persistent, and the proportion of the gap associated with children increased. More specifically, using data from the 1968 to 2014 Current Population Surveys (CPS), they found that among full-time, year-round workers, at age 30 the earnings gap for those born in 1936-1945 was 0.54, and that marriage contributed 0.19 points to the gap and children another 0.10. But for the cohort born in 1976-1985, the overall gender earnings gap had fallen to 0.14, with marriage and children each contributing 0.04 to the gap.

The literature and specialized theory point to a "rich" list of determinants that explain the wage differentials between men and women. These include socio-demographic and occupational characteristics such as age, experience, gender, marital status, education, job type, occupation, etc. In the classical theory of human capital, age has a positive effect on the remuneration of individuals up to a certain level. Indeed, in France, in a study published by the Di-

rectorate for Research, Studies and Statistics DARES (2015), on average, across the whole of France, the gender wage gap was -8.6% for employees under 30 years of age, -18.5% for those aged 30 - 49 years and -27.3% for employees aged 50 years or older. The increase in the wage gap with age can also be linked to women's working life cycle. From the beginning of their working careers, and despite a level of education comparable to or even higher than that of men, the wage gap is established to the disadvantage of women, in particular because of the choice of career paths that may lead to lower-paid professional opportunities. It increases up to the age of 35, in connection with the arrival of motherhood, and consequently widens due to the lesser accumulation, on average, of professional experience.

In the literature review, research indicates that the gender earnings gap among full-time workers varies somewhat across groups, with a larger gap among whites (white women earn 78 percent of what white men did in 2019) and Asians (77 percent), than Hispanics (86 percent) and blacks (92 percent) (Institute for Women's Policy Research, 2020). These gaps likely vary due to a combination of factors, such as differences in human capital accumulation and discrimination (Snipp & Cheung, 2016).

According to Elise Coudin et al. (2017), differences between women and men in terms of degree, age, experience, seniority in the company, socio-professional category, work share, sector of activity, region of employment and company size contribute 5.9 points to the average hourly wage gap (explained gap). Put another way, if these characteristics were valued among women as they are among men, the gender wage gap would be reduced to 5.9%. Numerous studies show that, like developed countries, developing countries are also affected by wage discrimination. For example, in Guinea, Glick and Sahn (1997) find that differences in characteristics account for 45% of the male-female income differential in the case of the self-employed, which is reduced to 25% in the public sector. Also, Siphambe and Thokweng-bakwena (2001) argue that while in the Botswana public sector the bulk of the gross wage differential is explained by differences in characteristics between men and women and not by wage discrimination, in the private sector, female employees earn more than their male counterparts.

3. Methodology and Empirical Results

The decompositions of gender wage differentials undertaken by Oaxaca (1973) and Blinder (1973) provide a valuable methodological tool for the analysis of wage disparities. According to this methodology, gender wage differentials are first explained by differences in productive capacities and differences in the structure of employment, and then by discrimination.

3.1. Methodology

To measure and explain the gender wage gap, we use the Oaxaca-Blinder (1973)

wage decomposition. This empirical method of Oaxaca (1973) and Blinder (1973) consists in controlling, in a sample of employees of both sexes or of different groups, for all the individual characteristics that give rise to differences in terms of pay: education, training, work experience, social origin, sector of activity, etc., so as to isolate a residual, inexplicable by these normal factors of pay inequality, which captures gender discrimination. In other words, the aim would be to assess the percentage of the average wage gap between men and women that can quantify this gender discrimination. The formulation of the analysis model is as follows:

$$w_{gi} = \beta_{g0} + \sum_{k=1}^k X_{ik} \beta_{gk} + U_{gi} \tag{1}$$

w_{gi} is the logarithm of the wage of an individual i of sex g (F = woman; H = man) which is modelled by a linear function of the individual's characteristics $X_{i1}, X_{i2}, \dots, X_{ik}$ (here: diploma, age, experience, seniority in the company, socio-professional category, work share, sector of activity, region of employment and company size) valued differently according to his or her sex, and an error term U_{gi} which verifies $E(U_{gi} | X_i, g(i) = g) = 0$ (conditional mean null).

The Oaxaca-Blinder (1973) decomposition estimates the wage equations for men and women separately:

$$\bar{W}_F = \beta_{F0} + \sum_{k=1}^K \bar{X}_{Fk} \beta_{Fk} \tag{2}$$

And

$$\bar{W}_H = \beta_{H0} + \sum_{k=1}^K \bar{X}_{Hk} \beta_{Hk} \tag{3}$$

The gap Δ_0 between the logarithm of the average male wage (\bar{W}_H) and the logarithm of average female wage (\bar{W}_F) is then decomposed into the explained gap ($\Delta_{\text{explained}}$) and an unexplained gap ($\Delta_{\text{unexplained}}$).

$$\Delta_0 = \bar{W}_H - \bar{W}_F = (\beta_{H0} + \sum_{k=1}^K \bar{X}_{Hk} \beta_{Hk}) - (\beta_{F0} + \sum_{k=1}^K \bar{X}_{Fk} \beta_{Fk}) \tag{4}$$

$$\Delta_0 = (\sum_k (\bar{X}_{Hk} - \bar{X}_{Fk}) \beta_{Hk}) + ((\beta_{H0} - \beta_{F0}) + \sum_k \bar{X}_{Fk} (\beta_{Hk} - \beta_{Fk})) \tag{5}$$

With:

$\sum_k (\bar{X}_{Hk} - \bar{X}_{Fk}) \beta_{Hk}$ the explained variation noted $\Delta_{\text{explained}}$
 $(\beta_{H0} - \beta_{F0}) + \sum_k \bar{X}_{Fk} (\beta_{Hk} - \beta_{Fk})$ the unexplained variation noted $\Delta_{\text{unexplained}}$
 \bar{X}_{Hk} for example, corresponds to the average of the characteristic X_K on the group of men.

In practice, the coefficients involved in the decomposition are estimated by separated linear regressions for women and men. $\Delta_{\text{explained}}$ corresponds to the wage gap arising from the differences in characteristics between men and women: this is the gap that would remain if each characteristic were valued the same in both genders. Men are taken here as the reference population—in the absence of differences in the valuation of characteristics, women would be paid the same as men $\Delta_{\text{unexplained}}$ is the gap that results from differential valuations of these characteristics between men and women.

3.2. Databases

In Côte d'Ivoire, the most recent data source that gathers information to quantify wage discrimination between men and women is the National Survey on the Situation of Employment and the Informal Sector (ENSESI, 2016). This is a survey conducted in 2016 among households and had 2 phases. In its first phase, the sample consisted of 44,003 individuals and it is this final phase that was selected for this study because it is more complete and more appropriate. From the point of view of our objectives, this source is the most appropriate for the object of our study. In our case study, we will use the final phase because it is completed and more adapted to our study. The sample we have, after data reprocessing, includes 10,970 individuals who are employed or who receive income from their main job, of which 6982 are men and 3988 are women. It provides information on various individual characteristics.

The variable *lnwage* is the natural logarithm of reported monthly income, either as an amount or as an interval. It includes wages, salaries, and other cash or in-kind earnings from work. The variables selected to explain income are: age, age squared, gender, education, work experience, industry, employment setting, work hours, socio-professional category, employment sector, marital status and form of remuneration (see **Table A1** in the Appendix for the different annotations).

4. Results

In this section, we report the descriptive statistics for the variables of interest and the wage estimates for men and women. Then, we present the results of the decomposition of the wage gap between men and women in the Ivory Coast labor market.

4.1. Some Descriptive Statistics

The descriptive statistics of the variables used for salaried individuals, in general and by gender, are summarized in **Tables A2-A4** (see Appendix). We observe that the average age of employees and self-employed workers is about 37 years. At this age, most Ivorians in the labor market are in a couple and married—60.42%—civil marriage, customary marriage and/or religious marriage—Employees and the self-employed have an average primary education at 22.37%, secondary education at 19.37%, and higher education at 3.75%. The vast majority (54.51%) are uneducated. The human capital endowments show that male employees are more educated and professionally trained than females, both at secondary and higher levels. Indeed, 22.56% of male employees have secondary education, compared to 13.77% of female employees, and 4.63% of male employees have higher education, compared to 2.20% of female employees. It is also noticeable that after interrupting their primary or secondary education, many Ivorians start looking for work, thus abandoning their higher education.

The breakdown by socio-professional category shows that non-agricultural laborers remain the most important group in the labor market overall, with 20.31% of the workforce. In this group, men are in the majority, with a proportion of 21.31% against 16.94% for women. Semi-skilled workers come second (20.17%), with men dominating—20.69% compared to 18.87% for women—followed by skilled workers (17.95%), with men still dominating—19.16% for men compared to 13.87% for women. Senior managers or engineers and similar are the last of the whole socio-professional category (2.98%). Men are in the majority in this group with a proportion of 3.3% against 1.8% for women.

As regards institutional sectors, Ivorian employees are on average in the majority in the informal sector (94.63%). Female employees are more numerous in this sector with a proportion of approximately 96.76%, compared to 93.41% for men. In the formal sector, there are more male employees than female employees—6.4 percent men versus 3.2 percent women. The labor market in Côte d'Ivoire is also characterized by the phenomenon of rural exodus. Ivorian women employees are mostly found in urban areas (54.03%). They leave the villages and come to the city where they hope to find more job opportunities. As for men, 53.04% live in rural areas where the conditions of access to employment are less restrictive.

4.2. The Decomposition of the Wage Gap: Empirical Result

The objective of our work is to distinguish, in the total wage gap between men and women, the part that is the consequence of a difference in characteristics (as we have seen in the presentation of the model, Oaxaca-Blinder), and the part that cannot be explained, which is therefore discriminatory.

Table A5 (see appendix) presents the results of the Oaxaca-Blinder decomposition of the wage differential by gender. They show that the estimated average monthly wage of men is higher than that of women. In fact, the coefficient of the estimated average log wage for men is 11.046, while that of women is 10.658, a wage gap of 0.3881. In other words, the decomposition predicts an average wage gap of 38.81%, that is, women earn on average 38.81% less than men. The decomposition of this gap shows that the explained share related to differences in individual characteristics is 0.10028, or 25.84% (0.10028 out of 0.3880652) of the total wage gap. The unexplained share associated with differences in returns to individual characteristics and attributed to wage discrimination is 0.287779, or 74.16% (0.287779 out of 0.3880652) of the total gap. Given these results, there is every reason to believe that the gender wage gap is largely due to the unexplained part of Oaxaca-Blinder. Thus, our decomposition results support the hypothesis of discrimination against women in the Ivory Coast labor market.

Considering the decomposition of the different variables in **Table A6** (see appendix), the greatest contributors to the wage gap between men and women are: age, which explains 32.37% (0.1256 out of 0.388) of the total wage difference, age squared (−105.82%), the socio-professional category “senior manager” (3.55%),

then the form of pay (29.89%).

Age plays an important role in salary formation. It explains 32.37% of the salary gap. It is often associated with professional experience: men have more experience than women because they usually work in their profession without interruption—about 12 years of experience against 8 years for women. The increase in the wage gap with age is also related to the working life cycle of women (Chamkhi, 2015). From the beginning of their professional career, at the same age, the wage gap is established to the disadvantage of women, due to their interruption of the professional activity, child rearing and family tasks, and reduce their occupation rate for this reason.

However, we observe that the square of the age contributes to reduce the average wage gap by 105.82%. This variable reveal that beyond a certain age, at the optimum, the additional increase of one year contributes to the decrease of the gain (log wage), for both sexes (men and women). There is thus a catch-up effect of women's wages on men's. This means that this effect decreases the wage gap as the age of the two groups increases. We also note that there is a clear effect of human capital variables on wage differentiation. Indeed, the wage gap by education levels is negative (−88.59%). This shows that better educated women receive on average a higher wage than men for the same characteristics. An additional year of education would therefore decrease the probability that a woman is discriminated against. In this case, it is the men who are disadvantaged.

As far as work experience is concerned, it explains about 4% (0.01521 out of 0.3880652) of the wage difference between men and women. Women have on average less experience than men, mainly because of more frequent career breaks. They have to acquire a longer experience on the labor market before entering the job market, which keeps a good part of them in a situation of unemployment and therefore of lack of income, inducing precariousness and vulnerability.

Secondly, the variable of the form of remuneration increases the male-female wage gap by 29.89%. In other words, wage discrimination against women increases by 29.89% depending on the form of remuneration (fixed salary, paid by task or by commission or by profit etc.). Increasingly, in the Ivorian labor market, many women earn their income in the form of profit—38.20% of men against 62.98% of women—(see **Table A7** in the appendix).

Socio-professional category is also an observable element. In fact, the wage gap between the two sexes is 3.55% in favor of men among senior executives. It is 1.58% among non-agricultural workers, again in favor of men. On the other hand, among middle managers, the gap is 3.09%, then 4.34% among skilled workers and 7.48% among semi-skilled workers, and finally 5.03% for agricultural laborers, but this time in favor of women. Furthermore, the difference in income between men and women according to age and socio-professional category is due to the fact that, in the Ivorian labor market, women are under-represented among managers and occupy low-paying positions. Also, they are

generally too young and have difficulties to access highly qualified and better paid positions. Many women are in charge of unpaid family and childcare tasks, for example, and leave the labor market temporarily or reduce their workload. This works against them in terms of wages.

However, the average wage gap between men and women by sector of employment has a negative effect (i.e. -16.80%). In fact, the sector of employment tends to reduce the average wage gap by 16.80% depending on the production unit (public administration, parastatal company, farm, associative or cooperative company, etc.) in which the individuals carry out their activity. In this case, it is men who are marginalized. With regard to sector of activity, marital status and working hours, the average wage gap is reduced by 4.36% in the formal sector, 7.98% for single persons and 10.75% for women. As for the area of residence, the wage gap in urban areas is 88.56% in favor of men. In other words, a woman's move to the city reduces the probability that she will be discriminated against because the best opportunities and businesses are in urban areas. They therefore move from the villages to the city where they hope to find more job opportunities. Marital status (single), its explained share is 3% (0.0030114 out of 0.1002859), or 0.77% (0.0030114 out of 0.3880652) of the total gap. This gap is less pronounced in the formal contract, where it is 1% to the disadvantage of women.

5. Conclusion

The objective of this study is to measure the gender wage gap in the Ivory Coast labor market. The decomposition of the gender wage gap has made it possible to isolate a residual that cannot be explained by the traditional factors of pay inequality. This residual, attributed to wage discrimination between the two sexes, indicates the extent to which the principle of "equal pay for equal work" is not respected. Our results also show that women are more present in the informal sector where wages are low, while men hold senior positions in formal enterprises (private or public) where wages are high. This study highlights the different facets of the wage gap between men and women and shows that the wage gap exists in the Ivorian labor market. Moreover, the wage gap is a consequence of the structure of the labor market and is also linked to the different positions occupied by men and women in this market. In other words, the wage differentiation between men and women varies according to their job income, status and position. A limitation of this work is that the sample of the employed population was 10,907 individuals aged 15 years and over. For this purpose, the database of our work is based on a sample of 44,003 individuals and only 10,907 individuals are aged 15 years and over, and who declared their salary. Because the [ENSESI database \(2016\)](#) unfortunately contains a lot of missing data on some variables (dependent variable and explanatory variables). However, the cross-tabulation of several explanatory variables and the search for a good and robust model in the wage decomposition led to the reduction of the sample to 2531 observations.

Another limitation is that certain determinants or factors such as firm size were not taken into account. This could be the subject of another study.

In view of the various results thus obtained, our study suggests an improvement in labor market policies and the promotion of women's employment in the various sectors of activity. Also, it will be necessary to promote the access of women to positions that offer high salaries or to highly qualified functions. This is why, at present, gender equality in sustainable human development is advocated and one of its fundamental objectives is to achieve the empowerment of women and girls. Thus, addressing the wage gap is considered a priority by international and national policymakers, both because it represents unacceptable discrimination from a human rights perspective and because it is harmful to the economy. Through our study, we suggest a number of economic policy measures such as:

Eliminate barriers that hinder women's access to the labor market in order to help them build a good professional career.

Creating productive and appropriate employment opportunities for women to access higher skilled and better paid jobs.

Correct the over-representation of men by giving women more opportunities in higher jobs. This can be achieved, for example, by directing women to networks of influential women who will give them the desire and motivation to advance.

Develop greater transparency in individual salary negotiations. Provide symmetrical and clear information that allows for a more open approach to individual salary negotiations and how individuals are compensated.

Create productive, women-friendly, and better-paying jobs in both rural and urban areas to prevent rural-urban migration and reduce the gender gap.

Fight against cultural practices that are unfavorable to girls' education. More generally, in developing countries, particularly in Africa, social and cultural gender norms confine women to the home. It is therefore necessary to set up a project seeking to change behaviors and social norms by raising women's awareness, as they participate in economic life.

Promote and sensitize women by organizing seminars on equal employment opportunity policy and on issues related to gender equality in political, economic and social decision-making.

To engage and encourage union representatives (male and female) in the promotion of equal pay.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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Appendix

Table A1. Presentation and meanings of the variables.

Variables	Signification
lnsaliaire (dependent)	Logarithm of the wage from the main job
Sexe	Determines the gender of individuals (gender: 0 male; gender 1: female)
Age	Age of respondents
Education	Educational level of individuals (no education, primary, secondary and higher education)
Expe	Work experience
Etatciv	Marital status (civil, religious, customary, cohabiting, divorced, separated, widowed, never married)
secteur1	Sector of activity of agricultural or non-agricultural employees (informal or formal sector) or institutional sector
milieu1	Place of residence (urban or rural) or place of work
Hortravail	Total number of hours spent at work
CSP	Socio-professional category (senior manager, middle manager, semi-skilled worker, non-agricultural laborer, agricultural laborer, domestic worker, other)
Sectemploi	The enterprise or unit in which the respondents (employees) carry out their main activity (public administration, public or parapublic enterprise, farm, international organization, cooperative, household)
Typecontrat	Type of contract used in the main activity (formal contract: fixed-term contract and permanent contract, informal contract: verbal, no contract)
Formre	Form of remuneration: fixed salary (either monthly or fortnightly), paid by task, paid by commission or by profit
Aucunniv	Respondent has no education
Prim	Respondent has a primary level of education
Second	Respondent at secondary level
Sup	Respondent has a higher level of education
Sectform	Respondent works in the formal sector
Sectinfor	Respondent works in the informal sector
Cadresup	Individual is a senior manager
Emplouvq	Respondent is a skilled worker
Manoagr	The respondent is an agricultural laborer
Urbain	The respondent lives in an urban area
Rural	The respondent lives in an urban area

Source: Authors based on [ENSESI 2016](#). The rural environment modality is the reference modality of the environment of residence. The informal sector modality is the institutional sector reference modality.

Table A2. Summary statistics of some variables.

Presentation of some variables and annotation in the database	Obs	Mean	Std. Dev.	Min	Max
Age	10,907	37.89961	12.88326	15	99
Education					
No education (none)	10,907	0.5450628	0.497988	0	1
Primary (prim)	10,907	0.2237095	0.4167487	0	1
Secondary (sec)	10,907	0.1937288	0.395237	0	1
Superior (sup)	10,907	0.0374989	0.1899895	0	1
Socio-professional category (CSP)					
Upper management (cadreup)	2718	0.0298013	0.1700701	0	1
middle management (cadremoy)	2718	0.1225166	0.3279418	0	1
employee/skilledworker (emplouvq)	2718	0.1795438	0.3838776	0	1
employee/semi-skilled worker (emplousq)	2718	0.2027226	0.4021015	0	1
agricultural labourer (manoagr)	2718	0.16078	0.3673955	0	1
non-agricultural labourer (mannagr)	2718	0.2030905	0.4023734	0	1
Domestic (domest)	2718	0.0592347	0.2361069	0	1
Other	2718	0.0423105	0.2013337	0	1
Marital status (etativ)					
Marie	10,907	0.6041991	0.4890444	0	1
Celibat	10,907	0.3958009	0.4890444	0	1
Sector of activity (sector1)					
formal sector (sectform)	10,907	0.053727	0.2254884	0	1
informal sector (sectinf)	10,907	0.946273	0.2254884	0	1

Source: Authors from [ENSESI 2016](#).**Table A3.** Descriptive statistics of variables by gender.

Variables	Man					Woman				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Insalaire	6950	10.85269	1.45623	-2.4849	22.515	3957	10.1859	1.2987	0	22.51503
age	6950	38.31151	12.7098	15	99	3957	37.1761	13.153	15	99
age2	6950	1629.288	1121.11	225	9801	3957	1555.02	1158.5	225	9801
expe	6447	12.05382	11.1938	0	75	3565	8.88051	10.483	0	66
aucunniv	6950	0.5011511	0.50003	0	1	3957	0.62219	0.4849	0	1
prim	6950	0.2269065	0.41886	0	1	3957	0.21809	0.413	0	1

Continued

second	6950	0.2256115	0.41801	0	1	3957	0.13773	0.3447	0	1
sup	6950	0.0463309	0.21022	0	1	3957	0.02199	0.1467	0	1
sectform	6950	0.0658993	0.24812	0	1	3957	0.03235	0.1769	0	1
sectinf	6950	0.9341007	0.24812	0	1	3957	0.96765	0.1769	0	1
admin	6950	0.0542446	0.22652	0	1	3957	0.0326	0.1776	0	1
entreppub	6950	0.0130935	0.11368	0	1	3957	0.00809	0.0896	0	1
entprinag	6950	0.3880576	0.48734	0	1	3957	0.6045	0.489	0	1
explagr	6950	0.5332374	0.49893	0	1	3957	0.31741	0.4655	0	1
orginter	6950	0.0014388	0.03791	0	1	3957	0.00051	0.0225	0	1
entpasso	6950	0.003741	0.06105	0	1	3957	0.00126	0.0355	0	1
orgass	6950	0.0028777	0.05357	0	1	3957	0.00025	0.0159	0	1
menag	6950	0.0033094	0.05744	0	1	3957	0.03538	0.1848	0	1

Source: Authors from [ENSESI 2016](#). Number of observations: male = 6950; female = 3957.

Table A4. Continuation of the descriptive statistics of variables by gender.

cadresup	2098	0.0333651	0.17963	0	1	620	0.01774	0.1321	0	1
cadremoy	2098	0.1210677	0.32628	0	1	620	0.12742	0.3337	0	1
emplouvq	2098	0.1916111	0.39366	0	1	620	0.13871	0.3459	0	1
emplousq	2098	0.2068637	0.40515	0	1	620	0.18871	0.3916	0	1
manoagr	2098	0.1835081	0.38717	0	1	620	0.08387	0.2774	0	1
mannagr	2098	0.2130601	0.40957	0	1	620	0.16935	0.3754	0	1
domest	2098	0.0071497	0.08427	0	1	620	0.23548	0.4246	0	1
autres	2098	0.0433746	0.20375	0	1	620	0.03871	0.1931	0	1
marie	6950	0.6171223	0.48612	0	1	3957	0.5815	0.4934	0	1
celibat	6950	0.3828777	0.48612	0	1	3957	0.4185	0.4934	0	1
urbain	6950	0.4696403	0.49911	0	1	3957	0.54031	0.4984	0	1
rural	6950	0.5303597	0.49911	0	1	3957	0.45969	0.4984	0	1
hortravail	6950	2.153813	0.8087	1	3	3957	1.89436	0.8656	1	3
contrfor	2098	0.3493804	0.47689	0	1	620	0.34032	0.4742	0	1
contrinf	2098	0.4790276	0.49968	0	1	620	0.46129	0.4989	0	1
formre	6950	3.470504	1.60942	1	6	3957	4.13874	1.4846	1	6

Source: Authors from [ENSESI 2016](#). Number of observations: male = 6950; female = 3957.

Table A5. Oaxaca-Blinder decomposition of the gender wage differential.

Blinder-Oaxaca decomposition		Number of obs = 2531 Model = linear				
Group 1: sexe = 0		N of obs 1 = 1945				
Group 2: sexe = 1		N of obs 2 = 586				
Lnsalaire	Robust					
	Coef.	Std. Err	Z	p > z	[95% Conf. Interval]	
overall						
Group_1	11.04652***	0.0263929	418.54	0.000	10.99479	11.09825
Group_2	10.65845***	0.0545296	195.46	0.000	10.55158	10.76533
difference	0.3880652***	0.060581	6.41	0.000	0.2693286	0.5068019
explained	0.1002859**	0.0421636	2.38	0.017	0.0176468	0.1829249
Unexplained	0.2877794***	0.0533005	5.4	0.000	0.1833123	0.3922464

Source: Oaxaca-Blinder decomposition, using data from [ENSESI, 2016](#). Significance of coefficients: *** at the 1% threshold, ** at the 5% threshold Group 1 (male) sex = 0; Group 2 (female) sex = 1 Number of employee observations: male = 1945; female = 586.

Table A6. Decomposition of variables wage gap.

<i>Decomposition of variables wage gap</i>	<i>Gap explained</i>	<i>Gap unexplained</i>	<i>Difference total</i>
	0.1002859 (25.84%)	0.2877794 (74.16%)	0.3880652 (100%)
<i>Decomposition detailed of the wage gap variables</i>			
<i>age</i>	0.1255961***	0.610796	0.7363921 (189.76%)
<i>age2</i>	-0.068983**	-0.341673	-0.410656 (-105.82%)
<i>Expe</i>	0.01521**	-0.0327702	-0.0175602 (-4.53%)
<i>Education</i>	0.0059616	-0.3497455***	-0.3437839 (-88.59%)
<i>Sectform</i>	0.0066731	-0.0236087	-0.0169356 (-4.36%)
<i>sectemploi</i>	0.0313509**	-0.096565	-0.0652141 (-16.80%)
<i>Cadresup</i>	0.009536*	0.004237	0.013773 (3.55%)
<i>Cadremoy</i>	-0.009056	-0.0029542	-0.0120102 (-3.09%)
<i>Emplouvq</i>	0.0163131**	-0.0331387	-0.0168256 (-4.34%)
<i>Emplousq</i>	0.0011667	-0.0302075	-0.0290408 (-7.48%)

Continued

<i>Manoagr</i>	-0.014002	-0.0054989	-0.0195009 (-5.03%)
<i>Mannagr</i>	-0.0069731	0.0131009	0.0061278 (1.58%)
<i>Autres</i>	0.000496	0.0004451	0.0009411 (0.24%)
<i>Celibat</i>	0.0030114	-0.0339758	-0.0309644 (-7.98%)
<i>Urbain</i>	-0.0124283	-0.3312399**	-0.3436682 (-88.56%)
<i>Hortravail</i>	0.0029283	-0.0446459	-0.0417176 (-10.75%)
<i>Contrfor</i>	0.0036413	0.0002574	0.0038987 (1.00%)
<i>Formre</i>	-0.0101562*	0.1261653*	0.1160091 (29.89%)
<i>_cons</i>		0.858801	0.858801 (221.30%)

Source: Oaxaca-Blinder decomposition from **ENSESI 2016** data. Significance of coefficients at the threshold of: *** 1%, **5% and *10%.

Table A7. Descriptive statistics of the form of wages by gender.

How are you paid, or do you get your income, in your job?	Man			Woman		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
fixed salary (monthly, bi-weekly, weekly)	1459	20.99	20.99	518	13.09	13.09
By the day or by the hour	199	2.86	23.86	50	1.26	14.35
By the job	2162	31.11	54.96	673	17.01	31.36
Commission	174	2.5	57.47	32	0.81	32.17
Benefits	2655	38.2	95.67	2492	62.98	95.15
In kind (products, food, lodging)	301	4.33	100	192	4.85	100
Total	6950	100		3957	100	

Source: Authors from **ENSESI 2016**.