The Gender Wage Gap in Colombia and in the Department of Caldas *

[English Version]

La Brecha Salarial por género en Colombia y en el Departamento de Caldas

A brecha salarial por gênero na Colômbia e no Departamento de Caldas

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Abstract

Objective: to determine whether there is a gender wage gap in Colombia and the department of Caldas for the year 2017. **Methodology**: using data obtained from the DANE's Great Integrated Household Survey of 2017, an econometric Binder-Oaxaca decomposition model for average hourly wage by gender was considered for Colombia and Caldas. **Results**: the gross wage gap in the department of Caldas was found to be below the national average with a difference of 13.46% favoring

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men. Taking into account productive characteristics, the characteristic effect in 2017 favors women in both Caldas and Colombia; that is, women have better productive characteristics than men, although the remuneration effect favors men. **Conclusions**: there are significant wage differences between men and women, frequently favoring men, which is majorly due to unobservable characteristics, among which there may be gender discrimination, since men with the same characteristics as women tend to have higher salaries, both in the department of Caldas and in Colombia.

Keywords: Wage gap; Gender discrimination; Characteristic effect; Remuneration effect.

Resumen

Objetivo: determinar si existe diferencial salarial por género en Colombia y el departamento de Caldas en el año 2017. **Metodología**: utilizando los datos de la Gran Encuesta Integrada de Hogares del DANE de 2017, se estimó un modelo econométrico de descomposición de Oaxaca y Blinder del salario horario promedio por género para Colombia y Caldas. **Resultados**: se encontró que la brecha salarial bruta en el departamento de Caldas está por debajo de la media nacional con una diferencia del 13,46% a favor de los hombres. Al tener en cuenta las características productivas se obtiene que el efecto característica durante 2017 está a favor de las mujeres tanto en Caldas como en Colombia; es decir, las mujeres tienen mejores características productivas que los hombres, no obstante el efecto remuneración es a favor de los hombres. **Conclusiones**: existen diferencias salariales significativas entre hombres y mujeres, siempre a favor de los hombres, lo cual se debe principalmente a características no observables, entre las que puede existir la discriminación por género, pues los hombres con las mismas características que las mujeres tienden a tener mayores salarios, tanto en el departamento de Caldas como en Colombia.

Palabras-clave: Brecha salarial; Discriminación por género; Efecto característica; Efecto remuneración.

Resumo

Objetivo: determinar se existe um diferencial de salário por gênero na Colômbia e

no departamento de Caldas em 2017. **Metodologia**: usando dados da Pesquisa Gran Encuesta Integrada de Hogares DANE de 2017, foi estimado um modelo econométrico de decomposição de Oaxaca e Blinder do salário médio, por gênero, para Colômbia e Caldas. **Resultados**: verificou- se que a brecha salarial bruta no departamento de Caldas está abaixo da média nacional, com uma diferença de 13,46% a favor dos homens. Considerando as características produtivas, obtém-se que o efeito característico durante 2017 é a favor das mulheres em Caldas e na Colômbia; isto é, as mulheres têm melhores características produtivas que os homens, porém o efeito da remuneração é a favor dos homens. **Conclusões**: existem diferenças salariais significativas entre homens e mulheres, sempre a favor dos homens, principalmente devido a características não observáveis, dentre as quais pode haver discriminação de gênero, uma vez que homens com as mesmas características das mulheres tendem a têm salários mais altos, tanto no departamento de Caldas quanto na Colômbia.

Palavras-chave: Brecha salarial; Discriminação de gênero; Efeito característico; Efeito remuneração.

Introduction

Wage remuneration is understood as compensation within the framework of an employment agreement, for the physical and mental capacities, performed by an individual for the benefit of a third party. This is one of the most important components that transcends the workforce market, as it directly influences people's well-being.

However, wage capacity depends on certain characteristics of both, the individual and workforce, resulting in wage heterogeneity. The problem arises when this dispersion in wage capacity is explained by characteristics that to a certain degree do not infer productivity, or are not dependent on the physical and mental capacities of the workers; such as gender or race, which generates in society the so-called "wage gaps" that are defined as the average wage difference between men and women (Piñeros, 2009).

According to Hersch (2006), discrimination in the workforce is characterized by unequal treatment of persons who are equally productive due to observable characteristics, such as race, ethnicity or gender. Of concern, and still present in the twenty-first century and in the more developed countries, is the discrimination against women in the workforce, which places this issue into major social debates, because it generates significant losses in efficiency and results in a misallocation of resources. These negative effects on efficiency may be direct, such as the loss of talent, or indirect, such as disincentivization in human capital investment for the discriminated group (Conde and Marra, 2016).

Historically, women have played a key role in maintaining the home, as they did not have clearly defined job positions (Zárate and Godoy, 2005). This conception of women has contributed to the generation of a biased view from a historical standpoint, in which women are presented as mere spectators of their development and as simple companions of men in their construction of society (Francke and Ojeda, 2013). Workforce wise, women have been undervalued and relegated to secondary[1] and, recurrently, poorly paying jobs, even though they perform similar job positions as men.

According to Romero (2007), one of the reasons for discrimination is the dominant position that a group has vis-à-vis other members of society in regards to the distribution and use of available economic, political and social opportunities; sparely available to the disadvantaged group. In the workforce, women and men with the same level of education generally work in different

1 It's to be noted that in the last decades this dynamic has changed, albeit minimally, and now women occupy important positions in the workforce.

economic sectors and when they coincide in the same sector, they occupy different positions: with men clustering at the senior positions in the totem pole. This is known as the "segregation hypothesis" (Wainerman, 1996). As a result, women's workforce participation in well-paid occupations is relatively low, and greater in low-paying sectors.

Workforce inequity between men and women in Colombia continues to be significant; according to the Workforce Observatory for Education (2017), the gender wage gap in Colombia was 11.8% during 2016, 3.3 points lower than it was eight years ago.

In addition, women's workforce participation in Colombia has increased significantly, from 36% in 1982 to 54.7% in 2017 (National Administrative Department of Statistics [DANE], 2017). This increase in women's workforce participation is explained by the demographic, social and cultural transformations that have occurred in recent years countrywide, generating significant changes in the composition, size and function of the family (Flórez, 2004). Thus, the traditional specialization of work within the home, which attributed the role of childcare and domestic tasks exclusively to women, is being broken.

Notwithstanding this abovementioned shift, women continue to have a lower participation in the national employment rate, higher unemployment and a lower representation in the major categories of the economy, by occupational position, in relation to men. In the first case, the national employment rate for women was 47.9 %, compared to 69.3 % for men in 2017. With regard to unemployment, in the same period of study, unemployment among men was 7.3%, while among women it was 12.3% (DANE, 2017).

Now, workforce inequity between men and women tends to be more recurrent in developing countries, as is the case for Colombia, where there are significant differences in the major workforce indicators.

According to the major workforce indicators for the department of Caldas during 2017, the employment rate for women (36.3%) and men (65.9%) was below the national average. On the other hand, the unemployment rate for men (7.5 %) and women (13.9 %) was also above the national average. Conclusively, the overall participation rate of women (42.2%) was lower than that of men (71.3%), both in Caldas and Colombia.

Whilst, the national context figures show a discouraging panorama, the situation is even more concerning in the department of Caldas: the unemployment rate for both men and women is higher in Caldas, moreover, the employment rate and the overall participation rate are lower for both in Caldas in regards to the national average. For a country like Colombia, characterized by high inequality indices, Caldas results to be one of the departments that weighs down these indicators. The picture painted from all the above scenarios, eviden-

ces the existence of a wage difference problem in Colombia and especially in Caldas.

Assuming, however, that the participation of women in the workforce in the country has been growing in recent decades comparatively with other countries, In Colombia still elicits concerns about the behavior of some indicators such as the unemployment and employment rate. The situation in the department of Caldas is even more worrying, as evidenced in the previous figures. The operative nature of this department, its culture and the customs of its inhabitants, as well as the dynamics of the economy itself, can partly explain this behavior. Aggregately, the abovementioned elements help establish that there are important differences in the major workforce indicators between men and women.

The changes in the rate of participation of women in the workforce, marked by the dynamics of women's entry into the economically active population, have demonstrated the existence of a grave problem; a significant wage gap between men and women. This state of affairs has led to the development of various studies that analyzed the gender wage differential in Colombia, such as Tenjo (1993), Baquero (2001), Abadía (2005), Tenjo and Herrera (2009), Galvis (2010), Hoyos, et al. (2010), Arias, Arias and Cerquera (2017) and, more recently, in the rest of the world with Anghel et al. (2018), Mendoza, Cardero and Ortiz (2017), Stier and Herzberg (2017), Bøler, Javorcik and Ulltveit-Moebe (2018), who applied their studies at a national level or in the major cities, departments or regions.

According to Galvis (2010), Colombia's the wage gap between men and women is deep and persistent; and factoring in the inherent national territorial differences , where there exists large disparities between regions, there is need for a detailed analysis of what is happening in each of the country's regions. However, an important aspect in recent years in favor of women is that they have increased their human capital (education and work experience), thus increasing their participation in the workforce.

In Colombia, the vast majority of studies that analyze the wage gender differential have concentrated on studying this phenomenon through wage discrimination, utilizing the procedure of estimating wage equations and decomposing the wage differential using the Blinder-Oaxaca (1973) methodology. One of the pioneering works on the subject was developed by Tenjo (1993), who studied the gender wage gap in Colombia for the 1976-1985 period, using data from the National Household Survey (ENH). Tenjo found that although there is a wage gap between men and women, this cannot only be explained by differences in observable characteristics (education, age, etc.), but also by the term discrimination (remuneration effect), which showed an increasing behavior during the study period.

Baquero (2001), analyzes the gender wage differential in Colombia between 1984 and 1999, a period subsequent to that studied by Tenjo (1993). The author found that although during the study period women's educational rate increased faster than that of men, the returns to education decreased relative to women; this is due to an increased workforce participation. Relatively, the discrimination component had an increasing trend, which contributed to 29% of the wage differential for the first years.

Tenjo and Herrera (2009), studied wage discrimination by gender and ethnicity. These authors used the 2005 Quality of Life Survey (QLs). Using the Blinder-Oaxaca (1973) methodology, the authors found that the wage gaps were not explained by differences in human capital between men and women, since when analyzing the data, the finding that women have a relatively greater concentration in occupations with respect to men was obtained. Moreover, it is women who have the highest qualifications (years of education, work experience, etc.); however, when breaking down the wage gap, it is determined that this difference can only be explained by the effect of discrimination, since the differences in human capital fall in the negative range, favoring women.

Cortés and Flórez (2016), analyzed wage discrimination by gender in Santander during the 2012-2014 period. The Blinder-Oaxaca decomposition (1973) indicated that gender discrimination is the component that explains to a greater extent the wage gaps, since, in Santander for example, women on average earn between 25% and 30% less than men, due to unobservable factors associated with gender discrimination.

In general, these studies are applied not only at an aggregated level countrywide, but also in the country's major cities or departments, however, few studies analyze differences by region, bearing in mind that these have different socio-economic characteristics. Therefore, one of the contributions of this investigation is that it studies the issue of gender wage discrimination in one of the country's department with the greatest problems of this nature, providing empirical evidence to the scarce literature that exists on this subject.

The department of Caldas, is located in the heart of the major coffee-growing area of the country. The important coffee based developmental impulse in Caldas, starting from the 1930's, allowed the Caldas countryside to consolidate as not only one of the most modern in the country, but also acquired a higher level of urban zone integration, with abundant communication routes between all the municipalities, a fact that favored infrastructure- transport, electrical supply, telephone networks, water supply, schools and health centers-. These strides are due to coffee being one of the few products that has brought remarkable contributions to Colombia's economic, social and institutional development, and also owing to the emergence of the railway that economically

integrated the entire country (Cerquera and Orjuela, 2015). Due to the importance of the department of Caldas in the economic and historical development of the country and the current work force situation, it was deemed suitable for the application of juxtaposed analysis between it and the national average.

Henceforth, this paper analyzes the gender wage gaps in Colombia and the department of Caldas for the year 2017. Caldas, due to its geographical location, socioeconomic characteristics, diversity of the workforce and the impact of the external sector, presents important characteristics that differentiates it from the other departments of the country; this is another of the contributions of this work. The fundamental objective is to determine which part of the wage gaps can be explained by differences in the observable characteristics of individuals (education, work experience, age, among others) and by differences in remunerations for those characteristics. To achieve this, the wage decomposition model of Blinder-Oaxaca (1973) was used.

Methodology

In the literature, certain approaches are put forward that make it possible to explain, under certain assumptions, gender wage gaps. One of the most noteworthy approaches is the economic theory of discrimination, which is divided into Becker's (1971) theory "taste based discrimination and the "statistical" theory of discrimination by authors such as Arrow (1971) and Phelps (1972).

The theory of taste based discrimination is based on the prejudice of the agents in the workforce (employer, employee and consumer). Agents incur costs to avoid certain groups (minorities). According to Becker (1971) discrimination is represented by the "displeasure coefficient", which is related to the observable characteristics of the worker visible to the employer and not to the employee's productivity. So an employer is being discriminatory if they pay a different wage to the discriminated group (B) in contrast to the non-discriminated group (A), in spite of the fact that both groups have the same productive characteristics.

On the other hand, the theory of "statistical" discrimination arises when an employer infers that one individual is more productive than another based on observable traits (race and gender). This is because firms have limited information on the skills of individuals, as they are sometimes unobservable; therefore, employers base their decisions on observable characteristics that do not directly affect productivity, but may be correlated with unobservable characteristics that do.

However, with the passage of time the employer can verify the productivity of the individual, which means that the wage gap is not explained majorly by the observable characteristics that the employer used to infer productivity. This article focuses on the theory of statistical discrimination.

Thus, wage discrimination exists in the workforce as long as two individuals with the same characteristics are treated differently due to and only for their gender difference (Blau and Ferber, 1998). In order to identify the factors that most influence gender wage discrimination in the department of Caldas, the Great Integrated Household Survey (GIHS) of DANE for the period 2017 is taken into account. In order to know the factors, the Blinder-Oaxaca model for wage decomposition was used, which allows an approximation of the wage gap by gender. The estimation was made using the ordinary least squares method. The methodology proposed by Blinder and Oaxaca (1973), presents in the first part a Mincerian equation:

$$w_i = X_i \beta_i + \mu_i \qquad (1)$$

X contains the variables that characterize workers. The segment μ represents the unobservable error or effect. The natural logarithm of the hourly wage (*w*) is broken down between men (*i=h*) and women (*i=m*), in order to estimate an equation for each group and then draw the difference:

$$(\ln w_h - \ln w_m) = (X_h \beta_h - X_m \beta_m) + (\mu_h - \mu_m) \qquad (2)$$

The construct of the counterfactual term, $X_m \beta_h$, is made, which indicates the salary that women would obtain if they had the remunerations of men, according to Galvis (2010), it is estimated what is the difference of salaries that are explained by the differences between the observable characteristics, $(X_h - X_m)\beta_h$ and to the different remunerations for each gender, $X_m (\beta_h - \beta_m)$:

$$(\ln w_h - \ln w_m) = (X_h - X_m)\beta_h + X_m(\beta_h - \beta_m) + (\mu_h - \mu_m) \qquad (3)$$

The Characteristics and the Remuneration Effects

Characteristic effect indicates the differences between the characteristics of men (X_h) and women (X_m), while the Remuneration effect indicates the differences in remunerations between men (β_h) and women (β_m); this component evaluates a possible wage discrimination by gender, since it compares the salary between men and women with the same productive characteristics. The term counterfactual refers to the wage gap between men (w_h) and women (w_m), once counterbalanced by the Characteristics effect and Remuneration effect and balance for both men (μ_h) and women (μ_m).

Generally, women have better productive characteristics (education, experience, etc.) than men, so the numerical sign of characteristics effect tends to be positive. On the other hand, men, with similar characteristics to women, tend to obtain higher wages than women, that is, if a man or a woman have the same characteristics, men obtain higher wages.

Why does this happen? The theory of taste based discrimination affirms that an employee can opt to pay a man more than a woman because they plainly prefer to work with the former. The "statistical" theory of discrimination states that one individual is more productive than another, based off on observable traits such as race or gender, the employer may assume that men may be more productive than women, and for this reason decides to pay them a higher wage.

To determine the gender wage gap in the Department of Caldas and Nationwide, data from the Great Integral, Survey of 2017 by DANE was used. The data were filtered by inhabitants of Caldas and Colombia between the ages of 18 and 65 whose incomes were higher than zero. The data gathered was representative of all of Colombia, and also Caldas without differentiating between rural or urban areas. On account that, DANE, in 2017 collected survey information from a sample of 31,360 in Caldas, and for the purpose of making a statistical inference, the default expansion factor contained in the database was utilized. It is important to remark that the expansion factor is applied to the data sample, and it supplies to each of the sample's elements the representative weight that corresponds to the total population. Thusly, through its application, the characteristics of the target population is numerically estimated.

Results

The department of Caldas had an estimated 993,866 inhabitants in 2017, it represented 2% of the total national population. 48.9% of the population in Caldas are men; 72.4% live in urban areas. 26.5% of the Caldas inhabitants had an elementary level of education, 18.24% middle high school, 22.88% high school and 25.93% higher learning or college level education. 31.2% of the population are employed; 23.1% in the private sector and 13.4% are self-employed persons.

To analyze the gender wage gap in the department of Caldas and Colombia, a focus group of employees between 18 and 65 years was recruited, furthermore, the wage income variable was created and used as a method of data standardization. Tables 1 and 2 show the average hourly wage by gender and level of education for the year 2017, belonging to Colombia and the department of Caldas. The hourly wage favors men with a 20.46% and 23.56% respectively. It was found that among the 10% of the individuals that have low wage incomes, the average salary gap between men and women in Colombia is 32.55%, while in Caldas is 10.61%. Both cases favoring of men.

Table 1. Average Hourly Wage by Gender and Level of Education

2017						
TOTAL	Colombia			Caldas		
	Women	Men	Gap	Women	Men	Gap
Average hourly wage	5029,18	6322,89	20,46%	6569,25	8593,55	23,56%
10th Quantile	737,7	1093,75	32,55%	1666,66	1864,4	10,61%
90th Quantile	10886,36	14361,7	24,20%	13830,31	18750	26,24%
Interquantile R (90-10)	10148,66	13267,95	23,51%	12163,65	16885,6	27,96%

2017						
TOTAL	Colombia			Caldas		
	Women	Men	Gap	Women	Men	Gap
Elementary school						
Average hourly wage	2394.81	2856.27	-16,16%	2874.04	4546.69	-36,79%
10th Quantile	588.23	921.87	-36,19%	1500	1209.67	24,00%
90th Quantile	4562.5	5000	-8,75%	4431.81	9000	-50,76%
Interquantile R (90-10)	3974,27	4078,13	-2,55%	2931,81	7790,33	-62,37%

Source: Author´s elaboration based on DANE (2017)
Note: Individuals between 18 and 65 years of age with positive wages. The elementary level of education includes individuals with preschool and primary school (1st grade - 5th grade), High school (6th grade - 11th grade).

From the 10% of people with higher incomes, the wage gap between men and women is 24.20% in Colombia and 26.24% in Caldas. The interquantile rate (90-10) shows the difference between the 90th and the 10th quantile, evidencing the hourly gender wage gap to be 23.51% for Colombia and 27.96% for Caldas, also in favor of men.

The evaluation of differences in average hourly wage by gender and level of education found that men get more incomes than women regardless of the level of education. One important aspect is that the wage gap between men and women tends to be greater in the higher levels of education bracket, for both Colombia and Caldas. However, in the latter, the differences tend to be higher. For the 10% of individuals with lower incomes and who have a secondary level education there exists a difference of 67.55% favoring men in Caldas and 37.25% in Colombia, registering a greater gap in relation to the 10% who get high incomes. For 10% of individuals with higher incomes and high level of education there are relatively minor differences (See Table 2).

Table 2. Average Wage Hourly by Gender and Level of Education (continuation)

2017						
TOTAL	Colombia			Caldas		
	Women	Men	Gap	Women	Men	Gap
Middle High and High School						
Average hourly wage	3486,43	4232,11	-17,62%	3381,75	4126,7	-18,05%
10th Quantile	865,38	1250	-30,77%	1388,88	2689,85	-48,37%
90th Quantile	6382,97	7500	-14,89%	5092,74	5397,72	-5,65%
Interquantile R (90-10)	5517,59	6250	-11,72%	3703,86	2707,87	36,78%
Higher Learning						
Average hourly wage	11367,31	14091,59	-19,33%	12470,19	15120,18	-17,53%
10th Quantile	1785,71	2890,62	-38,22%	3489,62	3438,16	1,50%
90th Quantile	26000	29761,9	-12,64%	20897,44	31521,74	-33,70%
Interquantile R (90-10)	24214,29	26871,28	-9,89%	17407,82	28083,58	-38,01%

Source: Author´s elaboration based on DANE (2017)
Note: Individuals between 18 and 65 years with positive wages. The elementary level includes individuals with preschool and primary school (1st grade - 5th grade), high school (6th grade - 11th grade).

Table 3 shows the results of the Binder-Oaxaca decomposition of the average hourly wage by gender in Colombia and in Caldas in 2017. The first part of Table 3, shows the estimation of Blinder-Oaxaca decomposition grouped by taking into account the whole effect included in the model. The second part shows the individual estimate at a variable level.

The Ordinary Minimum Square Method to control the variables such as years of education, age, age squared, number of children under 18, private sector employees, government, domestic, employer or self-employee was applied. The difference in the gross gap of the average wage of Colombia is 14.36% higher than the average wage gap of 6.61%, revealing that there is less wage discrimination in Caldas than in the rest of the country.

Table 3. Gross Gap. Blinder-Oaxaca Decomposition

Grouped decomposition			Colombia	Caldas
Gross gap			0,1436***	0,0661***
Characteristics Effect			-0,1295***	-0,2428***
Remuneration Effect			0,2731 ***	0,3090 ***
Decomposition by variables	Colombia		Caldas	
	Characteristics effect	Remuneration Effect	Characteristics effect	Remuneration Effect
Education	-0,1047*** (-0,0002)	-0,0207*** (-0,0009	-0,4451*** (-0,0023)	-0,2004*** (-0,0085)
Age	-0,0329*** (-0,0003)	-0,1228*** (-0,0101)	0,0545*** (-0,0028)	-1.1434*** (-0,0846)
Age_2	0,0223*** (-0,0002)	0,0358*** (-0,0053)	0,0389*** (-0,0024)	0,5377*** (-0,0437)
Children	-0,0091*** (-0,0001)	-0,031*** (-0,0001)	-0,0029*** (-0,0006)	-0,0601*** (-0,0013)
Private sector	-0,0188*** (-0,0004)	0,0547*** (-0,0049)	0,1183*** (-0,0026)	0,1751*** (-0,0153)
Domestic	-0,0128*** (-0,0003)	0,0185*** (-0,0015)	-0,1482*** (-0,0032)	0,0117*** (-0,0016)
Government	0,0023*** (-0,0001)	-0,0001 (-0,0005)		0,0097*** (-0,0031)
Employer	0,0348*** (-0,0006)	0,0021*** (-0,0003)	-0,0506*** (-0,0014)	-0,0055*** (-0,0003)
Self-employed	0,0027*** (-0,0001)	0,1702*** (-0,0103)	0,0695*** (-0,002)	0,0291*** (-0,0057)
Constant	0,1912*** (-0,0185)		0,9550*** (-0,0509)	

Source: Author´s elaboration based on DANE (2017)

Note: * p<0,1; ** p<0,05; ***p<0,01. () standard error deviation for Individuals between 18 and 65 years.

When analyzing the wage decomposition according to the stated methodology, the Characteristics Effect still favors female gender, it means, women have an average of 12.95% more of productive characteristics than men, at a national level, and in Caldas the gap is greater, 24.28% in favor of women. This points out that women outclass men in terms of possessing observables characteristics that improve productivity such as education, age, experience. This result coincides with Galvis (2010) and Abadía (2005), among others. Within the characteristics effect of the national context, the variables with more effect are education, business owner and the age, respectively. In Caldas, the variables that better explain the Characteristics effect are education, work in domestic and private sector. Overall, education better explains the proportion of Characteristics effect in Caldas than in Colombia.

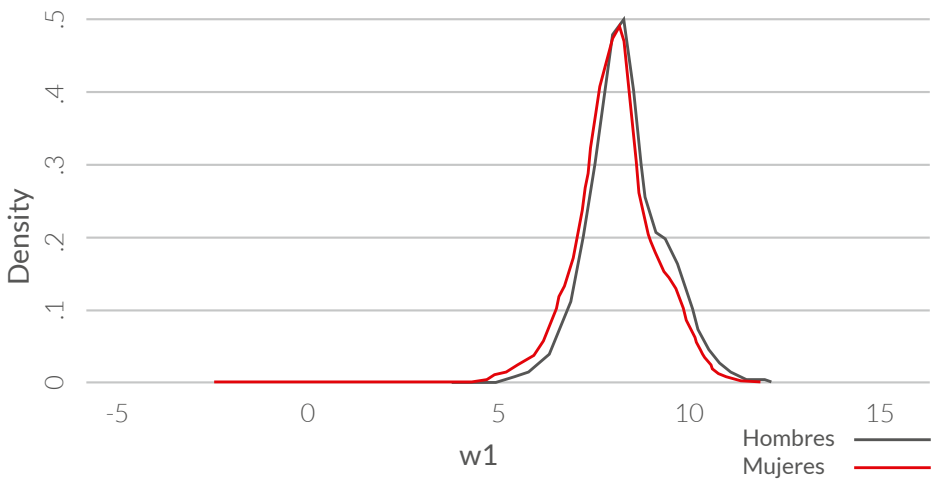
The grouped remuneration effect reveals what would be the wage gap between men and women with the same productive characteristics. In Colombia, this gap is 27.31%, it shows that the remuneration effect is higher in relation to the deferential total, thus, the characteristics effect is overcompensated, with the wage gap favoring men. The two variables, self-employee and age, better explain the effect of remuneration in the national territory.

In Caldas, remuneration effect is higher and it indicates that although men and women have the same productive characteristics, men earn an average of 30.9% more than women. The variables, age and education, have more influence on remuneration effect. At this juncture the question becomes, if the productive characteristics determine the wage of an individual, why do men and women with the same productive characteristics have that significant gap?

One can easily jump to the conclusion that there is a high degree of discrimination against women, going by the fact that there undoubtedly exists a certain degree of gender discrimination. However, it is important to remark that the remuneration effect is not only the result of differences by observable productive characteristics but also of existing differences produced by non-observable ones (abilities, intelligence, certain skills, among others), and is included in the residue estimation. Thus, it cannot be definitively concluded that the total wage gap between men and women corresponds to discrimination against women.

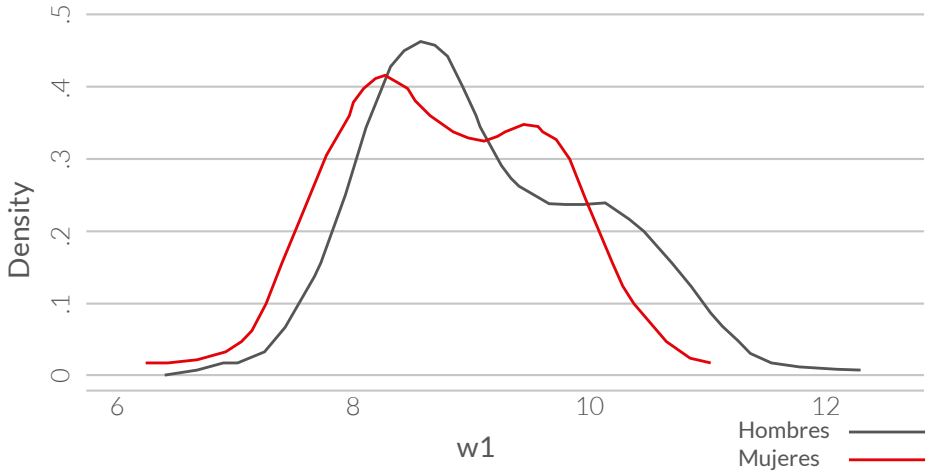
The results only permit the indication of the wage gap between men and women since there are many factors that can be contributing t. Graphics 1 and 2 present the density of the natural logarithm of wages between men and women in Colombia and Caldas, respectively. The density representing men tends to the right in comparison to the function of women, making clear the difference between men and women, on average, men earn higher salaries than women.

Figure 1. Functions of Density of Natural Algorithm of Wage for Men and Women in Colombia



Source: Author´s elaboration based on DANE (2017)

Figure 2. Functions of Natural Logarithm of Density of Hourly Wage for Men and Women in Colombia



Source: Author´s elaboration based on DANE (2017)

Conclusions

Gender wage gaps are a historical phenomenon not unique to Colombia. These wage gaps are different nationally as a whole due to the differing characteristics of each region. Consequently, this dynamic deserves a more reaching analysis of what happens in each region, an aspect that is lacking in terms of studies in both in Colombia and in individual departments such as Caldas.

This article analyzed the gender wage gap in Colombia, and in the department of Caldas for 2017 under the theory of human resource. The lineal model proposed by Mincer (1974) was applied, and the Blinder-Oaxaca decomposition model allowed for the determination of wage discrimination by gender. The gross gap of Caldas was lower than that of the national mean, by a difference of 7.75%.

The characteristics effect that reveals the gap between men and women in observable characteristics that improve productivity favors women, Caldas registering at 24.28% and Colombia at 12.95%. The remuneration wage that reveals the gap between men and women with the same productive characteristics is higher in Caldas at 30.9% than that for Colombia at 27.31%. Although women show better productive characteristics (education, experience, etc.) than men, the latter have higher levels of wage. This issue is by the most part explained by non-observable characteristics (abilities, intelligence, certain skills, among others), in which discrimation may exist.

The education variable is that one that better explains the characteristics effect not only in Colombia, but and also in Caldas. It favors women since they have a higher level of education than that of men, and in general, reflect better productive characteristics. On the other hand, the age variable better explains to a greater extend the remuneration effect in both Colombia and Caldas.

Owing to the fact that women have gender specific capacities and orientations, it then comes as no surprise that men tend to be more readily hired than women. The family unit features such as maternity are seen by employers as an extra cost which sometimes implies lower salaries. Although there is no empirical evidence, this is the thought to be major source of discouragement for women in regards to increases in productive characteristics.

According to Galvis (2010), it is common to find in workforce economic literature stating that women in the country are experiencing an increased workforce participation, and higher levels of education than men. However, the remuneration awarded to women does not correspond to that of their higher presence in workforce.

It is important to determine if this apparent gender based wage discrimination, is the same for all income levels. This cannot be defined using the methodology utilized here as it was conducted by statistics techniques that took into account average values. To achieve this, it is recommended that further researches implement methodologies such as quantile regression that allows for the identification of partial effects throughout the salary distribution. It is also important to conduct research that incorporate a larger pool of information in order to control different problems of endogeneity, especially those caused by education.

Although, the Colombian legal code 1496 of 2011 (Congreso de Colombia, 2011) was implemented with the objective of guaranteeing wage equity between men and women, and has in built mechanisms to effectuate the code, the results have not been meaningful. Consequently, the results of this research call for higher commitment by the goverment in implementing the policy through education and workforce inclusion (including childhood education), that acts as a countermeasure against the workforce discrimination by gender, especially in societies where there are restrictions to education and workforce opportunities. These policy actions should help women find to balance the between family and workforce factors with the objective of avoiding workforce pressure and/or the acceptance of wages lower the that of men

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