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Comparative review of the income gap between the public and private sectors in Ecuador from the perspective of equalization policies

Revisión comparativa de la brecha de ingresos entre el sector público y privado en Ecuador desde las políticas de equiparación

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Abstract

The aim of this research is to study the wage gap between public and private sector employees in Ecuador. The methodology used is the Oaxaca and Blinder method (decomposition method). The necessary microdata is obtained from the National Survey of Employment, Unemployment and Underemployment (ENEMDU) of the National Institute of Statistics and Censuses (INEC) for the years 2008, 2013 and 2018. The results obtained suggest the existence of a gap between public and private sectors, where public sector wages are relatively higher than those of the private sector. In addition, schooling and experience influence income levels positively, with the latter being the most determining factor. The decomposition of income gaps by sector shows that the wage gap responds to differences in human capital endowments and to discriminatory components of the labour force. The policy implications are aimed at reducing the public-private income gap.

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Resumen

El objetivo de esta investigación es examinar la brecha salarial entre empleados del sector público y privado en Ecuador. La metodología utilizada es el método de Oaxaca y Blinder (método de descomposición). Los micro datos se obtienen de la Encuesta Nacional de Empleo, Desempleo y Subempleo (ENEMDU) del Instituto Nacional de Estadísticos y Censos (INEC) de los años 2008, 2013 y 2018. Los resultados obtenidos, sugieren la existencia de una brecha entre el sector público y privado, donde los salarios del sector público son relativamente más altos a los del privado. Además, la escolaridad y la experiencia influyen positivamente en los niveles de ingresos, siendo esta última el factor más determinante. La descomposición de las brechas de ingreso por sector muestra que la brecha salarial responde a diferencias en las dotaciones de capital humano y a componentes discriminatorios de la fuerza laboral. Las implicaciones de política van dirigidas a disminuir la brecha de ingreso público-privada. Estas deben ser orientadas a mejorar los niveles de formación y profesionalización de los trabajadores y a generar escenarios para la igualdad de oportunidades.

Código JEL: D31, J31, J38, J45, J7
Palabras clave: brecha salarial; Ingreso público – privado; mercado laboral; sector público y privado; Ecuador; brecha de ingresos y sector privado

Introduction

The public sector is considered the most attractive employer in many countries, especially in developing countries (Sanhueza, 2017). Accordingly, the public sector wants to be a good employer, so it is willing to pay better wages to less qualified workers (lower part of the wage distribution) (Bender, 2003; Disney & Gosling, 2003; Papapetrou, 2006). However, the public sector is more reluctant to offer higher wages than the private sector to workers with better professional qualifications (Katz & Krueger, 1983). In addition to being corroborated by Papapetrou (2006) in Greece, this is also confirmed by the research of Poterba and Rueben (1994) in the United States. These authors found that wages were higher in the private sector, yet public workers at the bottom of their categories enjoyed a wage premium and were penalized in higher categories. Other authors who agree on this phenomenon are Mueller (1998) in Germany, Blackaby et al. (1999) in the UK, Melly (2005) in Canada, Lucifora and Meurs (2006) in Italy, France, and the UK, and Depalo and Giordan (2011) in Italy, among others.

Previous literature on the public-private sector wage gap shows great heterogeneity in the results. According to Vilerts (2018), it is largely attributed to differences in the choice of sample, the definition of the public sector, and the empirical methods applied. But in general, research shows a larger wage gap between the average public and private sector worker in favor of the public sector, largely

explained by better endowments (Vilerts, 2018). This implies a higher level of well-being derived from the perception of a much higher income, as well as labor incentives, provision of better infrastructure, and excellent services. Likewise, Gindling et al. (2019), in their study of 68 countries, found that the public sector pays a higher wage premium for employees with less education and low-skilled occupations and that this disappears when this sector is compared only to employees in the formal private sector. Like many other authors, they found that bonuses tend to be lower for highly skilled public sector employees, and the wage premium is weakly associated with the level of development of countries.

In Latin America, Panizza, Tella, and Rijckeghem (2001) observed that on average, Latin American countries are characterized by paying a wage premium to public sector workers, which is higher for women and workers with low levels of education. Mizala, Romaguera, and Gallegos (2011) found a very clear wage gap in favor of public sector workers. In the specific case of Ecuador, since the beginning of the 2000s, the importance of controlling public spending—the effect of dollarization at the beginning of the decade—has been mentioned to ensure that this monetary regime is sustainable in the medium and long term. This leads to the fact that one of the topics of study of countless investigations is the growth of wages in the public sector in Ecuador. Thus, the public sector constantly pushes for wage increases, and the private sector is concerned about public sector wage levels (Carrillo, 2004).

In this regard, empirical evidence shows a large number of research studies that analyze the determinants that generate the gap between the two sectors (Michael and Christofides, 2020; Rattso and Stokke, 2020; Tansel, Keskin, and Ozdemir, 2020; among others). On the one hand, some claim that this wage gap is concentrated in the public sector, and there are studies whose results show that this gap is positive in the public sector as a consequence of the monopolistic power of governments to establish prices and taxes to provide public services (Reder, 1975). It is also because of politicians' actions in this sector to ensure their permanence in future elections (Cai & Liu, 2011; Robinson, Torvik, & Verdier, 2017; Tansel et al., 2018). Furthermore, this gap is attributed to the institutional environment for wage setting, which differs from the public to the private sector, with union density being higher in the public sector, where unions have greater bargaining power (Cai & Liu, 2011). In addition, the public sector offers job security and higher levels of well-being (Burdett, 2012; Danzer, 2019; Robinson, Torvik, & Verdier, 2017).

On the contrary, in the second group are authors such as Do Monte (2017), Callaway and Collins (2017) and Mayneris, Poncet, and Zhang (2018), who claim that the wage premium in the private sector is higher, and corresponds to the level of productivity that these workers generate, or is a result of political decision-making, which influences workers' mobilizations regarding their wage demands.

The novelty of this study is based on the fact that in Ecuador no studies have been carried out comparing wage decomposition between the public and private sectors using econometric techniques,

specifically the Oaxaca (1973) - Blinder (1973) methodology. In this context, the objective of this study is to examine the determinants of the wage gap between public and private sector employees in Ecuador based on microdata obtained from the National Employment and Underemployment Survey ENEMDU (2019) of the National Institute of Statistics and Census (INEC, 2019) for the years 2008, 2013, and 2018. The hypothesis is that public or private sector wages respond to worker productivity. The present research uses the Oaxaca (1973) - Blinder (1973) methodology to decompose the gap and determine to which factors it is attributable. Under this approach, this paper contributes to the analysis of the determinants of the wage gap between the public and private sectors: (1) three different time slices, (2) the inclusion of new variables that the literature uses in its econometric analysis, in the labor markets of other countries, in addition to the use of the General Price Index of the Central Bank of Ecuador (2019), which obtains comparable measurements to the base year 2008.

Mincer (1974) provides the theoretical basis for this study. This author affirms that the level of workers' income is determined by the level of human capital and other factors that influence the worker's capacity to aspire to better-remunerated work activities. Under this approach, an increase in a person's human capital implies that their income will increase significantly. This result is corroborated by the work of Oaxaca (1973) and Blinder (1973), who state that the endowment in human capital slightly explains differences in earnings between groups with different racial and gender characteristics.

The results will contribute to the debate on the labor gap based on the empirical evidence obtained and provide objective scientific information to policymakers to establish measures to counteract the aspects that generate this gap.

After the introduction, the rest of the document is structured as follows. The second section contains a review of previous literature. The third section describes the data and methodology. The fourth section includes a discussion of the results. The fifth section presents the conclusions and policy implications.

Review of the literature

In a labor market that is constantly evolving, workers and wage determination—specifically the existing differences between wages in the public and private sector—are the subject of analysis of empirical research (Castagnetti and Giorgetti, 2019; Rattso and Stokke, 2019; Shahen, Kotani, and Kakinaka, 2019; Shahen et al., 2020, among others). The has been an extensive wage gap literature in many countries for quite some time (Christofides & Michael, 2013). As mentioned, the main issue of debate is the existence of wage differences or gaps caused by the public sector having wage-setting institutions and policies that lead to a public-private wage gap (Rattso & Stokke, 2019).

Two approaches are used to understand the presence of wage differentials between the public and private sectors in the research to answer the question: Which sector has the highest returns? The first approach is related to the endowments of each worker that constitute the determining characteristics of the wage: experience, education, age, sex, and production sector, among others. The second is related to discrimination between sectors. The public sector is subject to political restrictions that depend on the country's characteristics and the time it is analyzed. According to Christofides and Michael (2013), these institutional characteristics of the country include wage-setting procedures, level of public sector centralization, public wage-setting practices, union power, stringency of employment protection legislation, minimum wage coverage, wage indexation system, and employment protection legislation. In contrast, the private sector is subject to profit constraints (Papapetrou, 2006; European Commission, 2014).

The first studies on this subject were carried out by Smith (1976, 1977) in the United States, who observed that in this country wages were higher in the public sector, and the earnings premium was higher for women than for men. These studies were also conducted in many other countries: Mueller (1998) in Canada, Rees and Shah (1995), Blackaby et al. (1999) and Heitmueller (2006) in the United Kingdom, Petersen et al. (1990) in Denmark, Hartog and Oosterbeek (1993) and Van Ophem (1993) in the Netherlands, Dustmann and Van Soest (1998) and Melly (2005) in Germany, Christofides and Pashardes (2002) in Cyprus, Bargain and Melly (2008) in France, and Machado and Mata (2005) in Portugal. Many other researchers conducted their studies in several countries, such as Lucifora and Meurs (2006), who decomposed the wage gap in three countries, Italy, France, and the United Kingdom, or Giordano et al. (2011), who conducted their study in ten countries belonging to the European Union. Both found a wage gap in favor of the public sector, with the wage gap being larger for women at the lower end of the wage distribution.

Analyzing the literature on the public-private pay gap makes it possible to group them into two distinct groups according to their results. The first group includes research that refers to the existence of a wage gap in favor of the public sector, explained by the difference between the endowments of each worker or by discrimination by sector (Smith, 1976, 1977; Panizza and Qiang, 2005; Papapetrou, 2006; Cai and Liu, 2011; Démurger, Li, and Yang, 2012; Antwi and Phillips, 2013; Faggio and Overman, 2014; Lausev, 2014; Nikolic, 2014; Ingusci, Callea, Chirumbolo, and Urbini, 2016; Mahuteau et al., 2017; Vilerts, 2018; Buyse, Heylen, and Schoonackers, 2019; Herman, 2019, among others).

Examining the wage differentials between the two sectors in Greece, Papapetrou (2006) found that this favors the public sector and is mainly due to the number of employees. Similarly, authors such as Morikawa (2016), in a study conducted in Japan using microdata, found that public sector workers' wages are relatively higher in less populated rural regions, although the educational level is less significant

in this sector. Similarly, Ingusci, Manuti, and Callea (2016) and Nikolic, Rubil, and Tomić (2017) establish that the public sector wage premium has advantages over the private sector, taking for granted the preference of workers for this sector of the economy.

Fontaine et al. (2019) and Burdett (2012), in their analyses for the United States and some Western European countries, highlight the importance of workers in the sector where they work. These authors claim that public sector jobs are "more secure" than those in the private sector, in addition to the fact that this sector predominantly hires university graduates, women, and older workers. Similarly, Danzer (2019) observed that public-sector workers are more satisfied with job security than private-sector workers. This is due to a process of privatization of state companies entities, which increases salary dispersion in the public and private sectors, but more so in the private sector. Nevertheless, Danzer highlights that public sector income could also be related to unofficial payments or bribes to public sector employees.

According to Rattso and Stokke (2019), Basu (2018), and Maczulskij (2013), the propensity to seek employment in the public sector increases with the local unemployment rate, and this could increase the wage advantage in the long run. People living in regions with a high unemployment rate tend to seek public employment to take advantage of a large income premium and greater job security.

Singleton (2019), who incorporated the sex variable into the gap analysis in his study in the United Kingdom, observed, like the authors of this first group, that the public sector enjoys wage advantages. Thus, the wage premium remained stable between 2002 and 2016 for women, and it increased by 6 points for men. The work of Castagnetti and Giorgetti (2019) for Italy between 2005 - 2010 comes to similar conclusions. They found that, when comparing by age group, the gender-based wage gap decreases between both sectors and enhances the evidence of a glass ceiling effect, but only in the public sector.

For their part, Robinson, Torvik, and Verdier (2017) suggest that the public sector has higher benefits than the private sector, due to the incentives generated by politicians for workers in this sector to win their vote in future elections. Nonetheless, since some of the inefficiencies of the policies are concentrated in the future, it makes sponsoring public employment less costly. Similarly, in a study conducted in Latin America, Mizala, Romaguera, and Gallegos (2011) state that the public sector wage premium reflects incentives to overpay public sector workers and buy their cooperation and political support. This premium appears to be higher in countries where the bargaining power of the private sector, as measured by private unionization rates, is weak. This relationship is stronger for workers in the higher percentiles of the wage distribution. The state's intention to be seen as a "good employer" of less skilled workers could be one of the reasons why they are paid better in the public sector (Afonso & Gomes, 2014;

Chaudhuri, Ghosh, & Banerjee, 2018; Enikolopov, 2014; Jaimovich & Rud, 2011; Aslam & Kingdon, 2009; Antón & de Bustillo, 2015).

Jofre-Monseny, Silva, and Vázquez-Grenno (2018) state that the increase in the public sector wage premium, mainly financed by local taxes, triggers a migration response, and the size of cities increases significantly. Other effects appear in public sector structures, where access requires costly entry procedures because of the differences that arise between these institutions (Dickson, Postel-Vinay, & Turon, 2014; Lovely, Liang, & Zhang, 2019; Lucadñamo, Mancini, & Nifo, 2019). Similarly, Chen and Liu (2018), in their analysis of the existing gap in China's public sector, determine that the fair wage hypothesis is consistent and emphasize that at low wage levels, public officials are more likely to accept bribes and, as per capita income increases, the level of corruption decreases.

In the second group, there is research related to the private sector, which finds the existence of benefits in the wage premium in the private sector, where productivity levels are higher, thus generating greater benefits in remuneration (Poterba & Rueben, 1994). Valasek (2018) points out that the reputation of the private sector in some countries means workers incline their preference toward it; therefore, the increase in wages in this sector displaces workers from the public sector to the private sector.

Similarly, Callaway and Collins (2017) and do Monte (2017) assert that the private sector wage premium responds to the level of effort of workers, motivating workers to belong to this sector, where they earn more than in the public sector. In addition, their results provide evidence that changing jobs from the private to the public sector causes a change in individual behavior, which is reflected in their level of productivity.

However, Telegdy (2018) states that the increase in the public wage premium in Hungary in 2002 was an important mechanism through which the state intervened in the labor markets of private companies and corporations indirectly (which had maintained a higher wage premium up to that time). Similarly, Auricchio, Ciani, Dalmazzo, and Blasio (2020), for the case of southern Italy, determine that the public sector is used as a redistributive device; nonetheless, it is found to discourage the development of the private sector. In contrast, in China, the decrease in public sector pensions has reduced the desire for employment in the public sector, resulting in negative incentives. Moreover, due to the heterogeneous characteristics of the workers, the results were even more remarkable in rural areas (Domenech, Garcia, & Ulloa, 2018; Jia, 2017; Bermperoglou, Pappa, & Vella, 2017).

For their part, Mayneris, Poncet, and Zhang (2018) analyze China's 2004 minimum wage reform, finding that wage costs for surviving private companies that were most exposed to minimum wage increases increased, but also that their productivity improved significantly, allowing them to absorb the cost shock without any change in their profitability and with limited labor losses.

Overall, the study conducted by Mahuteau et al. (2017) indicates that four main findings appear regularly: (1) on average, public sector workers are paid more than private sector workers; (2) this gap is higher for women than for men; (3) the pay distribution among public sector workers is more compressed than that of the private sector and, therefore, the pay gap in favor of public sector workers is higher for those with a lower pay distribution; and (4) the pay gap varies across geographic regions within nations.

To conclude, as Christofides and Michael (2013) point out, there are four approaches followed in wage gap studies from a methodological point of view. First, some studies use microdata to observe the existence of a positive wage premium in the public sector. The second method used in wage gap studies is the Oaxaca-Blinder decomposition method (Blinder, 1973; Oaxaca, 1973; Oaxaca and Ramson, 1994). This method reveals the extent to which the observed wage gap is explained by differences in the observed individual characteristics of workers and job attributes and what remains unexplained.

The third method attempts to consider the effect of selection caused by unobserved individual characteristics and correct for bias using two-step Heckman selection methods (Heitmueller, 2006; García-Pérez & Jimeno, 2007; Christofides & Pashardes, 2002; Christofides & Michael, 2013). The fourth and final method uses quantile regression or quantile decomposition techniques, such as Poterba and Rueben (1994), to examine the differences in the wage distribution between the two sectors. Other authors who have followed this method are Lucifora and Meurs (2006) in France, the UK, and Italy, Depalo and Giordano (2011) in Italy, Hospido and Moral-Benito (2016) in Spain, Mahuteau et al. (2017) in Australia, and Castagnetti and Giorgetti (2019) in Italy. The studies by Machado and Mata (2005) in Portugal and Melly (2005) in Germany use the quantile regression decomposition technique to identify the sources of increasing wage inequality and provide a more complete picture of the wage gap at different percentiles of the wage distribution (Vilerts, 2018).

Data and methodology

Data

The data analyzed in this research were obtained from the National Survey of Employment, Underemployment and Unemployment (ENEMDU) conducted and published by the National Institute of Statistics and Census (INEC, 2019). The logarithm of total income is used as the dependent variable, which is deflated to the base year 2008 using the General Price Index, presented by the Central Bank of Ecuador (2019), to be used as a comparable measure. Worker characteristics such as age, education and work experience are used as independent variables. In addition, control variables such as geographic region, gender, ethnicity, economic sector, formal employment, and hours worked are used (see Table 1).

The independent variables are associated with human capital. The age measured in years makes it possible to choose the economically active population (15 and 65 years old). Education measured in years passed in the educational system—the number of years passed at its highest level with the years that should have been passed at previous levels—depending on the level of knowledge of the individual and the work experience that is measured according to the years that the person has participated in the labor market. In addition, control variables such as area, sex, region, ethnicity, economic sector, and marital status are included.

Figure 1 shows public and private employees' income in 2008, 2013, and 2018. Observing the years, it can be seen that the average income of public sector employees is higher than that of the private sector, increasing considerably for each year of analysis. This difference in income could be associated with the endogenous characteristics of each worker or with the discriminatory factors that characterize each of the sectors analyzed, leaving aside the possible effects of inflation since these measures are deflated for a base year. Similarly, Figure 2 shows a ratio at the provincial level between the number of employees in the public sector and the private sector for each year of the study. It can be observed that as this increases, the presence of public sector employees is greater.

Figure 1. Median income of public and private employees in 2008, 2013, and 2018
Source: created by the authors with data from ENEMDU (2019)

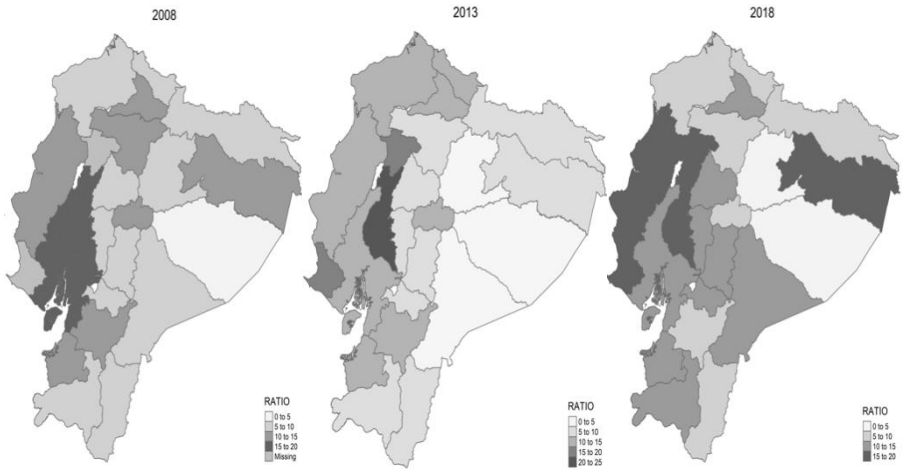

Figure 2. Presence of public sector over private sector in 2008, 2013, and 2018
Source: created by the authors with data from ENEMDU (2019)

Figure 3 shows the average levels of schooling of private and public sector workers by year of study. This indicates that the sector with the highest level of schooling among its workers is the public sector as opposed to its counterpart, which on average has 5.98, 6.27 and 5.42 fewer years of schooling in 2008, 2013, and 2018, respectively.

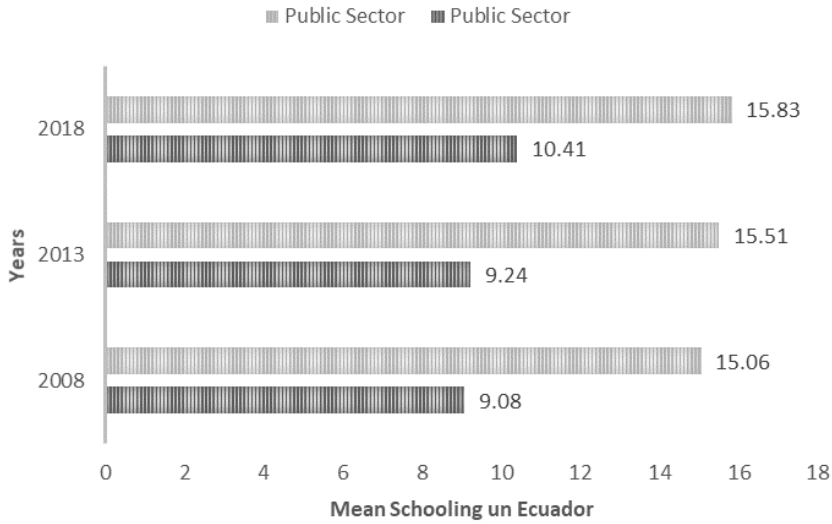

Figure 3. Mean schooling of public and private employees in 2008, 2013, and 2018
Source: created by the authors with data from ENEMDU (2019)

Table 1
Description of variables and descriptive statistics for 2008, 2013, and 2018

Variable	Description	2008		2013		2018	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Income	Logarithm of wage per worker	5.297	0.948	5.513	0.870	5.575	0.953
Sector	Working population (Public=0, Private =1)	0.890	0.311	0.886	0.316	0.889	0.313
Schooling	Number of years in the educational system	9.728	5.254	9.953	5.170	11.006	4.998
Age	Age	37.574	13.143	38.353	12.668	39.167	12.555
Age^2	Age squared	1584.5	1024.9	1631.4	1020.2	1691.7	1024.1
Experience	Number of years working	11.212	11.726	10.619	11.277	11.997	11.728
$Experience^2$	Number of years working squared	263.22	462.05	239.93	436.35	281.48	468.96
Area	Urban =1; Rural =2	1.405	0.490	1.426	0.494	1.349	0.476
Formal	Formal =1, Informal=2	0.425	0.497	0.477	0.499	0.550	0.497
Gender	Male =1, Female =2	1.318	0.465	1.312	0.463	1.345	0.475
Hours worked	Number of hours worked last week	43.229	15.558	41.567	13.066	39.776	13.85
Ethnicity	Indigenous=1, Afro-Ecuadorian=2, Mestizo=3 White=4	2.892	0.607	2.818	0.573	2.859	0.521

Note: S.D. = standard deviation of the variables

Table 1 shows a description of each of the variables, as well as descriptive statistics. The dependent variable is the logarithm of income, and the independent and control variables are sector, schooling, age, experience, area, formal employment, gender, hours worked, and ethnicity. In descriptive statistics, the mean generally represents the average of the set of observations. As a measure that reflects the distance from the mean of the variables in use, the deviation maintains stability in each year and in their comparison.

The use of these variables is based on the studies cited in the literature, in which different authors use them to determine with greater accuracy the effect caused by the gap in either of the two sectors of analysis. Jia (2017) uses age and experience to estimate the impact on retirees from declining pensions in China. The use of human capital helps in the estimation of the explained component, which is generated in the gap between sectors (Aslam & Kingdon, 2009; Maczulskij, 2013; Antón & de Bustillo, 2015; Ingusci, Palma, Giuseppe, & Iacca, 2016). Likewise, formal employment, used by Panizza and Qiang (2005), provides a measure that separates the effects of the sample of workers who enjoy full labor rights from the rest. Finally, ethnicity is included as a measure that distinguishes workers' differences, given Ecuador's ethnically diverse labor market.

Methodology

With the information presented in the previous section, a regression is estimated according to Mincer (1974), establishing an income function whose determinants are level of schooling, experience, experience squared, age, and age squared. According to this approach, the labor market participation equation and the Mincerian income equation estimated are as follows:

$$logw_i = \alpha_i + \delta esc_i + \delta exp_i + \delta exp_i^2 + \delta edad_i + \delta edad_i^2 + \varepsilon_i \quad (1)$$

$$logw_i = \alpha_i + \delta X_i + \varepsilon_i \quad (2)$$

Equation (1) measures the determinants that influence the income of individuals. The dependent variable w expresses income in logarithm, and the independent variables esc, exp, exp2, age, and age2 represent schooling, experience, potential experience, age, and potential age, respectively. In Equation (2), the variable Xi is added, which represents a matrix of the variables described in Equation (1) and other factors that explain the income level of individuals (control variables) (see Table 1).

The assumption of this model is based on the wage differences mainly due to the productivity that exists among the same workers, and therefore, in accordance with the human capital theory, to the difference between the levels of schooling and the level of experience each worker possesses.

To analyze differences in earnings between workers belonging to different private and public sectors, the Oaxaca-Blinder method (Blinder, 1973; Oaxaca, 1973) was used to decompose mean differences in log earnings into two components: one factor that is attributable to differences in workers' average endowments, and another to differences in the returns on these endowments.

The observed average difference in earnings between workers in two sectors, s1 and s2, can be defined as:

$$\Delta log\overline{w}_{s1s2} = \overline{w}_{s1} - \overline{w}_{s2} \quad (3)$$

Where bars indicate mean values. Substituting Equation (2) in Equation (3), the following is obtained:

$$\Delta\, log\overline{w}_{s1s2} = \overline{X'}_{s1}\hat{\delta}_{s1} - \overline{X'}_{s2}\hat{\delta}_{s2} \quad (4)$$

Where the hats denote estimated coefficients of separate profit equations. Assuming that a non-discriminating income structure 〖 δ〗 ^* is known, the differential of the logarithm of income can be decomposed as follows:

$$\Delta\, log\bar{w}_{s1s2} = (\bar{X}_{s1} - \bar{X}_{s2})'\delta^* + \left[\overline{X'}_{s1}\left(\hat{\delta}_{s1} - \delta^*\right) - \overline{X'}_{s2}\left(\hat{\delta}_{s2} - \delta^*\right)\right] \quad (5)$$

Equation (5) shows that the income gap between sector s1 and sector s2 can be decomposed into two parts. The first part of the equation can be interpreted as the part of the income differential attributed to differences in average individual characteristics between sectors. The second term (in brackets) represents the amount by which sector earnings differ from the assumed non-discriminatory wage structure. This term is the "unexplained" or residual component of the income gap. In other words, the fact that people with the same characteristics are paid differently in various sectors could be due to different production processes resulting in varying levels of individual productivity in diverse sectors or to particular institutional factors.

Discussion of results

Tables 2, 3, and 4 show the results of the regressions of Equations (1) and (2) based on Mincer's theory for 2008, 2013, and 2018, respectively. In all three years (2008, 2013, and 2018), a gap between the public and private sectors is evident, which is negative and significant for the private sector. In other words, wages in the private sector are lower than in the public sector. This result holds for all models when adding each of the control variables and is consistent with the results found by Démurger, Li, and Yang (2012), Faggio and Overman (2014), Antwi and Phillips (2013), Panizza and Qiang (2005), and Buyse, Heylen, and Schoonackers (2019).

Schooling and experience do influence the level of income in a positive and significant way. This result implies that a person with higher human capital receives higher income. This finding is consistent with the approach of Schultz (1961) and supported by Becker (1964); both authors indicate that people's knowledge and skills improve their opportunities and increase their income. Studies by O'Gorman (2010), Nordman, Robilliard, and Roubaud (2011), Campos, Ren, and Petrick (2016) similarly corroborate this.

Furthermore, the potential age has a negative and significant effect, implying that increases in this characteristic do not represent gains for workers, as seen in their diminishing returns. In this regard, Leping and Toomet (2008) and Vick and Fontanella (2017) point out that there is a wage gap between older and younger people due to productivity and disability causes.

The gender of the worker significantly influences the level of income and is negative for women. Women maintain a lower wage premium than men. The number of hours worked represent a positive and significant effect on the wage level, i.e., they increase the income level of workers. Concerning ethnicity, there is a positive and considerable income gap for Afro-Ecuadorians, mestizos, and whites with respect

to the indigenous ethnic group. Similar conclusions were reached by Rathelot (2014), who points out that the wage gap is significantly increased by ethnic discrimination. Finally, when formal employment is added, it has a positive and significant effect on informal employment due to the stability and lower risks that workers experience by being legally employed. Likewise, Saari et al. (2016) claim that people working in the informal sector have lower wages, which leads to poverty.

Table 2
Results of the Mincer Function in 2008

	M0	M1	M2	M3	M4	M5	M6	M7	M8
Private sector	-1.137***	-0.761***	-0.695***	-0.616***	-0.602***	-0.637***	-0.681***	-0.688***	-0.504***
	(-49.97)	(-32.68)	(-32.71)	(-29.17)	(-28.72)	(-31.22)	(-34.93)	(-35.33)	(-25.38)
Schooling		0.0622***	0.0624***	0.0660***	0.0560***	0.0584***	0.0563***	0.0545***	0.0430***
		(46.62)	(48.96)	(51.64)	(41.61)	(44.53)	(44.92)	(43.20)	(33.45)
Experience			0.0323***	0.0135***	0.0164***	0.0107***	0.0113***	0.0116***	0.0150***
			(26.38)	(9.76)	(11.95)	(7.97)	(8.84)	(9.10)	(11.90)
Experience^2			-0.00066***	-0.0004***	-0.0004***	-0.0003***	-0.0003***	-0.0003***	-0.00032***
			(-25.86)	(-12.56)	(-13.10)	(-10.36)	(-10.68)	(-10.71)	(-12.42)
Age				0.0538***	0.0487***	0.0549***	0.0433***	0.0425***	0.0379***
				(24.66)	(22.42)	(25.88)	(21.23)	(20.88)	(19.00)
Age^2				-0.000515***	-0.000483***	-0.00055***	-0.00042***	-0.0004***	-0.0004***
				(-20.56)	(-19.42)	(-22.71)	(-17.99)	(-17.86)	(-16.41)
Rural area					-0.287***	-0.312***	-0.249***	-0.237***	-0.175***
					(-21.78)	(-24.32)	(-20.26)	(-19.12)	(-14.30)
Female						-0.476***	-0.349***	-0.345***	-0.342***
						(-38.02)	(-28.55)	(-28.31)	(-28.67)
Hours worked							0.0176***	0.0177***	0.0153***
							(49.46)	(49.57)	(43.07)
Afro-Ecuadorian								0.0735*	0.0663
								(2.01)	(1.86)
Mestizo								0.198***	0.156***
								(9.26)	(7.42)
White								0.238***	0.200***
								(8.06)	(6.92)
Formal									0.434***
									(32.93)
Constant	6.320***	5.395***	5.131***	3.960***	4.556***	5.145***	4.407***	4.245***	4.124***
	(293.66)	(188.29)	(171.06)	(76.42)	(78.31)	(87.71)	(76.02)	(69.60)	(68.94)
Remarks	25422	25422	25202	25202	25202	25202	25202	25202	25202
Adjustment R^2	0.089	0.161	0.209	0.233	0.247	0.288	0.351	0.354	0.380

Note: *, **, *** denotes statistical significance at the 5%, 1% and 0.1% levels, respectively. The *t* statistic is shown in parentheses. M0, M1, ..., M8 represents the models proposed according to the control variables.

Table 3
Results of the Mincer Function in 2013

	M0	M1	M2	M3	M4	M5	M6	M7	M8
Private sector	-1.049***	-0.709***	-0.686***	-0.645***	-0.642***	-0.675***	-0.677***	-0.683***	-0.518***
	(-64.59)	(-42.57)	(-40.92)	(-38.61)	(-38.78)	(-42.21)	(-45.14)	(-45.63)	(-34.79)
Schooling		0.0543***	0.0553***	0.0575***	0.0493***	0.0527***	0.0507***	0.0495***	0.0369***
		(53.28)	(52.01)	(54.17)	(44.05)	(48.58)	(49.84)	(48.51)	(36.11)
Experience			0.0215***	0.00886***	0.0108***	0.00461***	0.00469***	0.00483***	0.00975***
			(17.10)	(6.49)	(7.96)	(3.50)	(3.80)	(3.92)	(8.19)
Experience^2			-0.000551***	-0.00034***	-0.00034***	-0.0002***	-0.00022***	-0.00023***	-0.00027***
			(-17.05)	(-9.77)	(-9.90)	(-6.77)	(-7.05)	(-6.96)	(-9.05)
Age				0.0436***	0.0403***	0.0501***	0.0387***	0.0390***	0.0345***
				(16.86)	(15.72)	(20.13)	(16.55)	(16.68)	(15.33)
Age^2				-0.00044***	-0.00042***	-0.00053***	-0.00039***	-0.00040***	-0.00036***
				(-13.74)	(-13.23)	(-17.13)	(-13.59)	(-13.87)	(-13.01)
Rural area					-0.226***	-0.238***	-0.183***	-0.168***	-0.0990***
					(-21.27)	(-23.17)	(-18.90)	(-17.23)	(-10.39)
Female						-0.424***	-0.303***	-0.300***	-0.297***
						(-41.94)	(-31.14)	(-30.93)	(-31.79)
Hours							0.0197***	0.0197***	0.0169***
							(57.91)	(58.09)	(50.61)
Afro-Ecuadorians								0.0577*	0.0656**
								(2.20)	(2.60)
Mestizo								0.156***	0.120***
								(9.39)	(7.48)
White								0.315***	0.276***
								(8.33)	(7.57)
Formal									0.452***
									(44.20)
Constant	6.444***	5.601***	5.478***	4.551***	5.023***	5.433***	4.610***	4.461***	4.339***
	(421.42)	(261.24)	(226.67)	(85.77)	(88.01)	(97.06)	(84.78)	(78.74)	(79.48)
Remarks	24485	24485	24374	24374	24374	24374	24374	24374	24374
Adjustment R^2	0.146	0.234	0.244	0.260	0.273	0.322	0.404	0.407	0.451

Note: *, **, *** denotes statistical significance at the 5%, 1% and 0.1% levels, respectively. The t statistic is shown in parentheses. M0, M1, ..., M8 represents the models proposed according to the control variables.

Table 4
Results of the Mincer Function in 2018

	M0	M1	M2	M3	M4	M5	M6	M7	M8
Private sector	-1.100***	-0.766***	-0.731***	-0.691***	-0.703***	-0.709***	-0.687***	-0.696***	-0.540***
	(-53.41)	(-36.97)	(-35.65)	(-33.71)	(-34.62)	(-36.18)	(-38.85)	(-39.36)	(-31.21)
Schooling		0.0615***	0.0645***	0.0658***	0.0573***	0.0606***	0.0551***	0.0539***	0.0409***
		(47.36)	(47.76)	(48.95)	(40.74)	(44.57)	(44.78)	(43.72)	(33.50)
Experience			0.0354***	0.0216***	0.0237***	0.0156***	0.0123***	0.0121***	0.0139***
			(23.48)	(12.72)	(14.07)	(9.51)	(8.32)	(8.17)	(9.82)
Experience^2			-0.00081***	-0.00055***	-0.00054***	-0.00041***	-0.00034***	-0.00032***	-0.00031***
			(-21.38)	(-13.26)	(-13.14)	(-10.31)	(-9.45)	(-9.03)	(-9.14)
Age				0.0516***	0.0490***	0.0623***	0.0423***	0.0430***	0.0395***
				(15.10)	(14.45)	(18.94)	(14.17)	(14.43)	(13.86)
Age^2				-0.00055***	-0.00055***	-0.00068***	-0.00045***	-0.00046***	-0.00043***
				(-13.27)	(-13.23)	(-17.07)	(-12.40)	(-12.77)	(-12.39)
Rural area					-0.254***	-0.260***	-0.210***	-0.193***	-0.133***
					(-18.64)	(-19.76)	(-17.66)	(-16.12)	(-11.48)
Female						-0.463***	-0.281***	-0.279***	-0.281***
						(-37.77)	(-24.61)	(-24.49)	(-25.85)
Hours							0.0255***	0.0256***	0.0212***
							(65.54)	(66.01)	(55.03)
Afro-Ecuadorians								0.126**	0.0955*
								(3.04)	(2.41)
Mestizo								0.215***	0.154***
								(10.01)	(7.47)
White								0.259***	0.185***
								(4.73)	(3.53)
Formal									0.499***
									(42.16)
Constant	6.554***	5.580***	5.318***	4.277***	4.788***	5.159***	4.283***	4.066***	4.005***
	(337.51)	(202.36)	(173.38)	(60.66)	(63.80)	(70.62)	(63.63)	(57.46)	(59.17)
Remarks	18998	18998	18996	18996	18996	18996	18996	18996	18996
Adjustment R^2	0.131	0.222	0.244	0.256	0.269	0.320	0.446	0.449	0.496

Note: *, **, *** denotes statistical significance at the 5%, 1% and 0.1% levels, respectively. The *t* statistic is shown in parentheses. M0, M1, ..., M8 represents the models proposed according to the control variables.

Table 5 shows the results of Equations (3) and (4) for 2008, 2013, and 2018. In 2008, there was a wage gap by sector, partly explained by differences in human capital endowments and by discrimination for the private sector group of workers. This result persists for the years 2013 and 2018. In them, both the explained and the unexplained components of this gap are reduced for 2013. However, for 2018 it increases compared to 2013 but in a smaller proportion compared to 2008, considering that income is comparable for the three years due to the use of a deflator (see Figure 4).

A similar result is found by Danzer (2019) and Aslam and Kingdon (2009). In their studies, public sector workers enjoy a higher wage premium and are more satisfied with the job security provided by the public sector. The discriminatory component would be related to the behavior of the State, which concentrates a greater number of workers in the public sector, with a higher salary premium despite a low level of productivity, which does not compensate for this premium.

Table 5
Oaxaca-Blinder income decomposition 2008, 2013, and 2018

	2008	2013	2018
Differential	Ñ		
Prediction_1	6.304***	6.446***	6.554***
	(440.96)	(626.65)	(570.26)
Prediction_2	5.158***	5.397***	5.454***
	(750.85)	(952.17)	(766.60)
Difference	1.146***	1.049***	1.100***
	(72.26)	(89.35)	(81.36)
Decomposition			
Endowments	0.623***	0.510***	0.548***
	(48.09)	(52.64)	(50.35)
Coefficients	0.737***	0.653***	0.703***
	(28.88)	(35.83)	(34.27)
Interaction	-0.214***	-0.114***	-0.151***
	(-8.84)	(-6.52)	(-7.88)
Remarks	25 202	24 374	18 996

Note: *, **, *** denotes statistical significance at the 5%, 1% and 0.1% levels, respectively. The *t* statistic is shown in parentheses.

This result resembles that proposed by Robinson, Torvik, and Verdier (2017), who suggest that it is related to the patronage generated by the state through employment, regardless of the level of worker productivity, which in turn, ensures their permanence in future elections. It is also important to consider that the size of the public sector was much larger in Ecuador during the three years of study, which would demonstrate what is written in the literature on the "good employer" which the State aspires to be seen as (Chaudhuri, Ghosh, & Banerjee, 2018; Enikolopov, 2014; Jaimovich & Rud, 2011).

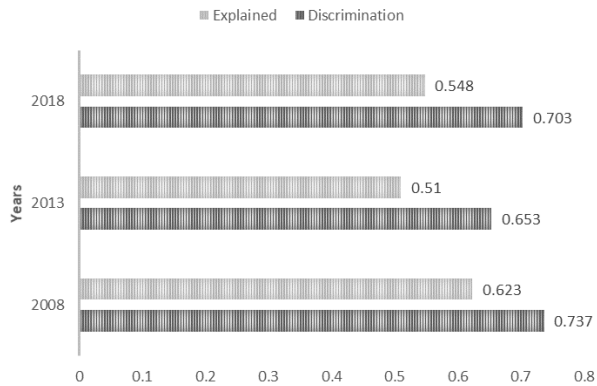

Figure 4. Components of the wage gap in 2008, 2013, and 2018
Source: created by the authors

Conclusions

This paper decomposes the income gap in Ecuador by labor sector for 2008, 2013, and 2018, using the Oaxaca (1973) and Blinder (1973) decompositions. Income inequality mainly affects private sector, indigenous, and rural employees. The gap is present at the income level since this is the main source of income for households and depends on the level of human capital and the worker's years of experience.

In all three years of the study, the negative wage gap for private sector employees is due to human capital endowment factors and discrimination since private sector employees have a positive gap when the gaps are decomposed according to endowments. The Oaxaca (1973) - Blinder (1973) wage decomposition made it possible to determine that the wage gap is not only attributable to human capital endowments but also responds to different factors such as geographic area of residence, gender, and ethnicity.

Management implications

The study of the public-private wage gap has important policy implications for a wide range of labor market issues. Assessing the gap and understanding it is very important in this regard. This research reiterates the importance of implementing measures focused on dissolving the disparities between workers in both sectors through appropriate human resource management. Nevertheless, it is very important to seek a balance in both sectors and to remember that changes may positively or negatively affect the public-private sector. Thus, empirical evidence shows that private-sector wages are very sensitive to wage variations in the public sector (European Commission, 2014). With regard to the discriminatory component, this can be reduced through a salary readjustment in the public sector, which should be based on the productivity of civil servants.

There are several considerations to keep in mind: (1) according to Vilerts (2018), higher wages in the public sector may justify outsourcing some government functions to the private sector, (2) headhunting may force the private sector to raise wages to compete for employees in the labor market. Nevertheless, it should be kept in mind that increasing wages may lead to reduced profitability in the private sector. (3) very low wages in the public sector may lead to being uncompetitive in attracting and retaining qualified employees, which may result in a reduction in the quality of public services (Elliott et al., 2007; Vilerts, 2018).

Therefore, it is important to focus policies on the uniform provision of human capital and generate conditions that guarantee the functioning of the labor market. In this way, workers' bargaining power in either sector can be increased.

Limitations and suggestions for future research

The comparative analysis of the three years of the research study is carried out with cross-sectional data, which limits the temporal and spatial dimensions of the econometric analysis. Future research can consider this limitation and use spatial econometric techniques (spatial lag models, spatial error, Durbin spatial) to examine the spatial spillovers of the wage gap.

References

Afonso, A., y Gomes, P. (2014). Interactions between private and public sector wages. Journal of Macroeconomics, 39(PA), 97–112. https://doi.org/10.1016/j.jmacro.2013.12.003

Antón, J.I., y de Bustillo, R.M. (2015). Public-private sector wage differentials in Spain. An updated picture in the midst of the Great Recession. Investigacion Economica, 74(292), 115–157. https://doi.org/10.1016/j.inveco.2015.08.005

Antwi, J., y Phillips, D.C. (2013). Wages and health worker retention : Evidence from public sector wage reforms in Ghana. Journal of Development Economics, 102, 101–115. https://doi.org/10.1016/j.jdeveco.2012.10.004

Aslam, M., y Kingdon, G. (2009). Public-private sector segmentation in the Pakistani labour market. Journal of Asian Economics, 20(1), 34–49. https://doi.org/10.1016/j.asieco.2008.06.001

Auricchio, M., Ciani, E., Dalmazzo, A., y Blasio, G. De. (2020). Redistributive public employment ? A test for the South of Italy. Economics Letters, 186, 108787. https://doi.org/10.1016/j.econlet.2019.108787

Bargain, O., y Melly, B. (2008). Public Sector Pay Gap in France: New Evidence Using Panel Data. Disponible en: https://econpapers.repec.org/RePEc:iza:izadps:dp3427 (Consulted: 04/01/2020)

Basu, B. (2018). The role of behavioral choices in reducing wage inequality in developing countries. Economic Modelling, 75(November 2017), 355–363. https://doi.org/10.1016/j.econmod.2018.07.006

BCE (2019). Banco Central del Ecuador; Cuentas regionales. Quito, Ecuador. Becker, G. (1964). Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education (First). National Bureau of Economic Research, Inc. Available in: https://econpapers.repec.org/RePEc:nbr:nberbk:beck94-1 (Consultado: 04/01/2020)

Bender, K.A. (2003). Examining Equality between Public- and Private-Sector Wage Distributions. Economic Inquiry, 41(1), 62–79. https://doi.org/10.1093/ei/41.1.62

Bermperoglou, D., Pappa, E., y Vella, E. (2017). The government wage bill and private activity. Journal of Economic Dynamics and Control, 79, 21–47. https://doi.org/10.1016/j.jedc.2017.03.006

Blackaby, D., Clark, K., Drinkwater, S., Leslie, D., Murphy, P., y O'Leary, N. (1999). Earnings and employment opportunities of disabled people. Department of Education and Employment, (133), 117. Available in: http://scholar.google.com/scholar?hl=enybtnG=Searchyq=intitle:EARNINGS+AND+EMPLOYMENT+OPPORTUNITIES+OF+DISABLED+PEOPLE#0 (Consultado: 04/01/2020)

Blinder, A.S. (1973). Wage Discrimination: Reduced Form and Structural Estimates. The Journal of Human Resources, 8(4), 436. https://doi.org/10.2307/144855

Burdett, K. (2012). Towards a theory of the labor market with a public sector. Labour Economics, 19(1), 68–75. https://doi.org/10.1016/j.labeco.2011.07.006

Buyse, T., Heylen, F., y Schoonackers, R. (2019). On the impact of public policies and wage formation on business investment in research and development ☆. Economic Modelling, (September). https://doi.org/10.1016/j. econmod.2019.09.022

Cai, L., y Liu, A. (2011). Public–Private Sector Wage Gap in Australia: Variation along the Distribution. British Journal of Industrial Relations, 49(2), 362–390. Disponible en: https://econpapers.repec.org/RePEc:bla:brjirl:v:49:y:2011:i:2:p:362-390 (Consulted: 04/01/2020)

Callaway, B., y Collins, W.J. (2017). Unions , workers , and wages at the peak of the American labor movement. Explorations in Economic History, 000(August), 1–24. https://doi.org/10.1016/j.eeh.2017.08.003

Carrillo, P. (2004). Las diferencias salariales entre el sector público y privado en el Ecuador. Cuestiones Económicas, 20(2:3), 165–174.

Castagnetti, C., y Giorgetti, M.L. (2019). Understanding the gender wage-gap differential between the public and private sectors in Italy: A quantile approach. Economic Modelling, 78, 240–261. https://doi.org/10.1016/j.econmod.2018.09.025

Castro Campos, B., Ren, Y., y Petrick, M. (2016). The impact of education on income inequality between ethnic minorities and Han in China. China Economic Review, 41(C), 253–267. Disponible en: https://econpapers. repec.org/RePEc:eee:chieco:v:41:y:2016:i:c:p:253-267 (Consulted: 05/02/2020)

Chaudhuri, S., Ghosh, A., y Banerjee, D. (2018). Can public subsidy on education necessarily improve wage inequality? International Review of Economics and Finance, 54(June 2017), 165–177. https://doi.org/10.1016/j. iref.2017.08.005

Chen, Y., y Liu, Q. (2018). Public-sector wages and corruption: An empirical study. European Journal of Political Economy, 54, 189–197. https://doi.org/10.1016/j.ejpoleco.2018.06.006

Christofides, L.N., y Michael, M. (2013). Exploring the public-private sector wage gap in European countries. IZA Journal of European Labor Studies, 2(1). https://doi.org/10.1186/2193-9012-2-15

Christofides, L.N., y Pashardes, P. (2002). Self/paid-employment, public/private sector selection, and wage differentials. Labour Economics, 9(6), 737–762. https://doi.org/10.1016/S0927-5371(02)00103-3

Danzer, N. (2019). Job satisfaction and self-selection into the public or private sector: Evidence from a natural experiment. Labour Economics, 57, 46–62. https://doi.org/10.1016/j.labeco.2019.01.002

Démurger, S., Li, S., y Yang, J. (2012). Earnings differentials between the public and private sectors in China: Exploring changes for urban local residents in the 2000s. China Economic Review, 23(1), 138–153. https://doi. org/10.1016/j.chieco.2011.08.007

Depalo, D., y Giordano, R. (2011). The public-private pay gap: a robust quantile approach. Disponible en: https:// ideas.repec.org/p/bdi/wptemi/td_824_11.html (Consulted: 10/02/2020)

Dickson, M., Postel-Vinay, F., y Turon, H. (2014). The lifetime earnings premium in the public sector: The view from Europe. Labour Economics, 31, 141–161. https://doi.org/10.1016/j.labeco.2014.07.015

Disney, R., y Gosling, A. (2003). "A New Method for Estimating Public Sector Pay Premia: Evidence from Britain in the 1990's". CEPR Discussion Papers, (C.E.P.R. Discussion Papers.), 3787.

do Monte, P.A. (2017). Public versus private sector: Do workers' behave differently? EconomiA, 18(2), 229–243. https://doi.org/10.1016/j.econ.2017.01.001

Doménech, R., García, J.R., y Ulloa, C. (2018). The effects of wage flexibility on activity and employment in Spain. Journal of Policy Modeling, 40(6), 1200–1220. https://doi.org/10.1016/j.jpolmod.2018.08.002

Dustmann, C., y Van Soest, A. (1998). Public and private sector wages of male workers in Germany. European Economic Review, 42(8), 1417–1441. Disponible en: https://econpapers.repec.org/RePEc:eee:eecrev:v:42:y:1998:i:8:p:1417-1441 (Consulted: 11/01/2020)

Eitan, A., Herman, L., Fischhendler, I., y Rosen, G. (2019). Community–private sector partnerships in renewable energy. Renewable and Sustainable Energy Reviews, 105, 95–104. https://doi.org/10.1016/j.rser.2018.12.058

Elliott, R. F., Ma, A.H., Scott, A., Bell, D., & Roberts, E. (2007). Geographically differentiated pay in the labour market for nurses. Journal of Health Economics, 26(1), 190-212.

ENEMDU (2019). Instituto Nacional de Estadistica y Censos. Encuesta Nacional de Empleo, Desempleo, y Subempleo. Base de Datos Socioeconomicas (INEC). Quito, Ecuador.

Enikolopov, R. (2014). Politicians, bureaucrats and targeted redistribution. Journal of Public Economics, 120, 74–83. https://doi.org/10.1016/j.jpubeco.2014.08.004

European Commission (2014). Disponible en: https://ec.europa.eu/info/index_es

Faggio, G., y Overman, H. (2014). The effect of public sector employment on local labour markets. Journal of Urban Economics, 79 (December 2011), 91–107. https://doi.org/10.1016/j.jue.2013.05.002

Fontaine, I., Galvez-iniesta, I., Gomes, P., y Vila-martin, D. (2019). Labour market flows: Accounting for the public sector. Labour Economics, 101770. https://doi.org/10.1016/j.labeco.2019.101770

Garcia-perez, J.I., y Jimeno, J.F. (2007). PUBLIC SECTOR WAGE GAPS IN SPANISH REGIONS. Manchester School, 75(4), 501–531. Disponible en: https://econpapers.repec.org/RePEc:bla:manchs:v:75:y:2007:i:4 :p:501-531 (Consulted: 04/01/2020)

Gindling, T.H., Hasnain, Z., Newhouse, D., y Shi, R. (2019). Are public sector workers in developing countries overpaid? Evidence from a new global dataset. World Development, 126(February). https://doi.org/10.1016/j. worlddev.2019.104737

Giordano, R., Depalo, D., Coutinho Pereira, M., Eugène, B., Papapetrou, E., Pérez, J., … Roter, M. (2011). The public sector pay gap in a selection of Euro area countries. ECB Working Paper, (1406).

Hartog, J., y Oosterbeek, H. (1993). Public and private sector wages in the Netherlands. European Economic Review, 37(1), 97–114. Disponible en: https://econpapers.repec.org/RePEc:eee:eecrev:v:37:y:1993:i:1:p:97-114 (Consulted: 15/01/2020)

Heitmueller, A. (2006). Public-private sector pay differentials in a devolved Scotland. Journal of Applied Economics, 9, 295–323. Disponible en: https://econpapers.repec.org/RePEc:cem:jaecon:v:9:y:2006:n:2:p:295-323 (Consulted: 15/01/2020)

Hospido, L., y Moral-Benito, E. (2016). The public sector wage premium in Spain: Evidence from longitudinal administrative data. Labour Economics, 42(C), 101–122. Disponible en: https://econpapers.repec.org/ RePEc:eee:labeco:v:42:y:2016:i:c:p:101-122 (Consulted: 15/01/2020)

INEC (2019). Instituto Nacional de Estadísticas y Censos.

Ingusci, E., Callea, A., Chirumbolo, A., y Urbini, F. (2016). Job crafting and job satisfaction in a sample of italian teachers: The mediating role of perceived organizational support. Electronic Journal of Applied Statistical Analysis, 9(4), 675–687. https://doi.org/10.1285/i20705948v9n4p675

Ingusci, E., Manuti, A., y Callea, A. (2016). Employability as mediator in the relationship between the meaning of working and job search behaviours during unemployment. Electronic Journal of Applied Statistical Analysis, 9(1), 1–16. https://doi.org/10.1285/i20705948v9n1p1

Ingusci, E., Palma, F., Giuseppe, M. C. De, y Iacca, C. (2016). Social and scholar integration and students satisfaction: The mediating role of career adaptability. Electronic Journal of Applied Statistical Analysis, 9(4), 704–715. https://doi.org/10.1285/i20705948v9n4p704

Jaimovich, E., y Rud, J.P. (2014). Excessive public employment and rent-seeking traps. Journal of Development Economics, 106, 144–155. https://doi.org/10.1016/j.jdeveco.2013.09.007

Jia, H. (2017). An evaluation of pension differentials between Chinese private and public sectors from perspective of protection and incentives over the lifecycle. China Economic Review, 44, 16–29. https://doi.org/10.1016/j. chieco.2017.03.002

Jofre-Monseny, J., Silva, J.I., y Vázquez-Grenno, J. (2018). Local labor market effects of public employment. Regional Science and Urban Economics. https://doi.org/10.1016/j.regsciurbeco.2018.11.001

Katz, L.F., y Krueger, A.B. (1991). Changes in the structure of wages in the public and private sectors. Industrial Relations, (3667).

Lausev, J. (2014). What has 20 years of public-private pay gap literature told us? Eastern European transitioning vs. developed economies. Journal of Economic Surveys, 28(3), 516–550. https://doi.org/10.1111/joes.12039

Leping, K.O., y Toomet, O. (2008). Emerging ethnic wage gap: Estonia during political and economic transition. Journal of Comparative Economics, 36(4), 599–619. Available in: https://econpapers.repec.org/RePEc:eee:- jcecon:v:36:y:2008:i:4:p:599-619 (Consulted: 04/01/2020)

Lovely, M.E., Liang, Y., y Zhang, H. (2019). Economic geography and inequality in China: Did improved market access widen spatial wage differences? China Economic Review, 54(2018), 306–323. https://doi.org/10.1016/j. chieco.2019.01.005

Lucadamo, A., Mancini, P., y Nifo, A. (2019). Household's Consumer Behaviour: Economic Recession and Quality of Institution. The case of Italy. Electronic Journal of Applied Statistical Analysis, 12(1), 277–302. https://doi. org/10.1285/i20705948v12n1p277

Lucifora, C., y Meurs, D. (2006). The public sector pay gap in France, Great Britain and Ttaly. Review of Income and Wealth, 52(1), 43–59. https://doi.org/10.1111/j.1475-4991.2006.00175.x

Maczulskij, T. (2013). Public-private sector wage differentials and the business cycle. Economic Systems, 37(2), 284–301. https://doi.org/10.1016/j.ecosys.2012.10.002

Mahuteau, S., Mavromaras, K., Richardson, S., y Zhu, R. (2017). Public-Private Sector Wage Differentials in Australia. Economic Record, 93, 105–121. https://doi.org/10.1111/1475-4932.12334

Mata, J., y Machado, J.A. (2005). Counterfactual decomposition of changes in wage distributions using quantile regression. Journal of Applied Econometrics, 20(4), 445–465. Available in: https://econpapers.repec.org/ RePEc:jae:japmet:v:20:y:2005:i:4:p:445-465 (Consulted: 21/02/2020)

Mayneris, F., Poncet, S., y Zhang, T. (2018). Improving or disappearing: Firm-level adjustments to minimum wages in China. Journal of Development Economics. https://doi.org/10.1016/j.jdeveco.2018.06.010

Melly, B. (2005). Decomposition of differences in distribution using quantile regression. Labour Economics, 12(4), 577–590. https://doi.org/10.1016/j.labeco.2005.05.006

Michael, M., y Christofides, L.N. (2020). The impact of austerity measures on the public - private sector wage gap in Europe. Labour Economics, 63, 101796. https://doi.org/10.1016/j.labeco.2020.101796

Mincer, J. (1974). "Schooling, Experience and Earnings" National Bureau of Economic Research. Columbia University Press.

Mizala, A., Romaguera, P., y Gallegos, S. (2011). Public-private wage gap in Latin America (1992-2007): A matching approach. Labour Economics, 18(SUPPL. 1), S115–S131. https://doi.org/10.1016/j.labeco.2011.08.004

Morikawa, M. (2016). A comparison of the wage structure between the public and private sectors in Japan. Journal of the Japanese and International Economies, 39, 73–90. https://doi.org/10.1016/j.jjie.2016.01.004

Mueller, R.E. (1998). Public–private sector wage differentials in Canada: evidence from quantile regressions. Economics Letters, 60(2), 229–235. https://doi.org/10.1016/S0165-1765(98)00110-4

Nikolic, J. (2014). The effect of large-scale privatization on public sector pay gap in a transition economy. Economics of Transition, 22(4), 759–781. https://doi.org/10.1111/ecot.12052

Nikolic, J., Rubil, I., y Tomić, I. (2017). Pre-crisis reforms, austerity measures and the public-private wage gap in two emerging economies. Economic Systems, 41(2), 248–265. https://doi.org/10.1016/j.ecosys.2016.06.001

Nordman, C., Robilliard, A.S., y Roubaud, F. (2011). Gender and ethnic earnings gaps in seven West African cities. Labour Economics, 18(S1), S132–S145. Available in: https://econpapers.repec.org/RePEc:eee:labeco:v:18:y :2011: i:s1:p:s132-s145 (Consulted: 15/01/2020)

O'Gorman, M. (2010). Educational disparity and the persistence of the black-white wage gap in the U.S. Economics of Education Review, 29(4), 526–542. Available in: https://econpapers.repec.org/RePEc:eee:ecoedu:v:29:y:2010:i:4:p:526-542 (Consulted: 15/01/2020)

Oaxaca, R. (1973). Male-Female Wage Differentials in Urban Labor Markets. International Economic Review, 14(3), 693. https://doi.org/10.2307/2525981

Oaxaca, R.L., y Ransom, M.R. (1994). On discrimination and the decomposition of wage differentials. Journal of Econometrics, 61(1), 5–21. https://doi.org/10.1016/0304-4076(94)90074-4

Panizza, U. (2001). Public Sector Wages and Bureaucratic Quality: Evidence from Latin America. Economía, 2(1), 97–139. https://doi.org/10.1353/eco.2001.0015

Panizza, U., y Qiang, C.Z.W. (2005). Public-private wage differential and gender gap in Latin America: Spoiled bureaucrats and exploited women? Journal of Socio-Economics, 34(6), 810–833. https://doi.org/10.1016/j. socec.2005.07.022

Papapetrou, E. (2006). The Public-Private Sector Pay Differential in Greece. Public Finance Review, 34(4), 450– 473. https://doi.org/10.1177/1091142106288998

Pederson, P.J., Schmidt-Sørensen, J.B., Smith, N., & Westergård-Nielsen, N. (1990). Wage differentials between the public and private sectors. Journal of Public Economics, 41(1), 125-145.

Poterba, J., y Rueben, K. (1994). The Distribution of Public Sector Wage Premia: New Evidence Using Quantile Regression Methods. Cambridge, MA. https://doi.org/10.3386/w4734

Rathelot, R. (2014). Ethnic differentials on the labor market in the presence of asymmetric spatial sorting: Set identification and estimation. Regional Science and Urban Economics, 48, 154–167. https://doi.org/10.1016/j. regsciurbeco.2014.06.007

Rattso, J., y Stokke, H.E. (2019). Identification of the private-public wage gap. Labour Economics. https://doi. org/10.1016/j.labeco.2019.04.006

Reder, M. (1975). The Theory of Employment and Wages in the Public Sector. En Labor in the Public and Nonprofit Sectors (pp. 1–48). Princeton University Press. Disponible en: http://www.jstor.org/stable/j.ctt13x0wq0.4 (Consultado: 22/01/2020)

Rees, H., y Shuh, A. (1995). Public-private sector wage differential in the U.K. The Manchester School, 63(1), 52–68. https://doi.org/10.1111/j.1467-9957.1995.tb00268.x

Robinson, J. A., Torvik, R., y Verdier, T. (2017). The political economy of public income volatility: With an application to the resource curse. Journal of Public Economics, 145, 243–252. https://doi.org/10.1016/j.jpubeco.2016.11.014

Saari, M.Y., Rahman, M.A.A., Hassan, A., y Habibullah, M.S. (2016). Estimating the impact of minimum wages on poverty across ethnic groups in Malaysia. Economic Modelling, 54, 490–502. https://doi.org/10.1016/j. econmod.2016.01.028

Sanhueza, G.D. (2017). El Estado como empleador. Características del empleo público en Chile (Estudio Exploratorio). Facultad Latin oamericana de Cien cias Sociales., (December), 141–172. Disponible en: https://www. researchgate.net/publication/321825371_El_Estado_como_Empleador_Caracteristicas_del_Empleo_Publico_en_Chile_Estudio_Exploratorio/citations (Consultado: 22/01/2020)

Schultz, T.W. (1961). Investment in Human Capital. The American Economic Review, 51(1), 1–17.

Shahen, M., Kotani, K., y Kakinaka, M. (2019). Wage and labor mobility between public, formal private and informal private sectors in Egypt. Disponible en: https://econpapers.repec.org/RePEc:kch:wpaper:sdes-2019-4 (Consultado: 19/02/2020)

Shahen, M., Kotani, K., y Saijo, T. (2020). How do individuals behave in the intergenerational sustainability dilemma? A strategy method experiment. Available in: https://econpapers.repec.org/RePEc:kch:wpaper:sdes-2020-1 (Consulted: 04/01/2020)

Singleton, C. (2019). The public–private sector wage differential in the UK: Evidence from longitudinal employer– employee data. Economics Letters, 174, 109–113. https://doi.org/10.1016/j.econlet.2018.11.005

Smith, S.P. (1976). Government wage differentials by sex. Journal of Human Resources, 185-199.

Smith, S.P. (1977). Government wage differentials. Journal of Urban Economics, 4(3), 248-271.

Tansel, A., Dalgıç, B., y Güven, A. (2019). Wage Inequality and Wage Mobility in Turkey. Social Indicators Research, 142(1), 107–129. https://doi.org/10.1007/s11205-018-1908-1

Tansel, A., Keskin, H.I., y Ozdemir, Z.A. (2020). Is there an informal employment wage penalty in Egypt? Evidence from quantile regression on panel data. Empirical Economics, 58(6), 2949–2979. https://doi.org/10.1007/ s00181-019-01651-2

Telegdy, Á. (2018). Public wage spillovers: The role of individual characteristics and employer wage policies. Labour Economics, 55, 116–129. https://doi.org/10.1016/j.labeco.2018.08.008

Valasek, J. (2018). Dynamic reform of public institutions: A model of motivated agents and collective reputation. Journal of Public Economics, 168, 94–108. https://doi.org/10.1016/j.jpubeco.2018.10.005

Van Ophem, H. (1993). A Modified Switching Regression Model for Earnings Differentials Between the Public and Private Sectors in the Netherlands. The Review of Economics and Statistics, 75(2), 215. https://doi. org/10.2307/2109426

Vick, B., y Fontanella, G. (2017). Gender, race yamp; the veteran wage gap. Social Science Research, 61, 11–28. https://doi.org/10.1016/j.ssresearch.2016.07.005

Vilerts, K. (2018). The public–private sector wage gap in Latvia. Baltic Journal of Economics, 18(1), 25–50. https:// doi.org/10.108