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GENDER AND RACE INEQUALITIES AMONG STATE AND LOCAL LEVEL BUREAUCRATS IN BRAZIL

Desigualdades de gênero e cor/raça entre os dirigentes municipais e estaduais no Brasil (2010 e 2019)

Desigualdades de género y color/raza entre los burócratas municipales y estatales en Brasil

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ABSTRACT

This article analyzes gender and race inequalities in wages and career progression among state and local-level bureaucrats in Brazil. It draws upon data from the Brazilian official report on labor activities, *Relação Anual de Informações Sociais* (RAIS), provided by *Atlas do Estado Brasileiro* and applies matching and regression techniques to estimate the effects of gender and race on wages and career progression chances. Findings show that there are still strong inequalities between men and women and the White and Black populations. Considering the intersectionalities between gender and race, Black women are at the bottom of the wage and career hierarchy among both state and local-level bureaucrats. Conversely, White men earn the highest wages and occupy the most prestigious career positions.

Keywords: state and local-level bureaucrats, wages, state managers, gender inequalities, race inequalities.

RESUMO

Este trabalho analisa as desigualdades nas remunerações e chances de progressão hierárquica entre os dirigentes municipais e estaduais no Brasil. Utilizando dados da Relação Anual de Informações Sociais adaptada pela equipe do Atlas do Estado Brasileiro, a análise aplica modelos lineares e ordinais, somados ao pré-tratamento dos dados com matching, para estimar os efeitos do gênero e da cor/raça nas remunerações dos dirigentes e em suas chances de progressão no funcionalismo. Os achados indicam que há, ainda, amplas discrepâncias entre os salários e a progressão explicadas pelo gênero e pela cor/raça, com mulheres e negros sendo desfavorecidos com relação a homens e brancos. Em termos interseccionais, a mulher negra ocupa a base da pirâmide dos dirigentes municipais e estaduais, enquanto o homem branco se encontra no topo, tanto em termos remuneratórios quanto hierárquicos.

Palavras-chave: burocracias subnacionais, rendimentos, dirigentes públicos, desigualdades de gênero, desigualdades de cor/raça.

RESUMEN

Este artículo analiza las desigualdades de género y raza en los salarios y la progresión profesional entre los burócratas estatales y municipales en Brasil. El análisis basa en los datos de la Relación Anual de Información Social (Rais) proporcionados por la plataforma Atlas do Estado Brasileiro y aplica correspondencias y regresiones para estimar los efectos del género y la raza en los salarios y las posibilidades de progreso profesional. Los resultados muestran que todavía existen fuertes desigualdades entre hombres y mujeres, por un lado, y blancos y negros, por el otro. Teniendo en cuenta las interseccionalidades entre género y raza, las mujeres negras se encuentran en la parte inferior de la pirámide salarial y profesional entre los burócratas estatales y municipales, mientras que los hombres blancos están en la cima de la pirámide, tanto en términos de remuneración como de jerarquía.

Palabras Clave: burocracias subnacionales, ingresos, gestores públicos, desigualdad de género, desigualdad de color/raza.

INTRODUCTION

An increasing number of studies focusing on inequalities in the public sector have surfaced in recent decades. These studies investigate various topics, such as wage disparities between the public and private sectors, gender-based wage gaps, and wage differences based on workers' races. Also, some research has delved into the variations in bureaucrats' remuneration based on the government branches or levels in which they are employed. The literature indicates that bureaucrats working in the judiciary at the federal level receive higher pay, even when these comparative studies account for factors such as the workers' education and experience (Barbosa & Souza, 2012; Silveira, 2023; Tenoury & Menezes-Filho, 2017).

In essence, a wage premium exists in the public sector, which is not explained by observable worker characteristics such as qualifications or performance, but rather by specific institutional features of state agencies. With respect to differences between government branches and levels, it is noted that employees of the judiciary working at the federal level command higher salaries, as previously mentioned, while bureaucrats of the executive branch working at the local level earn the lowest incomes (Lopez & Guedes, 2020). Importantly, these disparities persist even when factors such as the workers' education are taken into account (Nakamura & Vaz, 2020).

Studies that focus on gender and racial inequalities present different perspectives. Some focus on estimating wage differences between men and women or between Black and White populations. Others operationalize concepts such as the glass ceiling to evaluate and explain the low proportion of women and Black people in senior public administration positions. These two strategies are also often combined. In general, studies focused on the salary aspect have found the maintenance of considerable salary advantages for male workers compared to female workers (Lopez & Guedes, 2020; Severi & Jesus Filho, 2021; Vaz, 2013, 2018) and for White people compared to Black people (Lima & Vaz, 2020; Silveira & Almeida, 2021).

Glass ceilings are characterized by informal, practical, and symbolic barriers that emerge through social interaction patterns (such as the exclusion of female workers from socialization opportunities in the workplace) and impede the advancement of women and Black individuals to high-ranking positions in public management (Pinheiro, 2023). Studies have discovered that glass ceilings reduce the representation of both groups as one ascends the management hierarchy. For instance, among those occupying senior management and advisory roles (known as DAS in Brazilian public administration, with numbers increasing in order to indicate higher ranks), women and Black individuals are significantly more prevalent in DAS-1 positions, which carry less responsibility and lower salaries, than in DAS-6 positions (D'Araújo & Macedo, 2018; Pinheiro, 2023; Silva & Lopez, 2021).

This article adds to the discourse on gender and race inequalities by examining salary and hierarchical discrepancies among state and municipal public managers. The majority of research in Brazil concentrates their analyses at the federal level, partly due to the availability of higher-quality data through the Integrated Personnel Administration System (SIAPE) (Pinheiro, 2023; Silva & Lopez, 2021). Typically, studies that extend beyond the federal domain utilize the National Household Sample Survey (PNAD), which offers localized data (Lima & Vaz,

2020; [Silveira & Almeida, 2021](#)). The third strategy, the most prevalent approach, is based on distributing surveys to bureaucrats in specific positions or careers, such as DAS ([D'Araújo, 2018](#)).

The *Relação Anual de Informações Sociais* (RAIS) is an annual social information report published in Brazil. It stands as the only quasi-census database for the civil service in the country. Despite this, it has been underutilized in research, primarily due to the low quality of data on the variable of race ([Silveira, 2022](#)). This research employs a modified version of RAIS, prepared by the team behind the *Atlas do Estado Brasileiro* (Brazilian State Atlas) project, an initiative of the Institute of Applied Economic Research (IPEA). The project provided an imputed version of the race variable, enabling the study to analyze state and municipal managers and further the discussion.

The structure of the text is as follows. Initially, it reviews the findings in the literature to date and identifies the gaps that need to be explored concerning gender inequalities. Subsequently, a similar process is undertaken for race inequalities. Following this, the data and methodology are introduced. The results are then presented and discussed. The concluding section encompasses a discussion and final considerations, highlighting the existence of significant salary disparities between White and Black populations, men and women, and most notably, between White men and Black women.

GENDER INEQUALITIES IN PUBLIC ADMINISTRATION

Numerous studies have revealed profound gender inequalities in the Brazilian job market, both in the public and private sectors. These disparities manifest in wage and hierarchical differences, with women earning less and facing more obstacles to career advancement ([Vaz, 2013](#)). Despite the considerable expansion of women's participation across all sectors of the labor market since the 1970s in Brazil and the closure of the educational gender gap, substantial wage inequality persists, favoring men ([Itaboraí, 2016](#)).

These inequalities are present in several countries and economic sectors, such as among private sector executives in France ([Marry & Pochic, 2017](#)) and male and female engineers in Brazil ([Lombardi, 2006](#)). In the Brazilian public sector, case studies carried out in universities and public bodies found patterns of salary and hierarchical inequalities and documented female strategies to overcome the glass ceiling and reach command positions ([Barbosa & Oliveira, 2021](#)).

In the public sector, the expectation was that salary inequality and access to senior positions between men and women would be almost non-existent, given that the selection process takes place through a public competition ([Vaz, 2013](#)). However, this is not what happens. [Lopez and Guedes \(2020\)](#) showed that women are the majority of the public workforce. However, they are mainly occupied in positions at the municipal and state levels, with average salaries lower than those at the federal level, where men predominate. Furthermore, their activities are concentrated in social services such as health and education, positions historically seen as more “feminine” due to the pattern of sexual division of labor, which also have lower remuneration than planning and management functions, dominated by men.

Similarly, studies have shown that even taking into account variables such as education and length of service, female public administration workers have lower average incomes than male workers (Vaz, 2018) and lower chances of progressing in management roles, such as DAS (Vaz, 2013). Even in careers with high social prestige, such as the judiciary, women systematically have lower average salaries than men (Severi & Jesus Filho, 2021). Black women, in turn, have even lower chances of progressing in their careers. For example, their presence at the top of the DAS hierarchy was just 2% in 2020 (Pinheiro, 2023).

These differences are explained, in part, by the action of the so-called glass ceiling, which limits the rise of women to management and leadership positions in public administration. The glass ceiling concept refers to practical and symbolic obstacles to women's career advancement. Among its main expressions, Vaz (2018) identifies the overload of domestic work, which falls on the female gender, limiting their availability for travel and longer working hours and, therefore, their progression in public careers. The main foundation of the glass ceiling by gender is, therefore, the sexual division of labor, understood as the form of division of social work resulting from social relations between the sexes, assigning priority to men in the productive sphere and women in the reproductive sphere (Hirata & Kergoat, 2008).

Thus, there is consensus in the literature on gender inequalities that women receive, on average, lower salaries than men and face more significant difficulties in reaching leadership positions, both in the private and public sectors. In the latter case, however, an important gap remains to be filled. Most of the available studies focus on analyzing sample databases for the group of public sector workers, such as the National Household Sample Survey (PNAD) (Vaz, 2018), on specific careers or groups of employees (D'Araújo & Macedo, 2018; Severi & Jesus Filho, 2021; Vaz, 2013), or in case studies focused on specific institutions (Barbosa & Oliveira, 2021). Regarding public administration managers, only works focused on DAS were identified (Pinheiro, 2023; Silva & Lopez, 2021; Vaz, 2013).

Therefore, there is room to advance in understanding gender pay and hierarchical inequalities in public administration, particularly in states and municipalities. This article seeks to advance this field of studies by analyzing public managers at the state and municipal levels. Based on the literature examined, the hypotheses to be tested are:

H1: On average, female public managers at subnational levels receive lower salaries than male managers;

H2: On average, female public managers at subnational levels have lower chances of moving up the career ladder when compared to male managers

RACE INEQUALITIES IN BRAZILIAN PUBLIC ADMINISTRATION

Race occupies a central place among the various factors that explain social inequalities in Brazil. Several studies carried out in different periods demonstrated the wide inequality in income and opportunities between White and Black populations (Osório, 2006). Such inequalities date back to when Brazil was built as a nation-state and showed slow improvement. In 1987, for example,

the average labor income of a Black man was about 90% of that of a White man, while that of a Black woman was only 50%. In 1998, these percentages remained basically stable (Soares, 2000). This scenario has not changed significantly in recent years, with Black people still having systematically lower salaries than White people in 2015 (Lima & Vaz, 2020).

Social inequality, as influenced by race, is evident in various sectors of Brazilian society, including public administration. Although a limited number of studies on race focus on workers in the Brazilian public sector due to the scarcity of data at the state and municipal levels, there is some supporting evidence. Utilizing data from PNAD, Lima and Vaz (2020) demonstrated that Black individuals encounter a funneling process when nearing the apex of the functional hierarchy in the public sector. Compared to their White counterparts, their income differentials expand as they approach the highest percentiles of the income distribution, indicating the existence of a phenomenon akin to the glass ceiling observed in gender studies. Black individuals earn less than White individuals even when they share the same observable characteristics (education, experience, occupational sector). Additionally, based on the PNAD, Silveira and Almeida (2021) observed an increase in the participation of Black women among all statutory public administration employees between 2012 and 2019, rising from 30% to 33%, while the percentage of Black men remained stable at 20%. Despite being a minority, White men received the highest average salaries in 2019.

The factors that explain remuneration and hierarchical inequalities motivated by racial criteria are similar to those of gender inequalities. Just as women are often perceived as less capable of occupying management positions and exercising power, Black people, both men and women, are also structurally perceived as less capable of holding roles of greater prestige and complexity. The existence of these structural factors facilitates the vertical progression of White people, especially men, creating informal barriers to the advancement of Black people and, particularly, Black women (Pinheiro, 2023; Silva & Lopez, 2021).

Silva and Lopez (2021), for example, demonstrated that although Black people accounted for 51% of those employed in the public sector in 2019, only 14% were at the federal level, with the highest salaries. Most Black people, 55%, were employed at the municipal level, where salaries are the lowest in the public service. Among workers of the executive branch at the federal level, Silva and Lopez (2021) concluded, using data from SIAPE, that Black people corresponded in 2020 to just 27% of the total number of employees in higher positions against 66% of White people; in mid-level positions, the percentages were 44 and 46%, respectively.

When we shift our focus to the bureaucracy at the federal executive branch, inequalities resurface, albeit with a slight trend towards change. Over recent decades, a survey by D'Araújo (2018) observed an increase in the participation of Black individuals in senior Brazilian federal management roles, specifically in DAS-5, DAS-6, and some other specific positions (cargos de natureza especial). This increased from 8% during the second term of President Fernando Henrique Cardoso to 18% in the initial years of President Dilma Rousseff's tenure. However, in 2020, Silva and Lopez (2021) examined data from SIAPE and discovered significant inequality in the distribution of Black individuals across different levels of DAS. There was a pronounced concentration in DAS-1, which carries less responsibility and offers lower salaries, with a steady

decrease as the hierarchy ascended. Among the DAS-6, the pinnacle of the hierarchy, Black men and women accounted for only 15% of the total.

After a prolonged period of overlooking the issue of racial inequality, Brazilian governments, at both national and subnational levels, began to address the issue more earnestly in the 2000s. The practical outcomes of this shift included reserving places for Black individuals in universities and the federal public service and establishing the Secretariat of Policies for the Promotion of Racial Equality in 2003. While these represent significant strides, such institutional initiatives appear insufficient to overcome the historical challenges (Silva, 2023). For instance, in the federal public service, the short-term effects of reserved vacancies remain minimal due to the substantial existing disparities, as evidenced by the continued underrepresentation of Black men and women in higher-paying roles and positions in 2020 (Pinheiro, 2023; Silva & Lopez, 2021).

The majority of available studies have primarily relied on data from SIAPE (Pinheiro, 2023; Silva & Lopez, 2021), PNAD (Lima & Vaz, 2020; Silveira & Almeida, 2021), and questionnaires distributed to employees and bureaucrats at the federal level (D'Araújo, 2018). The focus on PNAD is due to its status as the most reliable source of information on race for civil servants until recently. However, PNAD is a sample survey and is not representative of the entire country. The available quasi-census data sources are SIAPE and RAIS. The former has been extensively utilized in research on racial inequalities due to the systematic improvement in recording its race variable over the past decade (Pinheiro, 2023; Silva & Lopez, 2021). However, its scope is limited to the federal Executive. RAIS, on the other hand, has historically faced issues with recording the race variable (Silveira, 2022).

Nonetheless, a procedure for imputing the race variable in RAIS, carried out by the team from the Brazilian State Atlas project from IPEA in 2020, reduced its non-completion rate to zero (Silveira, 2022). This has enabled the execution of unprecedented studies on racial inequalities, particularly in subnational entities, which were previously overlooked due to the lack of reliable data. For instance, Teles (2023) demonstrated that Black workers were predominantly among the 10% with the lowest salaries at all three levels of public administration (federal, state, and municipal) in 2010 and 2019, being a minority among the 10% with higher incomes.

This article aims to contribute to the advancement of knowledge about racial inequalities in public administration by examining remuneration and hierarchical discrepancies among managers at the subnational level (state and municipal) in Brazil. It utilizes data from RAIS, imputed by the Brazilian State Atlas team. The primary hypotheses to be tested about race inequalities are as follows:

H3: On average, Black public managers at subnational levels have lower remuneration than White managers;

H4: On average, Black public managers at subnational levels have lower chances of moving up the career ladder than White managers.

Furthermore, given the importance of the intersectionality of the gender and race variables to explain the chances of hierarchical and salary advancement in the Brazilian labor market (Pinheiro, 2023; Silva & Lopez, 2021), this research also tests salary differentials and chances of

vertical progression among state and municipal managers by crossing the explanatory variables of gender and race. Therefore,:

H5: On average, Black female public managers at subnational levels have the lowest remuneration, followed by White and Black managers, while White men occupy the top of the remuneration pyramid;

H6: On average, Black female public managers at subnational levels have the lowest chances of moving up the career ladder, followed by White and Black managers, while White men occupy the top of the hierarchical pyramid.

DATA AND METHODOLOGY

The race variable

This article uses data from RAIS for 2010 and 2019 to test the hypotheses. The main advantage of RAIS is that it is a quasi-census base (Silveira, 2022). The years cut was chosen to provide the possibility of longitudinal comparisons of the analyzed indicators.

Data on race in Brazilian public administration have substantial limitations, particularly in states and municipalities. At the federal level, the quality of filling out race information in SIAPE has improved significantly in recent years, but the same did not occur in RAIS (Silva & Lopez, 2021). As a solution, the Brazilian State Atlas project team from IPEA developed an imputation strategy that significantly reduced the non-completion of the variable. Firstly, race records were searched in previous years for omitted cases in 2019, with the most frequent race classification being assigned to the individual for all the years they were present at RAIS. Second, a multiple imputation algorithm was applied, the multiple imputation by chained equations. The result was the reduction of non-completion of the race variable to 0% (Silveira, 2022).

The adopted strategy presents some limitations. The main one is the over-representation of predominant groups (White and Brazilian Pardo) and under-representation of minority groups (Asian and Indigenous, mainly). To improve the reliability of the estimates, Silveira (2022) suggested excluding Asian and Indigenous people from the analysis, in addition to bringing together Pardo and Black people under one single category (“Black”), suggestions adopted in this work.

Identification strategy

Municipal managers are those identified by code 111415 in the Brazilian Classification of Occupations (CBO 2002), while state managers are identified by code 111410. This article analyzes the total number of public sector workers classified with these CBOs in 2010 and 2019.

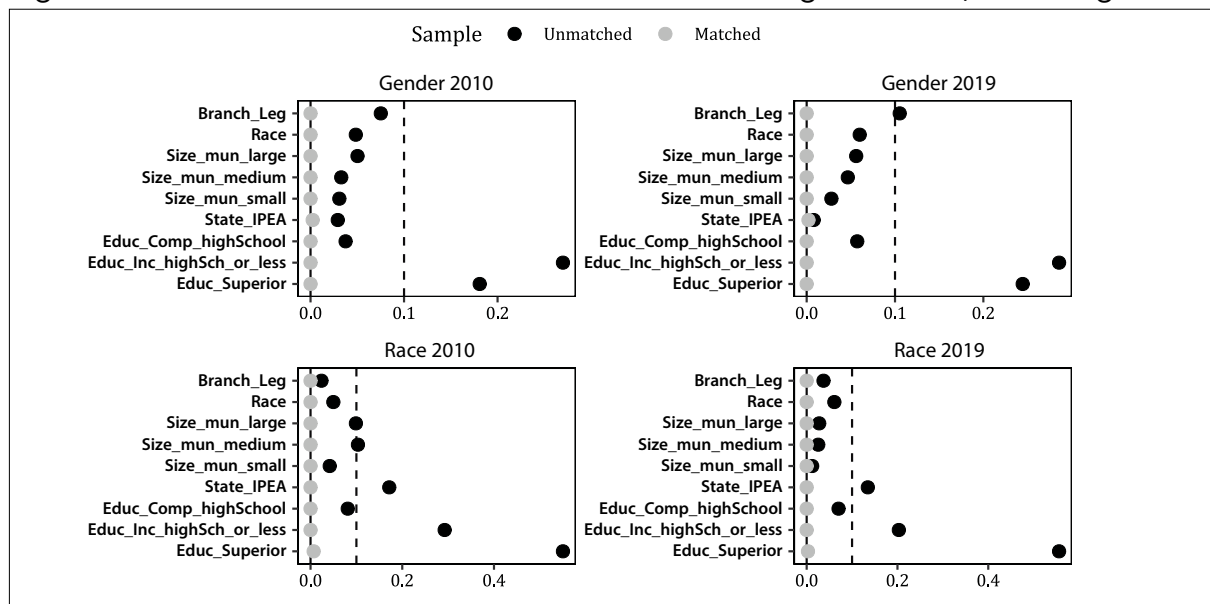
This article integrates data pre-treatment with Coarsened Exact Matching (CEM) and linear and ordinal models (representing income and hierarchical progression of managers, respectively) to discern the impacts of gender and race variables on salaries and the likelihood of hierarchical progression in bureaucratic careers. The application of matching is advocated for studies with binary explanatory variables, rendering the treatment groups (in this case, women

and Black individuals) and the control groups (men and White individuals) comparable in terms of specified covariates. This characteristic of matching diminishes the probability of bias in the estimation, particularly the omitted covariate bias (Morgan & Winship, 2015). Conversely, CEM is a type of matching with superior performance and reliability compared to techniques based on propensity scores and Mahalanobis distance (Iacus et al., 2012). Moreover, matching has been deemed comparatively superior to techniques traditionally employed in income models, such as Oaxaca-Blinder, due to its reduced susceptibility to biases like omitted covariates and endogeneity (Ñopo, 2008).

Eight distinct matchings were conducted, one for each government level (state and municipal) and one for each year (2010 and 2019) for each explanatory variable (gender and race). This pairing significantly diminished the differences between the treatment and control groups, enhancing the reliability of the computed estimates and reducing the likelihood of bias (Morgan & Winship, 2015), all while maintaining the number of cases analyzed without substantial alterations. The covariates employed in matching included branches of government (executive, legislative, or judiciary), education, municipality size (small for less than 50 thousand inhabitants; medium for more than 50 thousand and less than 99,999; large for more than 100 thousand inhabitants), state, gender, or race. In the gender databases, race was utilized as a covariate. Conversely, in the race databases, gender was applied. The differences in mean covariates between the treatment and control groups before and after matching are illustrated in Figures 1 (municipal) and 2 (state).

For municipal managers, matching improved the balance of covariates considerably, with the differences in means (x-axis) between the treatment and control groups reducing to almost zero after matching.

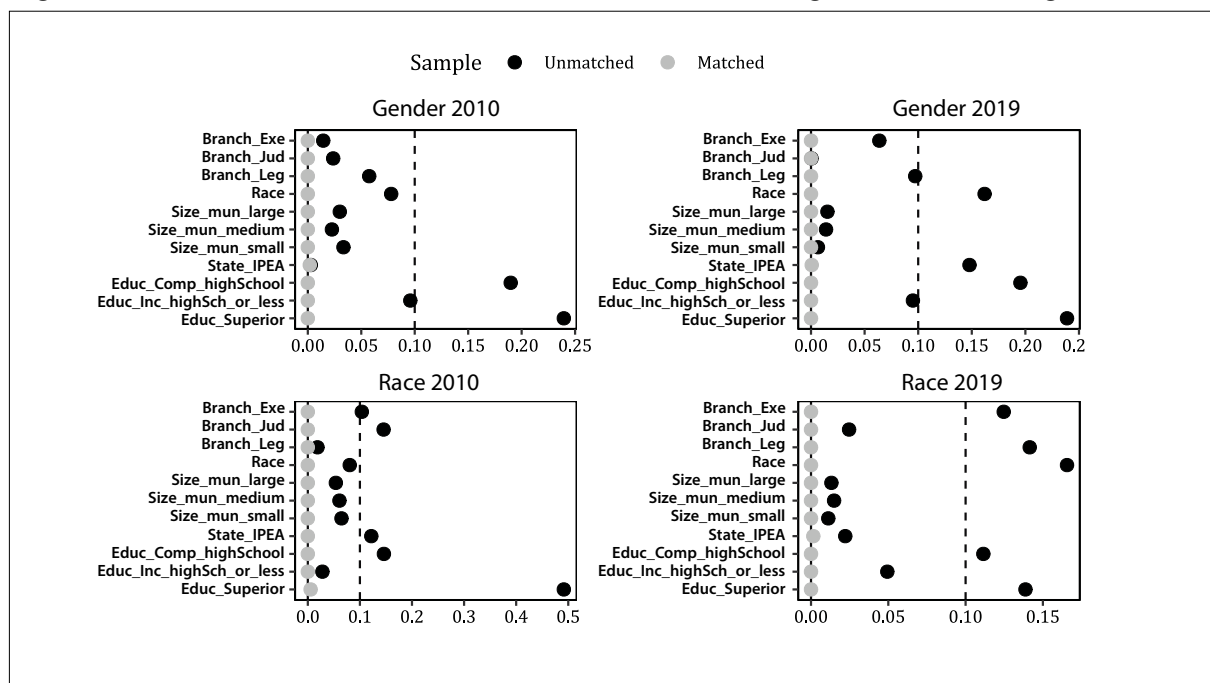
Figure 1. Balance of covariates before and after matching for municipal managers



Source: Elaborated by the author.

For data referring to state managers, differences in means were also substantially reduced, achieving a balance of covariates between the treatment and control groups.

Figure 2. Balance of covariates before and after matching for state managers



Source: Elaborated by the author.

The dependent variables analyzed were salaries, deflated by the National Consumer Price Index (INPC) of March 2022, and hierarchical categories based on income declared in RAIS, applied as a proxy for progression in the management position. These categories were constructed based on remuneration quintiles for each year and group of managers (municipal and state in 2010 and 2019), generating five progression bands in positions for each year and government level, each containing 20% of managers.

Descriptive statistics

This research analyzes 338,298 municipal managers in 2010 and 414,476 in 2019; and 336,523 state managers in 2010 and 540,504 in 2019. Table 1 shows this sample separate in terms of gender and race. The largest group comprises White women, followed by White men, Black women, and Black men.

Table 1. Percentage of municipal and state managers and year

YEAR	LEVEL	WHITE MAN (%)	WHITE WOMAN (%)	BLACK MAN (%)	BLACK WOMAN (%)
2010	Municipal	28.97	34.22	17.79	19.02
2019	Municipal	27.66	33.82	18.50	20.01
2010	State	28.53	37.54	16.01	17.92
2019	State	27.02	42.21	14.55	16.22

Source: Elaborated by the author.

Table 2 provides the first evidence of gender inequalities among managers at the subnational level. In 2010, male municipal and state managers had higher average salaries than women, which continued in 2019. In terms of proportional differences, there were significant drops at the municipal level but not at the state level.

Table 2. Average salaries of public managers by federative level, year, and gender

MUNICIPAL				STATE		
YEAR	FEMALE (BRL)	MALE (BRL)	DIFFERENCE (%)	FEMALE (BRL)	MALE (BRL)	DIFFERENCE (%)
2010	3.984	5,025	20.7	6,220	8,205	24.2
2019	3.690	4,358	15.3	5,339	6,963	23.3

Source: Elaborated by the author.

Table 3 shows the first results regarding pay inequalities by race. In 2010, Black managers received lower average salaries at both the municipal and state levels than their White counterparts. The gap is greater at the municipal level. Between 2010 and 2019, in both states and municipalities, there was a reduction in the salary discrepancy between the two groups, with a more significant drop in the states.

Table 3. Average salaries of public managers by government level, year, and race

MUNICIPAL				STATE		
YEAR	BLACK (BRL)	WHITE (BRL)	DIFERENÇA (%)	BLACK (BRL)	WHITE (BRL)	DIFFERENCE (%)
2010	3,683	4,930	25.3	6,651	7,337	9.35
2019	3,401	4,373	22.2	5,885	6,071	3.07

Source: Elaborated by the author.

When looking at the intersection between gender and race, Black women occupy the base of the pyramid of average salaries for municipal managers. In 2010, they received more than BRL 2,000 less than White men. In 2019, this difference fell to just over BRL 1,600, a value that is still significant (Table 4).

Table 4. Average salaries of municipal public managers by year, gender, and race

YEAR	BLACK WOMAN (BRL)	WHITE WOMAN (BRL)	BLACK MAN (BRL)	WHITE MAN (BRL)
2010	3,384	4,318	4,004	5,652
2019	3,238	3,958	3,578	4,880

Source: Elaborated by the author.

In the states, again, Black women had the lowest average salaries. Black or Pardo female directors showed a discrepancy of more than BRL 2,700 compared to White men. In 2019, the difference was reduced to BRL 1,917 (Table 5).

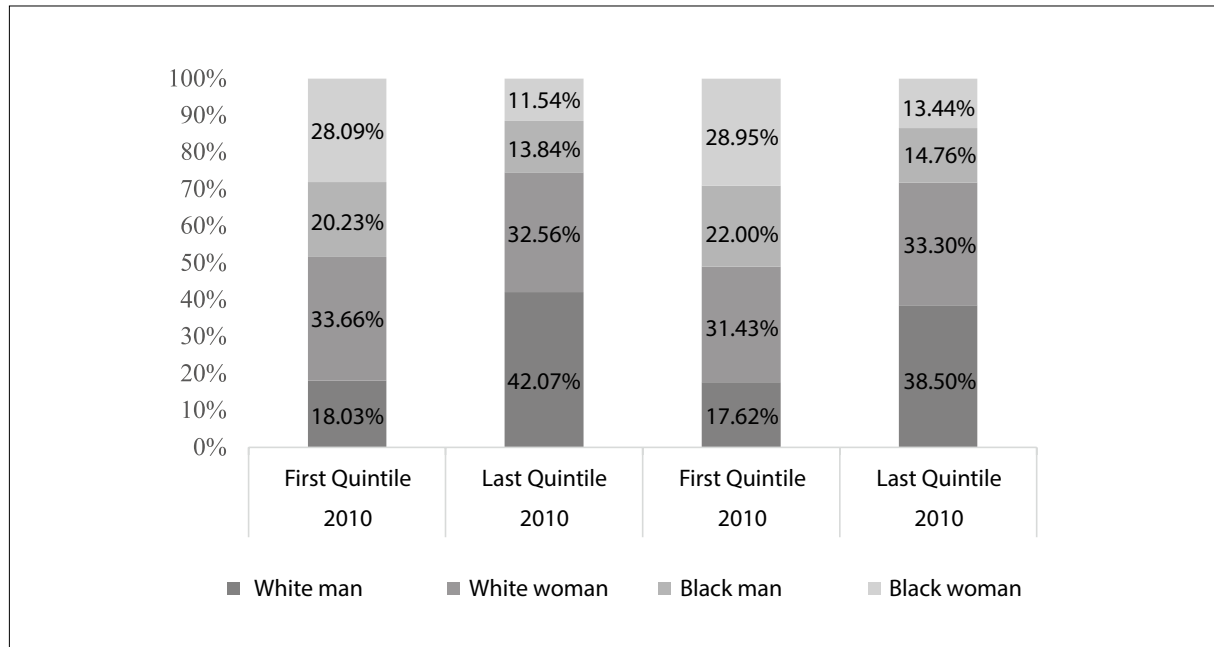
Table 5. Average salaries of state public managers by year, gender, and race

YEAR	BLACK WOMAN (BRL)	WHITE WOMAN (BRL)	BLACK MAN (BRL)	WHITE MAN (BRL)
2010	5,827	6,408	7,573	8,560
2019	5,238	5,377	6,606	7,155

Source: Elaborated by the author.

Figure 3 shows the percentage of municipal managers based on the intersectionality between gender and race. White men are the majority in the last quintile, with the highest remuneration in 2010 and 2019. Black women, in turn, are a notable minority in the highest remuneration level and much more present in the first quintile.

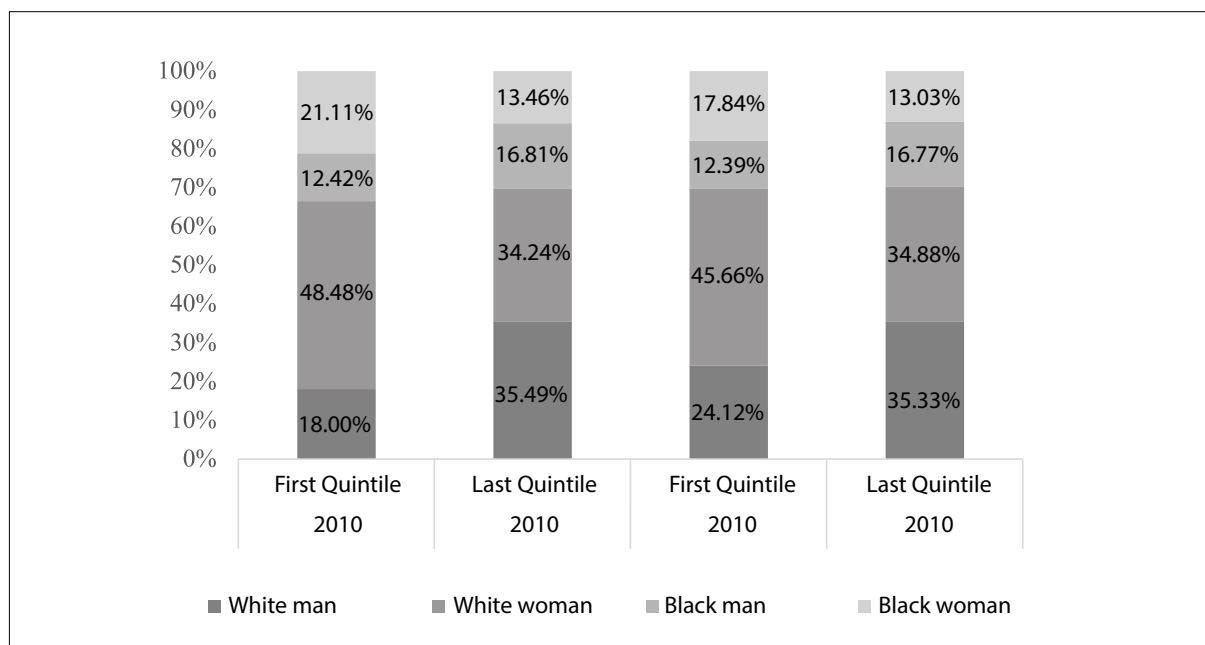
Figure 3. Percentage of municipal managers per race and gender in the first and last quintile of remuneration (2019)



Source: Elaborated by the author.

Figure 4 shows the percentage of state managers based on the intersectionality between gender and race in 2010 and 2019. White men are at the top of the pyramid, being overrepresented in the quintile representing the highest salaries. Black women are vastly underrepresented in both groups and appear even less frequently in top hierarchical positions.

Figure 4. Percentage of state managers per race and gender in the first and last quintiles of remuneration (2019)



Source: Elaborated by the author.

RESULTS

Gender

The indicators presented in the section on descriptive statistics introduce the issues discussed in this study. In contrast, this section shows the results of the hypotheses tests. Table 6 shows the coefficients for the effect of the variable gender (female) on the remuneration of municipal managers in 2010 and 2019 and how it affected the chances of ascending in the hierarchy of positions by race, municipality size, branch (executive, legislative, or judiciary), and education.

Female municipal managers received an average of BRL 1,265.46 less than their male counterparts in 2010. In 2019, this discrepancy was reduced to BRL 884.60, an amount still considered high. The results have high statistical significance within a 99% confidence interval. To calculate these results, linear models were used with the remuneration variable reported in RAIS deflated by the INPC of March 2022. The coefficients demonstrate the existence of a strong and persistent gender inequality. At the rate of proportional decline observed, around 30% over 10 years, it would take another half-century for the difference in remunerations to reach close to BRL 100.

In reference to models that utilize five remuneration bands, segmented based on quintiles, as indicators for the hierarchy of municipal managers, observations from 2010 showed that

women were 45% less likely than men to ascend the hierarchy. By 2019, this disparity had decreased to 40%, marking a modest improvement.

Table 6. Gender inequalities among municipal managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	5,481.21***	4,596.36***		
	(18.26)	(13.81)		
Female	-1,265.46***	-884.60***	-0.61***	-0.51***
	(15.53)	(11.64)	(0.01)	(0.01)
Model type	Linear	Linear	Ordinal	Ordinal
Controls	Sim	Sim	Sim	Sim
R ²	0.18	0.16		
Adj. R ²	0.18	0.16		
Num. obs.	338,225	414,448	33,825	41,448
AIC			986,578.11	1,221,986.09
BIC			986,696.16	1,222,106.37
Log Likelihood			-493,278.06	-610,982.05
Deviance			986,556.11	1,221,964.09

adj. R²: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; ***p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

Table 7 shows the results for state managers. Gender inequality among state managers is even more pronounced than at the municipal level. In 2010, female managers received an average of BRL 2,140.72 less than men, controlling for other factors. In 2019, the difference fell to BRL 1,136.85, which is still quite significant. However, the decline pace is more pronounced than in municipalities: 47% over 10 years. Thus, in four decades, the difference would fall below BRL 100.

Regarding the chances of progression in the position of state managers estimated using the five salary bands as a proxy for hierarchy, female managers were 50% less likely than male managers in 2010 to move up the career ladder. In 2019, the difference in chances was reduced to 32%.

Table 7. Gender inequalities among state managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	4,956.10***	4,389.62***		
	(33.40)	(18.69)		
Female	-2,140.72***	-1,136.85***	-0.69***	-0.39***
	(28.50)	(16.40)	(0.01)	(0.01)
R ²	0.16	0.17		
Adj. R ²	0.16	0.17		
Num. obs.	336,448	540,429	336,448	5,404.29
AIC			999,779.3	1,636,743.94
BIC			999,908.55	1,636,878.34
Log Likelihood			-499,877.92	-818,359.97
Deviance			999,755.83	1,636,719.94

adj. R²: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; ***p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

Consequently, the observed results validate hypotheses H1 and H2 at both the municipal and state levels, considering all Brazilian municipalities and states that had public managers registered with RAIS in 2010 and 2019. In the context of census data, significant disparities exist between genders in terms of remuneration and opportunities for career progression for women in the role of public managers in subnational entities.

Race

The results for remuneration inequalities and chances of vertical progression between Black (Black and Pardo populations) and White people for the position of municipal public manager can be seen in Table 8. On average, Black managers received BRL 327.85 a year less than White managers in 2010. In 2019, this difference fell to BRL 252.61, a reduction of 23%, controlling for other factors. Although smaller than the observed gender discrepancies, it is still a notable difference. At this rate, for the difference to reach less than BRL 100, it would take three decades.

Regarding the chances of progressing in the career of state manager, Black people were 16% less likely to reach higher positions than White people in 2010. In 2019, the difference fell to 15%, showing the resilience of the indicator.

Table 8. Color or race inequalities among municipal managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	4,618.96***	3,999.04***		
	(15.68)	(12.42)		
Race Black	-327.85***	-252.61***	-0.18***	-0.16***
	(14.48)	(11.09)	(0.01)	(0.01)
R ²	0.14	0.13		
Adj. R ²	0.14	0.13		
Num. obs.	338,055	414,349	338,055	414,349
AIC			1,000,576.68	1,235,248.05
BIC			1,000,694.72	1,235,368.33
Log Likelihood			-500,277.34	-617,613.02
Deviance			1,000,554.68	1,235,226.05

R²: R-squared; adj. R²: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; ***p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

For the position of state public manager, Table 9 shows greater inequalities than at the municipal level in terms of remuneration but lower inequalities in terms of the chances of vertical progression. In 2010, Black managers received an average of BRL 315.60 less than White managers, a difference that increased in 2019 to BRL 396.47. This article's first finding points to the resurgence of inequalities, which becomes even more worrying considering the approval of affirmative actions at a subnational level in the 2010s (Silva, 2023).

Regarding the chances of career progression as a state manager, Black people were 8% more likely than White people in 2010, controlling for other factors. This result, however, was reversed in 2019, when Black people had 8% fewer chances. Again, this is an unexpected trend, considering the institution of affirmative action policies.

Table 9. Race inequalities among state managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	5,186.13***	4,978.26***		
	(28.70)	(17.60)		
Race Black	-315.60***	-396.47***	0.08***	-0.08***
	(28.96)	(18.42)	(0.01)	(0.01)
R ²	0.15	0.17		
Adj. R ²	0.15	0.17		
Num. obs.	336,224	540,215	336,224	540,215
AIC			1,019,386.21	1,626,061.28
BIC			1,019,514.92	1,626,195.67
Log Likelihood			-509,681.11	-813,018.64
Deviance			1,019,362.21	1,626,037.28

R²: R-squared; adj. R²: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

The results corroborate hypotheses H3 and H4 for municipal managers. H3 is also confirmed at the state level, with noticeable remuneration discrepancies that increased between 2010 and 2019. However, the odds ratios for vertical progression must be interpreted with greater caution, given the low magnitude of indicators (only 8% and -8%, respectively) and their instability over time.

Gender and race

In addition to analyses that distinguish between the categories of gender and race, studies have shown that glass ceilings impose a greater burden on Black women in sectors outside of public administration (Pinheiro, 2023; Silva & Lopez, 2021). Consequently, an intersectional analysis of the effects of gender and race on remuneration and the likelihood of advancement in the roles of municipal and state public managers was conducted. In this instance, the results should be interpreted with caution, as the use of matching was not feasible given that the explanatory variable in question has four levels (“Black woman,” “Black man,” “White woman,” and “White man”), which increases the risk of omitted covariate bias. In this case, linear (remuneration)

and ordinal (hierarchical progression) regressions were employed, taking into account state, municipality size, branch, and the bureaucrats' education.

Table 10 shows the results for municipal managers. The reference category is "White men." Thus, Black male managers received an average of BRL 757.47 less than White men in 2010, which was reduced to BRL 621.25 in 2019. White women received BRL 1,511.20 less than men of the same race, a value that was reduced to BRL 1,061.44 in 2019, controlled by other factors. Black female managers occupy the base of the municipal managers' remuneration pyramid, with average salaries of BRL 1,542.39 lower than those of White men in 2010. In 2019, the difference reduced to BRL 1,202.20, down 20%. At this rate, Black female municipal managers would earn values similar to those of White male managers in at least seven decades.

In terms of opportunities for hierarchical progression, White men continue to occupy the apex of the pyramid. Black male managers were 29% less likely to ascend to higher hierarchical positions than White male managers in 2010 and 2019. White female managers had a 54% and 47% lower likelihood, respectively, in 2010 and 2019. Black women remain at the base of the hierarchical pyramid among municipal managers, with a 57% lower probability of vertical progression in 2010 and 54% in 2019.

Table 10. Gender and race inequalities among municipal managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	5.507,03***	4.564,83***		
	(69.94)	(43.16)		
Black man	-757.47***	-621.25***	-0.34***	-0.34***
	(23.74)	(17.60)	(0.01)	(0.01)
White woman	-1,511.20***	-1,061.44***	-0.78***	-0.63***
	(18.96)	(14.44)	(0.01)	(0.01)
Black woman	-1,542.39***	-1,202.20***	-0.85***	-0.79***
	(23.56)	(17.35)	(0.01)	(0.01)
R ²	0.21	0.20		
Adj. R ²	0.21	0.20		
Num. obs.	338,298	414,476	338,298	414,476
AIC			955,807.44	1,184,467.72

(continue)

(conclusion)

Table 10. Gender and race inequalities among municipal managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
BIC			956,204.51	1,184,872.31
Log Likelihood			-477,866.72	-592,196.86
Deviance			955,733.44	1,184,393.72

R2: R-squared; adj. R2: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; ***p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

Table 11 shows the coefficients obtained for state managers. Black men presented salary discrepancies similar to those at the municipal level, with salaries on average BRL 700 and BRL 650 lower than those of White men in both years. White female managers, however, had a considerably higher pay gap: BRL 2,143.04 in 2010, more than three times the difference for Black men, and BRL 1,541.67 in 2019. At the state level, Black women occupy the base of the salary pyramid, receiving an average of BRL 2,727.94 less than White men in 2010 and BRL 1,839.90 in 2019. This is the highest salary inequality observed in this study. The reduction in the gap between 2010 and 2019 was 33%, indicating that it would take more than half a century for Black female state managers to reach salary levels with less than BRL 100 difference in relation to White men, counting from 2019 onward.

Regarding the odds ratios of vertical progression in the position of state manager, Black men had the smallest disadvantage compared to White men: 8% and 11%, respectively, in 2010 and 2019. White women had a 59% lower chance in 2010 to 43% in 2019. Black women, in turn, had disadvantages similar to those of White women: 58% in 2010 and 46% in 2019.

Table 11. Gender and race inequalities among state managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
(Intercept)	1,658.25***	-1,169.89***		
	(169.86)	(102.59)		
Black man	-703.43***	-656.80***	-0.08***	-0.11***
	(43.90)	(26.70)	(0.01)	(0.01)
White woman	-2,143.04***	-1,541.67***	-0.90***	-0.57***
	(32.87)	(20.22)	(0.01)	(0.01)

(continue)

(conclusion)

Table 11. Gender and race inequalities among state managers

	REMUNERATION 2010	REMUNERATION 2019	HIERARCHY 2010	HIERARCHY 2019
Black woman	-2,727.94***	-1,839.99***	-0.86***	-0.61***
	(42.97)	(26.06)	(0.01)	(0.01)
R ²	0.26	0.23		
Adj. R ²	0.26	0.23		
Num. obs.	336,523	540,504	336,523	540,504
AIC			898,112.89	1,587,456.96
BIC			898,531.22	1,587,893.77
Log Likelihood			-449,017.44	-793,689.48
Deviance			898,034.89	1,587,378.96

R²: R-squared; adj. R²: adjusted R-squared; Num. obs.: number of observations; AIC: Akaike Information Criterion; BIC: Bayesian Information Criterion; ***p < 0.001; **p < 0.01; *p < 0.05.

Source: Elaborated by the author.

The data in Tables 10 and 11 confirm hypotheses H5 and H6 at municipal and state levels. In 2010 and 2019, Black female managers at these two subnational levels had the lowest average salaries and lowest chances of progressing vertically in their careers, behind White women, Black men, and White men, in that order. Black female managers, therefore, occupy the base of the pyramid of these positions in civil service, while White managers are at the top.

DISCUSSION AND FINAL CONSIDERATIONS

Few studies have examined racial inequalities in the Brazilian public service, particularly among subnational entities, due to the poor quality of data recorded on this subject. Additionally, the literature review for this research identified numerous publications on gender, but they predominantly focused on bureaucrats working at the federal level. Therefore, this study introduces an innovative approach by utilizing a version of the Brazilian report RAIS, made available by the Brazilian State Atlas project from IPEA. It analyzes the effects of race and gender on salaries, as well as the opportunities for career progression of Brazilian state and municipal public managers, combining data pre-treatment with matching and the use of regressions. Several key conclusions were drawn.

Firstly, with respect to gender inequalities, the findings highlight significant discrepancies in both average salaries and opportunities for progression in the roles of municipal and state managers. In this regard, the analysis reaffirms, for subnational entities, findings previously observed for federal public managers, such as DAS, where female representation becomes less common in higher-ranking positions (Pinheiro, 2023; Vaz, 2013). As for civil servants as a whole, studies utilizing the PNAD have already demonstrated the existence of salary inequalities by gender (Vaz, 2018), and others using RAIS found an overrepresentation of females among the 10% with the lowest salaries across the three federative levels and underrepresentation among the 10% with the highest salaries (Teles, 2023). Jobs focused on specific careers, such as those in the judiciary branch, also revealed considerable salary gaps (Severi & Jesus Filho, 2021). This work extends this set of empirical analyses by showing that salary discrepancies unfavorable to women are also applicable to state and municipal managers.

Regarding racial inequalities, this study is among the first to analyze state and municipal public managers separately, concluding that Black municipal and state managers receive lower average salaries than their White counterparts and, in the case of municipalities, they also have fewer opportunities for vertical progression. Previous works either analyzed the entirety of the civil service with the PNAD (Lima & Vaz, 2020; Silveira & Almeida, 2021), focused on the federal level with data from SIAPE (Pinheiro, 2023; Silva & Lopez, 2021), or applied surveys for specific civil service careers (D'Araújo, 2018). Despite the differences in focus and data source, the conclusions drawn in this study corroborate previous research: Black managers are systematically underrepresented at the top level of municipalities and have lower average incomes than White managers at both the municipal and state levels.

When we integrate the two categories of analysis, gender and race, the perceived inequalities are presented in greater detail. The group that occupies the base of the pyramid of state and municipal managers is Black women. They have the lowest average incomes and the fewest opportunities for vertical progression in their roles. White men, in contrast, are at the top in every scenario. Such findings underscore the importance of intersectionality between gender and race in explaining the opportunities for progression and the salaries received by public sector workers (Pinheiro, 2023; Silva & Lopez, 2021).

Finally, the findings support the development of public policies addressing inequalities. In this context, although essential, policies focused solely on the entry of Black workers into the public sector are not sufficient to address the historical injustices that persist. Decentralized policies that encourage the vertical progression of Black individuals are also needed, administered by career management departments. Regarding gender inequalities, it is crucial to address the primary origins of perceived discrepancies, namely the sexual division of labor (Hirata & Kergoat, 2008). Policies to encourage the sharing of reproductive work, such as childcare between women and men, and the expansion of paternity leave to make it equivalent to maternity leave, must be considered. The state must also assume a greater role in social reproduction, for example, through the construction of public daycare centers and promoting their use.

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CONFLICTS OF INTEREST

The author has no conflict of interest to declare.

AUTHOR CONTRIBUTION

José Teles: Conceptualization, data curation, formal analysis, financing acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing – original draft; Writing – review and editing.