



All the contents of this journal, except where otherwise noted, is licensed under a Creative Commons Attribution License

Women in charge? Hierarchical segregation and gender disparities in the Brazilian labor market*

Yasmin Mussalem Haddad**

Valéria Lúcia Pero***

The ‘glass ceiling’ is well-established finding in the empirical literature on labor market gender inequalities, referring to the phenomenon whereby wage gaps are more pronounced at the top of the income distribution and in higher-level hierarchical occupations. This article analyzes the determinants of the wage gap among managers and directors along earnings quintiles to assess whether a glass ceiling effect exists for women and black people in this type of occupation in Brazil. In addition, the article examines how variables related to care and household chores affect women’s earnings compared to men in these occupations. Drawing on the 2019 and 2022 Brazilian Household Sample Survey (PNADC – *Pesquisa Nacional por Amostra de Domicílios Contínua*), we perform estimations of wage differentials by sex and skin color based on the quantile regression model with selection bias correction. The results indicate the existence of a glass ceiling for women, more pronounced in the public sector than in the private sector. A glass ceiling effect is also identified for black people, with evidence of greater marginalization for black women. Finally, the variable for caring for people over 60 years old is significant and negative only for women in lower income groups. These results demonstrate the importance of public policies aiming at reducing the wage gap in higher hierarchical occupations. In this sense, the public sector should lead by example increasing the representation of women and black workers in positions of greater prestige and authority, as well as adopting policies to promote more equitable compensation in such positions.

Keywords: Gender gap. Hierarchical segregation. Glass ceiling. Wage returns.

* This article is based on the study by Haddad and Pero (2022).

** Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro-RJ, Brazil (yasmin.haddad@ppge.ie.ufrj.br; <https://orcid.org/0000-0002-3901-2311>).

*** Universidade Federal do Rio de Janeiro (UFRJ), Rio de Janeiro-RJ, Brazil (vpéro@ie.ufrj.br; <https://orcid.org/0000-0002-3918-2441>).

Introduction

In Brazil and over the world, women have been gradually advancing in various areas of professional life. Especially since the 1980s, women have experienced a growing participation in the labor market, gradually beginning to overcome different professional barriers. Notably, during the 1990s, Brazilian women reached educational attainment levels equal to those of men, and they currently have higher educational levels than men (Melo; Thome, 2018).

Despite significant advances in women's participation in the labor markets worldwide, gender inequalities remain, raising issues related to justice, productivity, and well-being. One of the issues in this context refers to the barriers to women's access to careers and positions of greater prestige, such as leadership and management positions (Silva; Rodrigues; Queiroz, 2015). On the one hand, gender stereotypes associate characteristics socially seen as masculine (proactivity, leadership, ability to command) to positions of greater prestige, while women are considered fragile and with greater ability to accommodate, which, in turn, tends to generate discrimination in the labor market since they are seen as inadequate to become leaders (Bertrand, 2018).

On the other hand, socially internalized notions that women are responsible for household chores and the care of children, elderly, and people with disabilities (Hirata; Kergoat, 2007) tends to make them prioritize work-home reconciliation more diligently than men, which is reflected in a greater demand, on their part, for jobs with flexible workloads, part-time or with other characteristics that facilitate this reconciliation (Bertrand, 2018), such as the presence of daycare centers or longer maternity leave periods.

Goldin (2014) also argues that the very functioning of labor markets, in which companies tend to disproportionately pay individuals who work long hours and/or overtime, ends up having greater effects on women. In this sense, women are subject to a range of disparities in the labor market that we understand to have a common root in the sexual division of labor (Kergoat, 2009), that is, the segregation and hierarchization of so-called "female" and "male" work.

Notably, it is still rare to find women who can reach the first and second echelon in the organizational hierarchy (Lima *et al.*, 2014), a phenomenon that can be called "hierarchical segregation" (Silva, 2020). Hierarchical segregation can be better understood through the metaphor of the glass ceiling, a barrier so subtle that it is transparent, but is still strong enough that women have difficulty ascending to higher paid positions and hierarchical levels in their professions (Fernandez, 2019).

In this sense, prejudice and discrimination against women are essential mechanisms of the glass ceiling, partly explaining women's difficulty ascending in their careers and holding jobs in leadership and management positions. Empirically, we test for a glass-ceiling effect – understood as a widening of the gender wage gap toward the top of the

earnings distribution (Albrecht; Björklund; Vroman, 2003; Bertrand, 2018) – within the set of managers and directors.

Specifically, we estimate the gender earnings differential across quantiles of the hourly-earnings distribution for these occupations and assess whether the gap widens at the top. Because the sample already comprises workers who have surpassed the initial barrier to leadership, this design asks whether an additional ceiling operates among those in managerial roles. We also examine heterogeneity by race/skin color and the association with unpaid care variables. Finally, we differentiate between the public and private sector, in order to observe whether these inequalities differ across institutional spheres that have distinct recruitment, pay and regulation policies.

Sexual division of labor, social norms, and glass ceilings

The economic literature addresses gender wage inequality in different ways. A first approach is that of economic rationality, which explains the distinct way men and women are paid based on the theory of human capital (Becker, 1962). According to this view, women develop their skills and intellectual capital less than men, because their work trajectories are interrupted due to their obligations with family care and motherhood (Passos; Machado, 2022). Such interruptions cause the depreciation of women's human capital and, therefore, they are paid less when they work in the same positions as their male counterparts. This argument, however, seems to find little support in the literature, considering that Brazilian women are, in general, more educated than men (Melo; Thomé, 2018).

However, what we do observe in many countries, as well as in Brazil, is a significant child penalty, that is, the effect of parenthood on women relative to men (also known as motherhood penalty), as shown by Kleven *et al.* (2024),¹ which according to this study, accounts for most of the observed gender inequality in labor market outcomes in the country. In our point of view, this phenomenon results from socially established gender norms, in which women are expected to care for children and the household.

This second way of understanding wage differentials between men and women, related to social norms, has been incorporated into the framework of identity theory. Identity theory seeks to expand economic analysis by including individual identity as a non-pecuniary motive in the utility function, producing an economic decision theory that considers the social context (Akerlof; Kranton, 2000; Bertrand, 2018). According to Akerlof and Kranton (2000), we can define identity as a set of factors that characterize individuals from a perception of belonging to a certain social group (such as gender, color, religion, among others).

Thus, identity theory states that each social group is associated with distinct rules of behavior, internalized by individuals in the process of constitution of individual identity.

¹ For Brazil, Kleven *et al.* (2024) find an effect of up to 50% in regards to employment.

When a violation of these rules occurs, the individual is taken by a sense of anxiety and thus seeks to act in a way that reduces this anxiety, reinforcing the sense of belonging to the individual identity. That is, a deviation from the social norm reduces the utility of the individual in question (Akerlof; Kranton, 2000).

Therefore, it is possible to understand women's participation in the labor market given the social norms related to gender. Since women are socialized to be mothers and caregivers, we understand that they prioritize occupations that allow them to reconcile their familial and domestic responsibilities with professional work, such as more flexible working hours and workplaces that have daycare centers (Bertrand, 2018). That is, identity theory posits the notion that female workers select jobs that require less and therefore pay less, considering the social norms. However, it's important to consider that, in a scenario of a country like Brazil, there are several constraints to female participation in the labor market, such as a social organization of care mainly based on familial provision, and the rigid social norms that constrain women to certain roles.

This would explain, on the one hand, the horizontal segregation suffered by women and, on the other hand, why they find it more difficult to progress in careers and occupy leadership positions. Considering that, socially, those are not spaces traditionally occupied by women, we can see that there are social rules that indicate, for example, that "a woman should not receive more than her husband," affecting the participation and income of women in the labor market, as analyzed by Bertrand, Kamenica, and Pan (2015) and Codazzi, Pero, and Sant'Anna (2018). In this case, ascending professionally and being in positions of greater power would generate a decrease in utility for married women, by going against gender norms.

Finally, several feminist authors (Agenjo-Calderón; Gálvez-Muñoz, 2019; Bahn; Cohen; Rodgers, 2020; Berik; Kongar, 2021; Kergoat, 2009) have considered the issue of the sexual division of labor as an explanation for the distinct participation and remuneration of women in the labor market. Based on the idea that differences between genders are not produced biologically, but are created in a social way, the theory of the sexual division of labor emphasizes that labor can be divided between productive work (i.e., professional, and paid work) and reproductive work (unpaid work, linked to the care of the home, children, the elderly, and other dependents).

According to this view, there is a clear sexual division of labor in the sense that women are primarily assigned reproductive labor, while men are primarily responsible for productive labor. That is, the responsibility for the care and provision of well-being in the family falls predominantly on women. Kergoat (2009) points out that the sexual division of labor is based on two principles: separation, in the sense that there are traditionally feminine and other traditionally masculine attributions; and hierarchy, in the sense that the work done by men is more valued, socially, and pecuniarily.

When we look at differences in public and private sector, we also must take into account how these impact men and women differently. In Brazil, the private sector is characterized

by pay and progression regimes that are influenced by market factors, such as supply and demand for highly skilled workers. On the other hand, the public sector is marked by a structure in which pay and promotion regimes are much more rigid, for example, with specific demands regarding qualification and worker's educational backgrounds, as well as other factors such as years working in certain positions, specific legislation and other formal criteria (Passos; Machado, 2022).

Given our understanding that women suffer losses in their work trajectories when seeking to balance family responsibilities with work outside the home, gaining little help from their partners or public policies, we understand that this will have an in differences in their salaries and work trajectories, which can also vary between the public to private sectors (Passos; Machado, 2022; Vaz, 2013). To reconcile paid and unpaid work, women are more likely to take on jobs with flexible or part-time hours, which potentially damages competitiveness in the search for more prestigious and better paid positions (Cortés; Pan, 2020; Melo; Morandi, 2021).

Thus, the field of Feminist Economics points out that there is segregation in the labor market, which can be a vertical or horizontal. Horizontal segregation occurs in the sense that there are professions composed mostly of women, which are related to what is expected to be "female work", that is, nannies, caregivers, maids, primary school teachers, for example. In this sense, the metaphor of the "sticky floor" is used to point out that women are stuck in occupations of lower social prestige and more related to domestic activities socially placed as feminine.

That is, the "sticky floor" metaphor brings an extra layer to the analysis of horizontal segregation, pointing out that not only are women confined to certain jobs, but that there is a structural component related to the sexual division labor that makes it more difficult for them to access different positions and activities (Agenjo-Calderon, 2019). Thus, it describes a discriminatory labor-market pattern that keeps women disproportionately in lower-level positions, with fewer opportunities for promotion and upward mobility than men.

A second issue, related to the way women enter the labor market, is the so-called glass ceiling. Roughly speaking, when one observes the most prestigious positions in the various occupations, men are the majority (Lima *et al.*, 2014). Thus, we consider that there is an "invisible barrier", related to gender stereotypes and statistical discrimination, that prevents women from ascending professionally. Consequently, a larger gender pay gap is expected to be observed at the top of the earnings distribution.

As discussed by Fernandez (2018), vertical segregation occurs when women are the minority in job positions at the top of the hierarchy of certain careers, and most positions of the lower end of this ladder are occupied by women. Overall, this tends to be the case in terms of gender composition of labor positions, that is, as we observe better paid and more prestigious occupations, men tend to occupy most positions. This means that men are the most prevalent in positions of impact on decisions, such as directors, managers, chiefs and presidents of enterprises.

Some issues that may contribute to this invisible barrier are gender stereotypes, hostile work cultures, inflexible working hours that prevent women from reconciling paid and unpaid work demands, the lack of opportunities for women to be trained in managerial positions, and lack of access to informal networking opportunities (Fernandez, 2018). That is, despite being on average more educated than men, women face more difficulties to ascend to more prestigious job positions in the labor hierarchy, which can be understood not only underdeveloped potential, but a lower return on educational investments (Manganelli, 2012). Therefore, glass ceilings are a phenomenon that elucidate the fact that gender inequalities are not a result of individual decision, but rather social and institutional structures.

The glass ceiling effect, thus, has to do with a widening of the wage gaps in the higher parts of the wage distribution, a phenomenon that is observed worldwide (Albrecht; Björklund; Vroman, 2003; Bertrand, 2018), and also in the case of Latin America (Carillo; Gandelman; Robanno, 2014), and Brazil (Manganelli, 2012; Araújo, 2019; Silva, 2020). This difference in earnings is a significant factor to understand overall gender pay inequalities. However, we understand that this phenomenon might not affect all women equally, especially if we adopt an intersectional perspective.

If we look at Brazilian labor market more specifically, we can see that it is still permeated by the racist and patriarchal formation of the country, which leads to a particularly precarious social standing of black women. Saffioti (1978) uses the “loose knot” metaphor to explain the relationship between racism, the patriarchy, and class oppression in Brazil. According to her point of view, there is an intertwining between capitalistic, racial, and patriarchal relations in the country, forming a knot that is loose precisely because it enables mobility for its components. Or, in other words, there is a structural imbrication between these three systems.

According to Lugones (2014), race is a central axis of difference with regards to the social roles attributed to men and women in modern/colonial America. The coloniality of gender, a concept proposed by Lugones (2014) in line with the decolonial debate, represents the perpetuation of these inequalities over time, that are a result and an inheritance of colonial experiences, so as to maintain the subordination of these populations centuries after colonization ended.

Gonzalez (2020) argues that gender inequalities are a structural element of Latin-American societies, which cannot be analyzed separately from the racial inequalities that shape the continent. If we add to that the fact that women are, majorly, part of the Brazilian proletariat, we can conclude that they suffer from a triple form of discrimination (by means of gender, race, and class). In this sense, we highlight the racial division of labor as a mechanism for maintaining the black and mixed-race population confined to the lowest strata of job positions, and disproportionately unemployed, underemployed, and exploited (Gonzalez, 2020).

Therefore, we argue that the intersection between being a woman and being a person of color places black and mixed women in a position of specific segregation in Brazilian society, affecting their position in the labor market and wages. We put forth the possibility

that the glass ceiling is a phenomenon that affects black women differently from white women, given the imbrication between racial and sexual discrimination that these women experience in Brazil.

Empirical evidence of the glass ceiling phenomenon

A large body of literature studies the phenomenon of the glass ceiling with empirical analysis, both in the international scenario and regarding Brazil specifically. These studies use different databases, some focusing on the formal labor market, others analyzing the broader economy. In addition, they vary in scope, ranging from researching the glass ceiling as a broader phenomenon that hinders the professional advancement of women in general, to focusing specifically on leaders and managers. This section includes a brief review of selected works, aiming to highlight what has already been done and the possible contributions of the article.

TABLE 1
Empirical evidence for Brazil (literature review)

Paper	Data-base	Methodology	Main results
Manganelli (2012)	2009 PNAD (National Household Sample Survey)	Quantile regression technique (OLS) with correction for selection bias	Evidence of glass ceiling (women more likely to be paid 22% less than men at the top of the wage distribution); time dedicated to household chores negatively influences wages in all quantiles of the distribution, with a greater penalty for women
Araújo (2019)	2005 and 2015 PNAD (National Household Sample Survey)	Quantile regressions (OLS) with correction of selection bias	Evidence of a glass ceiling in both years; black women who head families and dedicate more hours to performing domestic work are the ones who are most subject to such barrier
Silva, Rodrigues, and Queiroz (2015)	1995, 2005, and 2015 RAIS (Statistical Annuary of Social Information)	Descriptive	When they compare the salaries of men and women in leadership positions who have the same level of education (complete higher education), they find that even when they work in higher positions, women are paid less than men
Passos and Machado (2022)	2015 PNAD (National Household Sample Survey)	Decomposition methodology that analyzes the components of wage differentials by sex along different income strata (Fortin <i>et al</i>) ⁺	Identified glass ceiling and higher income inequalities in the public sector, especially at the top of the distribution
Silva (2020)	2003, 2010, and 2017 RAIS (National Household Sample Survey)	Quantile regressions with a counterfactual decomposition	Found evidence of the glass ceiling for managers and directors, but not of a decrease in the phenomenon over the observed period
Carrillo, Gandelman and Robano (2013)	2003 PNAD (National Household Sample Survey)	Quantile regressions (OLS) and quantile decompositions (Fortin <i>et al.</i>)	Found evidence of a glass ceiling effect for women and that Brazil has the highest unexplained component of the countries analyzed in Latin America

Source: Auhor's elaboration.

As shown in Table 1, albeit by means of different methodologies and databases, higher wage disparities at the top of the wage distribution are found by Manganelli (2012), Araújo (2019), Carillo, Gandelman and Robano (2013), Silva, Rodrigues, and Queiroz (2015), Passos and Machado (2022) and Silva (2020). Both Manganelli (2012) and Araújo (2019) also find evidence of a negative effect on wages on different strata of income for those who spent more time on unpaid household work, especially women. In addition, Passos and Machado (2022) find that the public sector tends to have greater gender disparities, especially when it comes to higher income strata. Finally, both Manganelli (2012) and Araújo (2019) find that black women are even more affected by wage disparities in the top of the wage distribution than white women in Brazil, irrespective of being employed in formal or informal positions.

Our contribution, thus, lies on the following two aspects: analyzing intersectional inequalities when it comes to the glass-ceiling effect in Brazil, combining gender and racial analysis given the structural inequalities that shape the Brazilian labor market; and understanding if there are differences between the public and private sectors in Brazil in this regard, given the distinct recruitment, pay and regulation policies. We are interested in looking specifically at managers and directors, given that in Brazil there is significant underrepresentation of women and people of color in these positions, which are the positions of greatest prestige, remuneration, and decision-making competences.

Therefore, this article examines the gender pay gap among managers and directors (as defined by IBGE²) at the top of the earnings distribution, incorporating variables related to care responsibilities and household work. In doing so, it contributes to the literature by analyzing a possible glass-ceiling effect and its intersection with race, as well as the impact of household and care responsibilities on managers and directors, not only in the formal labor market, as in Silva (2020), but also in informal job positions. To do so, we make use of microdata of the PNADC (National Household Sample Survey), for 2019 and 2022, which are produced by the Brazilian Institute of Geography and Statistics (IBGE), based on the fifth visit, which includes data on other forms of labor, including unpaid care work.

Descriptive statistics

This section focuses on the descriptive statistics of the sample and characterizes managers and directors in 2022, to understand who these workers are and how they differ from the workforce. We opted for an analysis based on managers and directors to understand what happens in terms of earnings to women who reach higher levels in the occupational hierarchy, as done by, for example Silva (2020) and Silva, Rodrigues, and Queiroz (2015).

² IBGE defines managers and directors according to the following specifications on variables of the PNADC: V2009 >= 014 e V4009 ≠ null and 1111<=V4010<=1439.

TABLE 2
Select descriptive statistics for the general population and managers and directors
Brazil – 2022 (1)

Characteristic	Public				Private			
	General population		Managers and directors		General population		Managers and directors	
	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error
Woman	0.51	0.00	0.50	0.00	0.40	0.00	0.39	0.00
White	0.42	0.00	0.52	0.00	0.41	0.00	0.64	0.00
Age	43.28	0.08	45.82	0.38	40.31	0.04	43.04	0.19
Schooling	13.63	0.02	14.58	0.09	10.19	0.01	13.48	0.05
Head of household	0.50	0.00	0.55	0.02	0.47	0.01	0.54	0.00
Earnings	3.876	28.89	6.273	204.54	2.149	9.63	6.634	164.61
Hourly earning	26.20	2.08	45.49	2.39	14.06	0.07	39.00	1.10
Working hours	38.02	0.06	39.20	0.31	39.57	0.03	44.87	0.17
Formal	0.73	0.00	0.66	0.17	0.52	0.00	0.83	0.00

Source: IBGE, PNADC 2022. Author's elaboration.
(1) Statistics for 2019 can be seen in the Appendix.

Table 2 compares different descriptive statistics for the general population and for managers and directors. First, it is possible to observe that, although they represent about 51% of the population, women are only around 40% of the people employed in management and board positions in the private sector. The public sector is considerably more equalitarian. Another interesting issue is that white people represent around 64% of managers and directors in the private sector and 52% in the public sector, although only 41% of the population identifies as white. These two points seem to corroborate the idea that there is still a barrier that limits the rise of women and black and mixed people to positions of command.

Regarding age, we find that the leaders and managers are on average older than the general population of workers, in the public and private sectors. It is also possible to notice that the majority of those working in management and leadership positions are heads of household, and that their monthly earnings significantly exceed the average salary of the Brazilian population. Concerning education, we find that managers and directors are better educated, averaging approximately four years more schooling than the general population. Although women in Brazil tend to be more educated than men (Melo; Thomé, 2018), this does not appear to translate into greater participation in positions of command and leadership.

Regarding working hours, we can see that they exceed the average for the general population when it comes to managers and directors, particularly in the private sector, where the gap reaches five hours. If we take into consideration the concept of greedy hours, proposed by Goldin (2014), that is the notion that some occupations demand and reward long hours and hours worked at specific times of the day, we can conclude that this might very well be the case of management and leadership positions. This, in turn, may

significantly affect women’s ability to be hired for these positions – given social norms and the sexual division of labor, as discussed above – and, when they are in fact hired, may affect their earnings.

TABLE 3
Performance of domestic tasks and care of children and older adults and time spent
Brazil – 2022 (1)

Variables	Public				Private			
	General		Directors and managers		General		Directors and managers	
	Women	Men	Women	Men	Women	Men	Women	Men
Performance of domestic tasks (%)	98.17	93.60	98.32	96.54	99.25	97.92	99.35	97.18
Care of children aged 0 to 5 (%)	13.05	12.74	13.64	16.13	14.30	13.59	11.50	15.60
Care of children aged 6 to 14 (%)	17.30	15.45	17.54	22.19	17.67	14.63	18.33	16.52
Care of people over 60 (%)	3.97	3.03	3.06	1.72	3.09	2.44	3.01	2.04
Time spent on domestic tasks and care	16.99	11.17	15.23	9.8	18.05	10.79	15.05	10.17

Source: IBGE. PNADC 2022. Author’s elaboration.
(1) Statistics for 2019 can be seen in the Appendix.

Table 3 analyzes the percentage of people who perform domestic and home care activities, disaggregating by sex and compares the general population with the managers and directors. We observe that women dedicate approximately seven more hours than men to these tasks, irrespective of whether they are employed in private or public sectors, and that female leaders and managers dedicate, on average, four hours less than women in general to these tasks. Possibly, women in leadership and management positions, due to the difficulty of reconciling the workload of professional work with care work and domestic chores, choose to delegate these tasks to other women hired for these services, such as nannies, caregivers, and maids (Hirata; Kergoat, 2007).

TABLE 4
Gender and race composition by sector
Brazil – 2022

Gender and race	In percentage			
	Public		Private	
	General sample	Managers and directors	General sample	Managers and directors
White men	17.38	27.12	24.10	38.86
Black or mixed-race men	24.47	23.34	36.10	22.34
White women	25.63	26.08	17.68	26.03
Black or mixed-race women	32.52	23.47	22.12	12.80

Source: IBGE. PNADC 2022. Author’s elaboration.

Finally, Table 4 shows the gender and race composition of the public and private sectors in Brazil in 2022. It is worth noting that, in both sectors, there is an overrepresentation

of White men and women in managing and directing positions in comparison to the overall sample of workers. In other words, it is clear that there is a strong barrier for the advancement of men and women of color to positions of greater prestige in the Brazilian labor market. It is also significant to note that the public sector tends to have a more balanced representation of gender and race compared to the private sector, in which White men represent more than 38% of workers in managing and directing positions.

Database and methodology

We intend to measure the earnings determinants at the top of the distribution for Brazilian managers and directors for the years 2019 and 2022, using the general sample of workers as a counterpoint. Our sample consists of workers with ages between 14 and 65 years old. Special emphasis is placed on sex to examine gender earning inequality. To verify the existence of differentiation by race, we chose to introduce a variable indicating this characteristic. Additionally, variables are introduced to capture care responsibilities for children, adolescents, and older adults, as a proxy for reproductive work, to understand its effects on women in different income quantiles. Occupational and educational indicators are used as control variables. The selected variables are described in Chart 1.

CHART 1
Variable descriptions

Variables	Name	Description
ln_hourly_wage	Hourly wage	Natural logarithm of the hourly wage of the main occupation
black_woman	Black woman	<i>Dummy</i> that equals 1 if Black or mixed woman and 0 otherwise
white_woman	White woman	<i>Dummy</i> that equals 1 if white woman and 0 otherwise
black_man	Black man	<i>Dummy</i> that equals 1 if Black or mixed man and 0 otherwise
age2	Age squared	Age squared
Spouse	Spouse	<i>Dummy</i> that equals 1 if spouse and 0 otherwise
Child	Child	<i>Dummy</i> that equals 1 if the household contains a child from the household head or spouse and 0 otherwise
Graduated	Graduated college	<i>Dummy</i> that equals 1 if graduated college and 0 otherwise
Formal	Formal job	<i>Dummy</i> that equals 1 if works a formal job and 0 otherwise
hours_domwork	Hours domestic tasks and care	Hours dedicated to domestic tasks and care work
care0_5	Cares for household resident under 5 years old	<i>Dummy</i> that equals 1 if yes and 0 otherwise
care6_14	Cares for household resident aged between 6 and 14	<i>Dummy</i> that equals 1 if yes and 0 otherwise
care_60	Cares for household resident under aged 60 or older	<i>Dummy</i> that equals 1 if yes and 0 otherwise

Source: Author's elaboration.

The exercise is performed from a regression model based on the earnings equation proposed by Mincer (1974). Estimation is performed using quantile regression method with correction for sample selection bias allowing us to understand how earnings are determined across different income levels. Three models are estimated (general sample, private sector, and public sector), each containing two specifications, which are described below.

The earnings determination equation for specification can be described by formula (1): $\ln(\text{wage}/\text{hour})_i$

$$= \beta_0 + \beta_1 \text{black_woman}_i + \beta_2 \text{white_woman}_i + \beta_3 \text{black_man}_i + \beta_4 \text{age}_i + \beta_5 \text{age2}_i + \beta_6 \text{graduated}_i + \beta_7 \text{formal}_i + \beta_8 \text{care0_5}_i + \beta_9 \text{care6_14}_i + \beta_{10} \text{hours_domwork}_i + \varepsilon_i \quad (1)$$

The variables used in the analysis, all constructed from the microdata of the PNADC, are described in Chart 1. In equation (1) ε represents the random error with $i=1, 2, 3, \dots, n$.

Analysis of earnings determinants should include the control of sample selection. As Arellano and Bonhomme (2017) discuss, the selection of non-random samples can be a significant problem for many empirical works, especially when it comes to the study of wages and employment. Since only the wages of those who are employed are observed, conventional measures of wage inequality may be biased.

Hence, the authors propose a method to correct for selection bias in quantile regressions. As in linear models in which there is selection bias, the omitted variables (in this case, determinants of employment that do not directly affect wages) are central to obtaining consistent estimates. Thus, the model proposed by the authors is based on the following three equations:

$$Y^* = q(U, X) \quad (2)$$

$$D = 1\{V \leq p(Z)\} \quad (3)$$

$$Y = Y^* \text{ if } D = 1 \quad (4)$$

In which, Y^* is a latent variable (in this case, the market wage); D is an indicator of participation (whether or not they are employed); U and V are error terms.

Equation (2) is a linear quantile regression model for the potential outcome Y^* defining the value of Y^* that a U -rated individual would receive if selected (e.g., the U^{th} quantile in a wage distribution for individuals with X characteristics). Equation (3) specifies that among individuals with Z characteristics, a percentage of $p(Z)$ is selected. Equation (4) states that the results are observed only for selected individuals – for example, an individual would earn some Y^* if they decided to work, but this salary is observed only if they actually do so (Biewen; Erhardt, 2021).

Results and discussion

The results of the quantile regressions for the quantiles 10, 50, and 90 shows that some variables significantly affect the earnings of managers and directors, considering both the

general sample and the private and public sectors separately. The model estimates can be viewed in Tables 5 to 10 at the end of the section.

First, the estimates point to sex as a determinant variable of the salaries of managers and directors. In all models, being a woman is associated with lower wages, and the wage gap increases with the income quantiles, which can be understood as an indication of the glass ceiling effect. These results are in line with the different authors that find higher wage disparities at the top of the wage distribution for the average female workers in Brazil (Araújo, 2019; Manganelli, 2012; Passos; Machado, 2022; Silva; Rodrigues; Queiroz, 2015; Silva, 2020), and show that women are subject to significantly bigger constraints on their salaries as they move up on the wage ladder.

Notably, these values are significantly higher than those observed for the average workers when we look at managers and directors separately, which shows the glass ceiling has an even more pronounced effect on them than on the average workers in Brazil. That is, although being a woman implies increasingly lower salary returns for both samples, this value is higher for managers and directors than for average workers, which may corroborate the notion that, due to social gender roles, women find it more difficult to be present in management and board positions and, when they do reach such positions, they are paid less.

This may be related to social gender roles that segment women into specific niches of occupation within the hierarchical ladder, such as H.R. managers or directors in sectors related to care, who are paid less. In this case, the glass ceiling phenomenon does not appear to diminish in between 2019 and 2022, which is similar to the results found by Silva (2020) based on data from RAIS. As previously stated, Brazil is profoundly marked by gender norms and social roles (Codazzi; Pero; Sant'Anna, 2018) that establish very constrained roles for the participation of women in the labor market.

Another interesting issue to note is that, although there are indications of the glass ceiling effect in both the public and private sectors, this effect is much larger when it comes to the public sector. That is, despite being often considered more interesting for reconciling work and family obligations, the public sector seems to pay women less equally, corroborating the study conducted by Vaz (2013), which points out the existence of the glass ceiling in the Brazilian public sector, despite its recruitment process theoretically being more objective and transparent than that used by the private sector. Perhaps this has to do with the differences in pay and promotion regimes in both sectors, as pointed out by Passos and Machado (2022), especially since the demands for advancing in the Brazilian sector tend to have a more rigid and formalized scheme.

We highlight that these results are also found by Passos and Machado (2022): the authors, in an analysis for the year 2015, conclude that income inequalities regarding the issue of gender are more evident in the public sector, especially in the upper part of the wage distribution, despite finding evidence, from the use of decomposition methods, that wage discrimination against women is greater in the private sector.

Skin color is also a very important factor in determining the salary of managers and directors, as can be seen below. Considering the intersection variable for black or mixed-race women, we found it to be negative and statistically significant across all models (averaging over 0.51) which evidences the most unfavorable situation of this specific group of women.

As discussed in prior sections, black and mixed-race women are faced with a double form of discrimination in the labor market, a product of the sexual and racial division of labor to which they are subjected. In this sense, our results corroborate the notion that these women are at the most fragile positions in the labor market, even when it comes to managerial and directing roles, as they are paid not only significantly less than men but also less than white women when in these positions. These results, therefore, reinforce the literature focused on understanding intersectional inequalities in the Brazilian labor market, and suggest that this is a phenomenon that is perpetuated even in the higher strata of careers.

Concerning family configuration, we analyze two variables: having a spouse and children. For the entirety of workers in the economy, there is evidence that having a spouse slightly increases the salary in the 10th and 50th quantiles, while having children seems to decrease the salary of workers in the 90th income quantile about 10%. As an explanation we point out that having children incurs in a penalty on salaries, especially for women, as evidenced by Kleven *et al.* (2025), while having a partner to share the workload may be associated with an increase in salaries, especially in the case of men, as demonstrated by Guiginski, Wajnman and Chein (2023).

Regarding the dummy variables related to care, the most relevant finding concerns the variable for care of household members aged 60 and over, which was negative and statistically significant for income quantiles 10 and 50. Note that this variable has very high values, ranging between 22% and 29%. That is, there is evidence that caring for older people significantly impacts the salary of managers and directors who are not at the top of the salary distribution. It is interesting to note that the values are significantly higher for managers and directors than for the general workforce, where the equivalent range is 4% and 9% negatively.

Considering that the dummy variable is an indicator of whether the individual cares for people over 60 years of age, but does not indicate the time spent on these tasks, it is possible to assume that the leaders and managers at the top of the hierarchy delegate much of the work of caring for older people to others, such as professional caregivers, in the sense of the delegation model of care as proposed by Hirata and Kergoat (2007), which would explain why this variable does not appear to affect the earnings of managers at the top of the income hierarchy. Finally, the variable that quantifies the hours spent on domestic work³ was negative and significant in the general sample, but of very small value, having little impact on the salaries of managers and directors.

³ To verify if there was a possibility of differences in these variables, we estimated two separate models in which either the dummy variables were present or the domestic work hours was present. The results remained consistent with our primary specification.

Despite these results not necessarily corroborating others that have been found regarding unpaid care tasks in Brazilian (for example, see Manganelli, 2012; Araújo, 2019), we highlight the need for a time-use survey in Brazil providing more accurate and disaggregated data for a more precise analysis of the interconnection between unpaid care and labor market conditions for women.

In summary, we find that overall, the labor market in Brazil in 2019 and 2022 is marked by gender and racial discrimination that manifests as wider wage gaps at the top of the earnings distributions for women and Black and mixed-race employees. We also find evidence that this phenomenon is more pronounced for managers and directors and has a particular effect when we look at the intersection of both gender and race.

TABLE 5
Model 1: Earnings determination via quantile regression for both sectors (private and public) and managers and directors
Brazil – 2019-2022

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black woman	-0.304*** (0.039)	-0.405*** (0.035)	-0.545*** (0.059)	-0.308*** (0.042)	-0.400** (0.034)	-0.568*** (0.055)
White woman	-0.171*** (0.033)	-0.216*** (0.029)	-0.294*** (0.049)	-0.162*** (0.035)	-0.214*** (0.029)	-0.313*** (0.046)
Black man	-0.130*** (0.034)	-0.159*** (0.039)	-0.245*** (0.052)	-0.143*** (0.037)	-0.149*** (0.030)	-0.250*** (0.041)
Age	0.028*** (0.006)	0.036*** (0.006)	0.040*** (0.010)	0.043*** (0.009)	0.048*** (0.007)	0.044*** (0.012)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Spouse	0.011 (0.027)	0.022 (0.025)	-0.014 (0.041)	0.009 (0.016)	0.018 (0.020)	-0.015 (0.032)
Children	-0.041 (0.102)	-0.062 (0.091)	-0.119 (0.153)	-0.054 (0.110)	-0.073 (0.088)	-0.123 (0.164)
Graduated	0.466*** (0.025)	0.589*** (0.023)	0.687*** (0.038)	0.467*** (0.027)	0.572*** (0.024)	0.706*** (0.036)
Formal	0.275*** (0.031)	0.105*** (0.028)	0.004 (0.047)	0.234*** (0.048)	0.108*** (0.028)	-0.019 (0.045)
Care0_5	0.055 (0.035)	0.040 (0.031)	0.072 (0.052)	0.043 (0.037)	0.031 (0.028)	0.079 (0.049)
Care6_14	0.025 (0.032)	0.027 (0.029)	0.120** (0.048)	0.000 (0.035)	0.027 (0.028)	0.124** (0.056)
Care_60	-0.235** (0.086)	-0.231*** (0.077)	-0.140 (0.130)	-0.252** (0.096)	-0.245*** (0.078)	-0.130 (0.124)
Hours_domwork	-0.002* (0.001)	-0.004*** (0.001)	-0.003 (0.002)	-0.002** (0.001)	-0.004*** (0.001)	-0.004* (0.002)

Source: IBGE. PNADC 2019 and 2022. Author's elaboration.

TABLE 6
Model 2: Earnings determination via quantile regression for managers and directors in the private sector
Brazil – 2019-2022

Variables	2019			2022		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black Woman	-0.304*** (0.039)	-0.405*** (0.035)	-0.545*** (0.060)	-0.292*** (0.045)	-0.383*** (0.038)	-0.543*** (0.061)
White Woman	-0.171*** (0.033)	-0.216*** (0.030)	-0.294** (0.050)	-0.152*** (0.045)	-0.183*** (0.031)	-0.277** (0.050)
Black man	-0.130*** (0.034)	-0.158*** (0.030)	-0.245*** (0.052)	-0.144*** (0.039)	-0.162*** (0.031)	-0.284*** (0.053)
Age	0.029** (0.007)	0.036*** (0.006)	0.040*** (0.010)	0.037*** (0.010)	0.047*** (0.008)	0.051*** (0.013)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000** (0.000)
Spouse	0.0111 (0.028)	0.022 (0.025)	-0.001 (0.041)	0.0089 (0.021)	0.018 (0.021)	-0.002 (0.038)
Children	-0.042 (0.102)	-0.062 (0.091)	-0.120 (0.153)	-0.038 (0.099)	-0.056 (0.078)	-0.121 (0.155)
Graduated	0.465*** (0.025)	0.589*** (0.023)	0.687*** (0.038)	0.422*** (0.029)	0.554*** (0.024)	0.697*** (0.039)
Formal	0.275*** (0.035)	0.105*** (0.028)	0.000 (0.047)	0.326*** (0.038)	0.113*** (0.032)	-0.034 (0.051)
Care0_5	0.055* (0.035)	0.040 (0.031)	0.072 (0.052)	0.065* (0.039)	0.031 (0.033)	0.059 (0.055)
Care6_14	0.025 (0.032)	0.027 (0.029)	0.120** (0.048)	0.015 (0.037)	0.031 (0.031)	0.127** (0.049)
Care_60	-0.245* (0.107)	-0.261*** (0.089)	-0.217 (0.152)	-0.297** (0.114)	-0.277** (0.111)	-0.174 (0.146)
Hours_domwork	-0.003* (0.001)	-0.005*** (0.001)	-0.005* (0.002)	-0.002 (0.001)	-0.005*** (0.001)	-0.004** (0.002)

Source: IBGE. PNADC 2019 and 2022. Author's elaboration.

TABLE 7
Model 3: Earnings determination via quantile regression for managers and directors in the public sector
Brazil – 2019-2022

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black woman	-0.403*** (0.099)	-0.579*** (0.090)	-0.691*** (0.129)	-0.447*** (0.099)	-0.567*** (0.084)	-0.686*** (0.111)
White woman	-0.325*** (0.094)	-0.303*** (0.086)	-0.461*** (0.122)	-0.329*** (0.094)	-0.341*** (0.080)	-0.463*** (0.105)
Black man	-0.168* (0.094)	-0.179** (0.085)	-0.036 (0.122)	-0.152 (0.096)	-0.233*** (0.082)	-0.018 (0.108)
Age	0.029 (0.019)	0.016 (0.018)	-0.003 (0.025)	0.017 (0.029)	0.020 (0.024)	-0.012 (0.032)
Age squared	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)

(continue)

(continued)

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Spouse	-0.102 (0.076)	-0.018 (0.070)	-0.026 (0.099)	-0.097 (0.068)	-0.017 (0.071)	-0.022 (0.095)
Children	-0.074 (0.277)	-0.337 (0.254)	-0.207 (0.361)	-0.073 (0.263)	-0.338 (0.252)	-0.206 (0.356)
Graduated	0.635*** (0.083)	0.559*** (0.071)	0.476*** (0.122)	0.534*** (0.085)	0.498*** (0.072)	0.496*** (0.095)
Formal	0.328*** (0.079)	0.240*** (0.068)	0.309** (0.116)	0.334*** (0.080)	0.272*** (0.068)	0.282** (0.090)
Care0_5	-0.047 (0.098)	0.092 (0.084)	0.178 (0.143)	-0.049 (0.098)	0.093 (0.083)	0.212* (0.109)
Care6_14	-0.129 (0.085)	0.045 (0.073)	0.043 (0.125)	-0.168* (0.086)	-0.081 (0.073)	-0.061 (0.097)
Care_60	-0.294* (0.174)	-0.194 (0.149)	-0.236 (0.255)	-0.285** (0.177)	-0.253* (0.015)	-0.168 (0.198)
Hours_domwork	-0.004 (0.001)	-0.004 (0.003)	0.002 (0.005)	0.005 (0.004)	0.000 (0.000)	0.004 (0.004)

Source: IBGE. PNADC 2019 and 2022. Author's elaboration.

TABLE 8
Model 4: Earnings determination via quantile regression for all workers in both sectors (private and public)
Brazil – 2019-2022

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black woman	-0.165*** (0.008)	-0.324*** (0.005)	-0.454*** (0.009)	-0.158*** (0.008)	-0.317*** (0.005)	-0.453*** (0.009)
White woman	-0.065*** (0.009)	-0.179*** (0.005)	-0.245*** (0.010)	-0.059*** (0.009)	-0.172*** (0.005)	-0.243*** (0.105)
Black man	-0.136*** (0.008)	-0.215*** (0.005)	-0.268*** (0.009)	-0.133*** (0.096)	-0.210*** (0.004)	-0.262*** (0.009)
Age	0.016*** (0.001)	0.019*** (0.007)	0.023*** (0.001)	0.015*** (0.001)	0.022*** (0.009)	0.029*** (0.001)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Spouse	0.018** (0.006)	0.023*** (0.004)	-0.006 (0.007)	0.020** (0.009)	0.022*** (0.004)	-0.004 (0.005)
Children	0.026 (0.019)	-0.002 (0.001)	-0.053** (0.021)	0.025 (0.017)	-0.002 (0.001)	-0.051** (0.023)
Graduated	0.458*** (0.007)	0.857*** (0.004)	1.107*** (0.008)	0.452*** (0.007)	0.847*** (0.004)	1.096*** (0.008)
Formal	0.878*** (0.006)	0.302*** (0.003)	0.192*** (0.007)	0.879*** (0.080)	0.299*** (0.003)	0.184*** (0.006)
Care0_5	0.004 (0.007)	0.017*** (0.004)	0.054*** (0.009)	0.007 (0.007)	0.018*** (0.004)	0.048*** (0.008)

(continue)

(continued)

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Care6_14	0.004 (0.007)	0.020*** (0.004)	0.058*** (0.008)	0.055*** (0.007)	0.019*** (0.004)	0.054*** (0.008)
Care_60	-0.083*** (0.013)	-0.045*** (0.011)	-0.065*** (0.020)	-0.087*** (0.019)	-0.052*** (0.011)	-0.063** (0.021)
Hours_domwork	-0.001 (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.001 (0.000)	-0.000*** (0.000)	-0.000*** (0.000)

Source: IBGE, PNADC 2019 and 2022. Author's elaboration.

TABLE 9
Model 5: Earnings determination via quantile regression for all workers in the private sector
Brazil – 2019-2022

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black woman	-0.175*** (0.009)	-0.342*** (0.005)	-0.461*** (0.010)	-0.164*** (0.009)	-0.311*** (0.005)	-0.460*** (0.010)
White woman	-0.064*** (0.010)	-0.175*** (0.005)	-0.229*** (0.011)	-0,058*** (0.009)	-0.166*** (0.005)	-0.226*** (0.010)
Black man	-0.141*** (0.008)	-0.217*** (0.005)	-0.294*** (0.009)	-0.134*** (0.008)	-0.210*** (0.004)	-0.291*** (0.009)
Age	0.016*** (0.001)	0.019*** (0.007)	0.024*** (0.001)	0.016*** (0.001)	0,023*** (0.009)	0.035*** (0.001)
Age squared	-0.000*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0,000*** (0.000)	-0,000*** (0.000)	-0,000*** (0.000)
Spouse	0.020*** (0.007)	0.026*** (0.004)	0.009 (0.008)	0.022*** (0.007)	0.029** (0.005)	0.006 (0.007)
Children	0.030 (0.020)	0.004 (0.011)	-0.047* (0.022)	0.032 (0.023)	0.004 (0.012)	-0.044* (0.021)
Graduated	0.374*** (0.009)	0.755*** (0.005)	1.058*** (0.010)	0.363*** (0.009)	0.740*** (0.005)	1.038*** (0.010)
Formal	0.897*** (0.006)	0.290*** (0.003)	0.129*** (0.007)	0.903*** (0.006)	0.290*** (0.003)	0.123*** (0.007)
Care0_5	0.000 (0.008)	0.013** (0.005)	0.041*** (0.009)	0.000 (0.008)	0.013** (0.004)	0.035*** (0.009)
Care6_14	0.003 (0.008)	0.019*** (0.004)	0.062*** (0.008)	0.002 (0.008)	0.016*** (0.004)	0.054*** (0.008)
Care_60	-0.094*** (0.020)	-0.045*** (0.011)	-0.079*** (0.023)	-0.098*** (0.020)	-0.055*** (0.011)	-0.076*** (0.022)
Hours_domwork	-0.002*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)	-0.002*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)

Source: IBGE, PNADC 2019 and 2022. Author's elaboration.

TABLE 10
Model 6: Earnings determination via quantile regression for all workers in the public sector
Brazil – 2019-2022

Variables	2022			2019		
	.1 quantile	.5 quantile	.9 quantile	.1 quantile	.5 quantile	.9 quantile
Black woman	-0.203*** (0.016)	-0.453*** (0.015)	-0.618*** (0.026)	-0.202*** (0.015)	-0.456*** (0,015)	-0.621*** (0,025)
White woman	-0.139*** (0.016)	-0.338*** (0.016)	-0.404*** (0.027)	-0.141*** (0,016)	-0.339*** (0.015)	-0.427*** (0.026)
Black man	-0.154*** (0.016)	-0.228*** (0.016)	-0.171*** (0.027)	-0.154*** (0.016)	-0.227*** (0.015)	-0.171*** (0.026)
Age	0.011*** (0.003)	0.003 (0.003)	0.010* (0.005)	0.012*** (0.003)	0.004 (0,003)	0.009* (0,005)
Age squared	-0.000** (0.000)	0.000* (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.000)	0.000 (0.000)
Spouse	-0.008 (0.011)	-0.019* (0.011)	-0.053*** (0.019)	-0.006 (0.013)	-0.017* (0.012)	-0.055** (0.020)
Children	-0.036 (0.039)	-0.025 (0.038)	-0.128* (0.064)	-0.033 (0.037)	-0.022 (0.035)	-0.124 (0.062)
Graduated	0.463*** (0.010)	0.812*** (0.010)	0.884*** (0.018)	0.460*** (0.010)	0.811*** (0,010)	0.881*** (0.017)
Formal	0.226*** (0.013)	0.288*** (0.012)	0.379*** (0.021)	0.225*** (0.012)	0.287*** (0.012)	0.384*** (0.021)
Care0_5	0.023 (0.014)	0.046*** (0.014)	0.108*** (0.024)	0.022 (0.014)	0.038** (0,014)	0.108*** (0,023)
Care6_14	0.005 (0.013)	0.025** (0.012)	0.069*** (0.021)	0.005 (0.013)	0.025** (0.012)	0.071*** (0.021)
Care_60	-0.045 (0.030)	-0.082** (0.029)	-0.126** (0.049)	-0.048 (0.029)	-0.078** (0.029)	-0.121** (0.048)
Hours_domwork	-0.000 (0.000)	-0.000 (0.000)	-0.004*** (0.000)	-0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)

Source: IBGE. PNADC 2019 and 2022. Author's elaboration.

Final remarks

The article analyzed the earnings determinants across three different quantiles (.10, .50 and .90) to understand if there is a glass ceiling effect for women managers and directors in Brazil. The databases used were the 2019 and 2022 PNADC, based on the fifth visit (which provides information on care and household chores). Descriptive analysis and econometric estimation were conducted using quantile regressions with a correction for sample selection bias, in order to assess the existence of a glass ceiling for women and to understand the role of care and domestic work in shaping the earnings of managers and directors in Brazil.

The descriptive analysis showed that women and black and mixed people are a minority in the positions of management and leadership. We also found that woman in leadership

and managing positions dedicate approximately six hours more to care and domestic chores than men in the same functions, a difference that is lower than the general average in the population.

Econometric exercises were performed to understand the earnings determinants of managers and directors in the different income quantiles, considering both the general sample and making a distinction between the public and private sectors. The results showed the importance of variables such as gender, skin color, education, and care for people over 60 years old. As for gender, the results showed evidence of a glass ceiling for women managers and directors, that is, a more significant earnings gap at the top of the labor income distribution, and that the phenomenon is more pronounced in the public sector. A similar phenomenon was found for black and mixed people, given that more pronounced positive earnings returns were found for white people at the top of the distribution. The intersection variable between being a woman and being black or mixed indicates an even more disadvantaged earnings position for this group of women at the top of the salary distribution.

Regarding the family care variables, we found that care for household members aged 6 to 14 was positive and significant for the 90th quantile, while the indicator variable of care for people over 60 years of age was negative and significant for the 10th and 50th quantiles, but not for the highest income quantile.

The results point to the need for public policies that stimulate the hiring and appropriate remuneration of women and black people for the highest positions in the organizational hierarchy. They also highlight the importance of more studies that investigate the relationship between performing care and unpaid domestic work and the paid work of employees in general, particularly of women. Bertrand *et al.* (2019) analyze the implementation of a quota policy for women in board positions in Norway. The authors find that the policy has contributed to a reduction in the gender pay gap at the top of the distribution, while the boards have become more diverse, suggesting these policies are crucial for the insertion of women in more prestigious managerial positions.

Thus, it is evident that the public sector, precisely because it holds a higher standard of equality, should set an example by hiring more women and black people for positions of greater prestige and authority, while adopting policies that ensure equitable compensation relative to white men in similar positions. For example, Kee (2006) finds evidence of a glass ceiling in the Australian private sector but not in the public sector and attributes the difference to the adoption of different pay schemes across the two sectors. Moreover, we also emphasize the importance of implementing policies that make it easier for women to reconcile domestic work and paid work, for example, the expansion of paternity leave, daycare assistance, and the creation of more full-time schools, among others.

Acknowledgment

The authors thank the comments of participants from the 50th Encontro Nacional de Economia for their suggestions and constructive criticism, as well as the two blind reviewers for their contributions.

We dedicate this work to our friend, professor and researcher Margarita Olivera, for her inspiration, passion and dedication to the study of feminist economics. Her legacy of research, ethics and her fight for the rights of women and minorities lives on through her friends and students. Marga left us were early, but she continues to live in all the hearts of those who admired her and her work.

References

- AGENJO-CALDERÓN, A.; GÁLVEZ-MUÑOZ, L. Feminist economics: theoretical and political dimensions. **American Journal of Economics and Sociology**, v. 78, n. 1, 2019.
- ALBRECHT, J.; BJÖRKLUND, A.; VROMAN, S. Is there a glass ceiling in Sweden? **Journal of Labor Economics**, v. 21, n. 1, p. 145-177, 2003.
- AKERLOF, G.; KRANTON, R. Economics and identity. **The Quarterly Journal of Economics**, v. 115, n. 3, p. 715-753, 2000.
- ARAÚJO, J. B. **O topo da distribuição salarial no Brasil: uma análise por gênero nos anos de 2005 e 2015**. Dissertação (Mestrado em Economia) – Programa de Economia do Centro de Desenvolvimento e Planejamento Regional, Faculdade de Ciências Econômicas, UFMG, Belo Horizonte, 2019.
- ARELLANO, M.; BONHOMME, S. Quantile selection models with an application to understanding changes in wage inequality. **Econometrica**, v. 85, n. 1, p. 1-28, 2017.
- BAHN, K.; COHEN, J.; RODGERS, Y. V. D. M. A feminist perspective on COVID-19 and the value of care work globally. **Feminist Frontiers**, v. 27, n. 695, p. 699, 2020.
- BECKER, G. Investment in human capital: a theoretical analysis. **Journal of Political Economy**, v. 70, n. 5, p. 9-49, 1962.
- BERIK, G.; KONGAR, E. The social provisioning approach in feminist economics. In: BERIK, G.; KONGAR, E. (Org.). **The routledge handbook of feminist economics**. Routledge, 2021. p. 3-23.
- BERTRAND, M. Coase lecture – the glass ceiling. **Economica**, v. 85, n. 338, p. 205-231, 2018.
- BIEWEN, M.; ERHARDT, P. ARHOMME: Stata module to estimate Arellano and Bonhomme quantile selection model. **The Stata Journal**, v. 21, n. 3, p. 602-625, 2021.
- CARRILLO, P.; GANDELMAN, N.; ROBANO, V. Sticky floors and glass ceilings in Latin America. **Journal of Economic Inequality**, v. 12, n. 3, p. 339-361, 2013.
- CODAZZI, K.; PERO, V.; SANT'ANNA, A. Social norms and female labor participation in Brazil. **Review of Development Economics**, v. 22, n. 4, p. 1513-1535, 2018.
- CORTÉS, P.; PAN, J. **Children and the remaining gender gaps in the labor market**. National Bureau of Economic Research, 2020. (Working Paper, 27980).

FERNANDEZ, B. Teto de vidro, piso pegajoso e desigualdade de gênero no mercado de trabalho brasileiro à luz da economia feminista: por que as iniquidades persistem? **Revista Cadernos de Campos**, n. 26, p. 79-103, 2019.

GOLDIN, C. A grand gender convergence: its last chapter. **American Economic Review**, v. 104, n. 4, p. 1091-1119, 2014.

GONZALEZ, L. Racismo e sexismo na cultura brasileira. In: RIOS, F.; LIMA, M. (Org.). **Por um feminismo afro latino americano**. Rio de Janeiro: Zahar, 2020. p. 75-93.

GUJINSKI, J.; WAJNMAN, S.; CHEIN, F. Evidências sobre o prêmio salarial masculino do casamento e da coabitação no Brasil. **Revista Brasileira de Estudos de População**, v. 40, p. 1-31, 2023.

HIRATA, H. Gênero, classe e raça: interseccionalidade e consubstancialidade das relações sociais. **Tempo Social**, v. 26, n. 1, p. 199-204, 2014.

HADDAD, Y.; PERO, V. Mulheres no comando? Segregação hierárquica e disparidades de gênero no mercado de trabalho brasileiro. In: 50º ENCONTRO NACIONAL DE ECONOMIA. **Anais [...]**. Fortaleza-CE: Anpec, 2022.

HIRATA, H.; KERGOAT, D. Novas configurações da divisão sexual do trabalho. **Cadernos de Pesquisa**, v. 37, n. 132, p. 595-609, 2007.

LUGONES, M. Rumo a um feminismo descolonial. **Revista Estudos Feministas**, v. 22, n. 3, p. 935-952, 2014.

NASCIMENTO, V.; LIMA, A. C. Segmentação produtiva e determinantes da inserção feminina nos mercados de trabalho metropolitanos brasileiros. **Cadernos de Ciências Sociais Aplicadas**, ano XIX, n. 33, p. 159-179, 2022.

KEE, H. Glass ceiling or sticky floor? Exploring the Australian gender pay gap. **Economic Record**, v. 82, n. 259, p. 408-427, 2006.

KERGOAT, D. Divisão sexual do trabalho e relações sociais de sexo. In: HIRATA, H. *et al.* (Org.). **Dicionário crítico do feminismo**. São Paulo: Unesp, 2009. p. 67-75.

LIMA, G. S.; NETO, A. C.; LIMA, M. S.; TANURE, B.; VERSIANI, F. O teto de vidro das executivas brasileiras. **Revista Pretexto**, v. 14, n. 4, p. 65-80, 2014.

MANGANELLI, A. **A mão invisível no teto de vidro**. 2012. 123 f. Dissertação (Mestrado em Economia) – Programa de Pós-Graduação em Economia do Desenvolvimento, Faculdade de Administração, Contabilidade e Economia, PUCRS, Porto Alegre, 2012.

MELO, H.; MORANDI, L. A divisão sexual do trabalho no contexto da pandemia. **Revista Trabalho Necessário**, v. 19, n. 38, p. 105-125, 2021.

MELO, H.; THOMÉ, D. **Mulheres e poder: histórias, ideias e indicadores**. FGV Editora, 2018.

MINCER, J. **Schooling, experience, and earnings**. New York: National Bureau of Economic Research, Columbia University Press, 1974.

PASSOS, L.; MACHADO, D. Diferenciais salariais de gênero no Brasil: comprando os setores público e privado. **Revista de Economia Contemporânea**, v. 26, p. 1-29, 2022.

SAFFIOTI, H. **A mulher na sociedade de classes: mito e realidade**. São Paulo: Expressão Popular, 2013.

SILVA, T. P. **Segregação hierárquica e a desvalorização salarial em cargos de liderança: uma análise do fenômeno do teto de vidro no mercado de trabalho formal brasileiro**. Dissertação (Mestrado em Economia) – Programa de Economia do Centro de Desenvolvimento e Planejamento

Regional, Faculdade de Ciências Econômicas, UFMG, Belo Horizonte, 2020.

SILVA, P.; RODRIGUES, F. D. M.; QUEIROZ, S. N. Trabalhadores em cargos de liderança no mercado de trabalho formal brasileiro entre os anos de 1995, 2005 e 2015. **Cadernos de Ciências Sociais Aplicadas**, v. 14, n. 24, p. 266-284, 2015.

VAZ, D. O teto de vidro nas organizações públicas: evidências para o Brasil. **Economia e Sociedade**, v. 22, n. 3, p. 765-790, 2013.

About the authors

Yasmin Mussalem Haddad is a PhD candidate and master in Economics at the Federal University of Rio de Janeiro (UFRJ), from where she also holds a Bachelor degree in Economics.

Valéria Lúcia Pero is a doctor in Economics by UFRJ and also an associate professor at the Institute of Economics of UFRJ.

Contact address

Yasmin Mussalem Haddad

Universidade Federal do Rio de Janeiro

Avenida Pasteur, 250, Palácio Universitário (Bloco da Economia), Urca

22290-902 – Rio de Janeiro-RJ, Brazil

Valéria Lúcia Pero

Universidade Federal do Rio de Janeiro

Avenida Pasteur, 250, Palácio Universitário (Bloco da Economia), Urca

22290-902 – Rio de Janeiro-RJ, Brazil

CRediT

Funding: Not applicable.

Conflicts of interest: The authors certify that they have no personal, commercial, academic, political or financial interest that represents a conflict of interest in relation to the manuscript.

Ethical Approval: The authors declare that the study did not include human beings or animals.

Availability of data and material: The content is already available (public data).

Authors' contributions:

Yasmin Mussalem Haddad: conceptualization; data curation; formal analysis; writing – original draft.

Valéria Lúcia Pero: conceptualization; writing – review & editing.

Editors: Bernardo Lanza Queiroz, Júlia Almeida Calazans and Maria Carolina Tomás

Resumo

Mulheres no comando? Segregação hierárquica e disparidades de gênero no mercado de trabalho brasileiro

Uma constatação da literatura empírica sobre desigualdades por sexo no mercado de trabalho é o maior diferencial salarial no topo da distribuição de renda ou em cargos de alta gerência, denominado “teto de vidro”. O presente artigo analisa as variáveis determinantes dos rendimentos de gerentes e dirigentes por quintil de renda, com o objetivo de compreender se existe um teto de vidro para as mulheres e pessoas negras nesse tipo de ocupação no Brasil. Além disso, consideram-se os efeitos de variáveis relacionadas aos cuidados e afazeres domésticos nos salários das mulheres comparativamente aos dos homens nesses cargos. Para tanto, com base na PNADC de 2022, foram realizadas estimações dos diferenciais salariais por sexo e cor, com base no modelo de regressões quantílicas com correção de vies de seleção. Os resultados das estimações apontam para a existência de teto de vidro para as mulheres, sendo mais pronunciado no setor público do que no privado. Verifica-se também a existência de um “teto de vidro” para as pessoas negras, bem como uma situação de maior marginalização das mulheres negras. Por fim, a variável de cuidados com pessoas maiores de 60 anos se mostra significativa e negativa somente para as mulheres nos quantis de renda inferiores. Esses resultados apontam para a importância do debate sobre políticas públicas que visam a diminuição das disparidades salariais nos cargos de alta gerência.

Palavras-chave: Gap de gênero. Segregação hierárquica. Teto de vidro. Retornos salariais.

Resumen

¿Mujeres a cargo? Segregación jerárquica y disparidades de género en el mercado laboral brasileño

Un hallazgo en la literatura empírica sobre las desigualdades por sexo en el mercado laboral es el mayor diferencial salarial en la parte superior de la distribución del ingreso o en los puestos de alta dirección, llamado “techo de cristal”. Este artículo analiza las variables determinantes de los salarios de los gerentes y directores por cuantiles de ingresos para comprender si existe un techo de cristal para las mujeres y las personas negras en este tipo de ocupación en Brasil. Además, considera los efectos de las variables relacionadas con el cuidado y las tareas domésticas en los salarios de las mujeres en comparación con los de los hombres en estos puestos. Para ello, con base en la PNADC de 2022, se realizaron estimaciones de diferenciales salariales por sexo y color a partir del modelo de regresión cuantílica con corrección por sesgo de selección. Los resultados de las estimaciones apuntan a la existencia de un techo de cristal para las mujeres, que es más pronunciado en el sector público que en el privado. También existe un “techo de cristal” para las personas negras y una situación de mayor marginación para las mujeres negras. Finalmente, la variable de cuidado de personas mayores de 60 años es significativa y negativa solo para las mujeres en los cuantiles de menores ingresos. Estos resultados apuntan a la importancia del debate sobre políticas públicas orientadas a reducir las disparidades salariales en los puestos de alta dirección.

Palabras clave: Gap de género. Segregación jerárquica. Techo de cristal. Retornos salariales.

Received for publication in 05/08/2025
Approved for publication in 02/04/2026

Statistical Appendix

Table 1 – Select descriptive statistics for the general population and managers and directors
Brazil – 2019

Characteristic	Public sector				Private sector			
	General population		Managers and directors		General population		Managers and directors	
	Mean	Standard error	Mean	Standard error	Mean	Standard error	Mean	Standard error
Woman	0.57	0.00	0.47	0.02	0.40	0.00	0.39	0.00
White	0.43	0.01	0.53	0.05	0.41	0.00	0.63	0.02
Age	41.87	0.07	44.80	0.32	38.77	0.03	41.72	0.15
Schooling	13.62	0.02	14.71	0.08	9.89	0.01	13.30	0.04
Head of household	0.48	0.00	0.56	0.16	0.46	0.01	53.94	0.00
Wage	3.417	25.19	5.944	173.59	1.741	7.05	4.903	81.26
Hourly earnings	92.10	0.67	152.05	4.51	45.10	0.25	117.72	5.16
Working hours	37.65	0.64	40.52	0.30	39.17	0.03	45.19	0.14
Formal	0.76	0.00	0.66	0.01	51.79	0.01	0.82	0.00

Source: Author’s elaboration based on data from PNADC 2019.

Table 2 – Performance of domestic tasks and care of children and older adults and time spent
Brazil – 2019

Variables	Public				Private			
	General		Directors and managers		General		Directors and managers	
	Women	Men	Women	Men	Women	Men	Women	Men
Performance of domestic tasks (%)	99.05	97.12	98.31	95.93	99.22	97.18	98.85	96.70
Care of children aged 0 to 5 (%)	16.58	17.16	15.42	16.02	17.97	18.43	16.05	19.30
Care of children aged 6 to 14 (%)	20.26	18.90	22.89	21.21	20.78	18.19	19.65	20.01
Care of people over 60 (%)	3.36	2.56	3.37	4.28	2.56	2.09	1.99	2.00
Time spent on domestic tasks and care	17.60	10.81	15.45	9.39	18.76	10.31	15.42	9.74

Source: Author’s elaboration based on data from PNADC 2019.

Table 3 – Gender and race composition by sector
Brazil – 2019

Variables	Public		Private	
	General sample		General sample	
	Directors and managers		Directors and managers	
White men	17.35		23.55	
Black or mixed-race men	24.85		36.13	
White women	26.05		17.55	
Black or mixed-race women	31.76		22.76	

Source: Author’s elaboration based on data from PNADC 2019.