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An Analysis from 1995 to 2021

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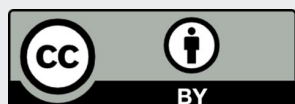
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Changes in Brazil's Gender Earning Gap: An Analysis from 1995-2021*

Manuel Urquidi, Miguel Chalup, Solange Sardán **

Abstract

The gender earnings gap in Latin America is an obstacle to achieving gender equality and sustainable development. In Brazil, this gap persists despite the fact that, in many cases, women have a higher labor profile than men, suggesting the existence of gender biases. It is also evident that this gap is greater among informal sector workers. Additionally, there is a difference in income, which generally favors men in most occupations. To analyze the gender earnings gap in Brazil between 1995 and 2021, this study uses the National Household Sample Surveys from the Brazilian Institute of Geography and Statistics (IBGE), harmonized by the Inter-American Development Bank (IDB). Two methodologies are presented for estimating it: the Blinder-Oaxaca decomposition and the Ñopo method. The analysis over more than two decades suggests the existence of biases or social norms in favor of men. It also allows us to observe a gradual reduction in the total gender earnings gap over the period considered. This indicates that additional efforts are needed to understand the recorded disparity.

The analysis shows that, while the overall gap has decreased, as has happened in many other countries in the region, this reduction is generally related to the explained gap (derived from individuals' endowments in education, work experience, and age), and not to a reduction in the gap that cannot be explained by these variables.

The latter could be associated with gender-differentiated norms, prejudices, biases, or discrimination, which persist over time.

JEL CODES: J16, J31, J71.

Keywords: gender economics, earnings gap, discrimination.

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This document is part of a series of country-specific studies, so parts of it may be similar across specific studies.

** Inter-American Development Bank

Introduction

In recent years, Latin America and the Caribbean (LAC) have experienced significant changes in the traditionally assigned roles of men and women. There has been an increase in the political representation of women, as well as in their levels of education and participation in the labor market. However, challenges persist regarding the labor inclusion of women and their professional development opportunities (Frisancho and Queijo, 2022).¹

Among the main gender gaps affecting women in the countries of the region, the gender earnings gap stands out, as observed in previous studies (Ñopo, 2012). These studies show that women, despite holding similar positions and having comparable educational levels, earn lower incomes compared to their male counterparts. Therefore, it is necessary to analyze the factors causing this situation.

When addressing challenges related to the labor inclusion of women and their professional development opportunities, Ñopo (2012) highlights a persistent issue in Latin America and the Caribbean (LAC): occupational and hierarchical segregation. This is reflected in the higher proportion of women working in the informal sector and their lower representation in executive positions. Additionally, there are noticeable differences in women's labor earnings compared to those of men. Although LAC has improved its gender equality indicators since the late 20th century (Chioda, 2011) and has experienced an increase in the political and labor participation of women (Ñopo, 2012), unexplained gender pay differences still persist for similar jobs in most countries (ILO, 2019c).

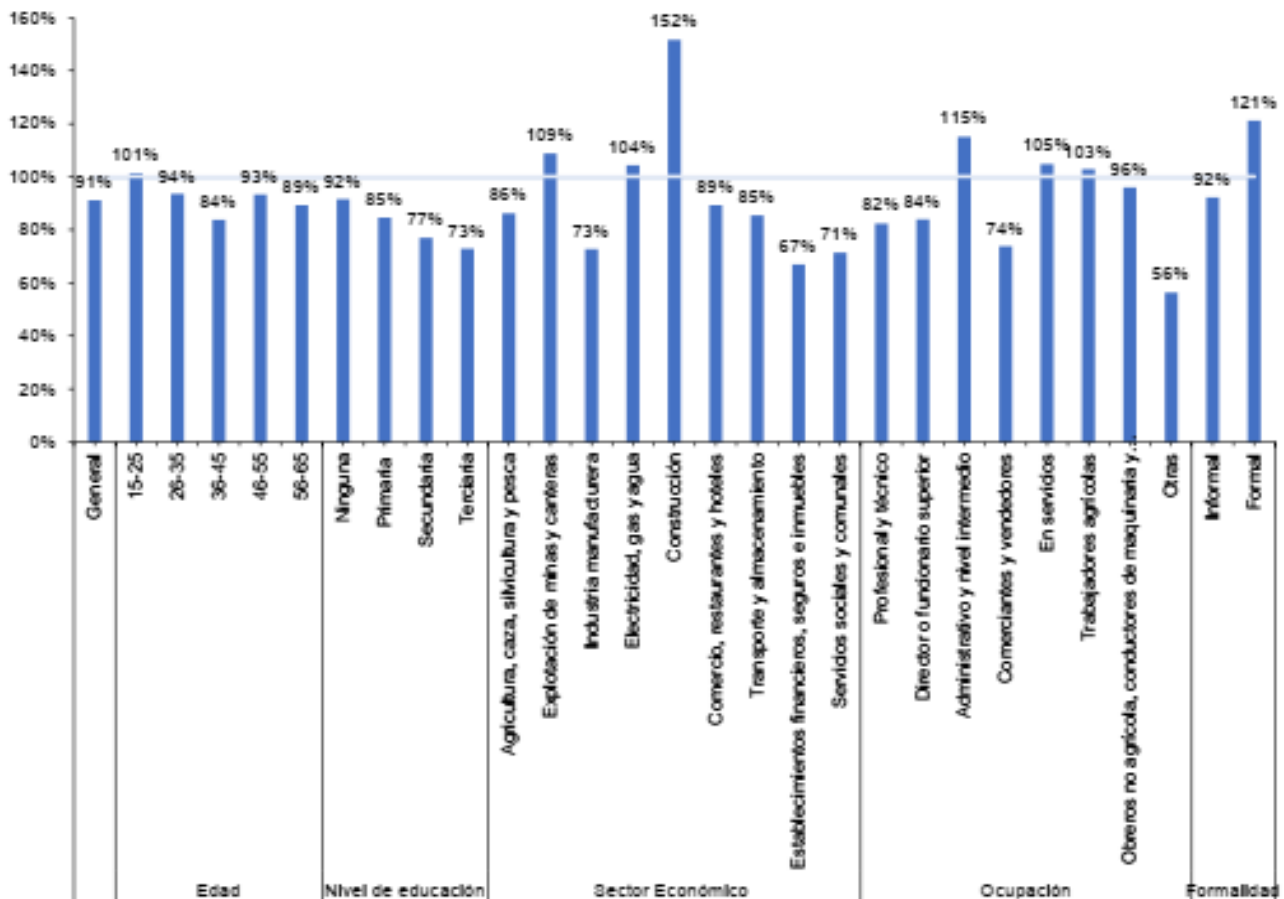
Furthermore, the crisis triggered by the COVID-19 pandemic has had a significant impact on women's labor participation. It is estimated that 13 million women in the region lost their jobs, and the women's labor force participation rate decreased by 16 percentage points, compared to a 10 percentage point decrease for men. This crisis has highlighted that women are concentrated in more vulnerable sectors, exacerbating gender gaps and partially reversing the progress made (Bustelo, Suaya, and Vezza, 2021). Additionally, it has deepened the concentration of women in part-time jobs.

In the World Economic Forum's Global Gender Gap Index (WEF, 2022), Brazil currently ranks 94th out of 146 countries. Within Latin America and the Caribbean, it stands at the 20th position out of 22 countries, with a score of 0.695 out of 1. Compared to 2006 when the index was first implemented, and Brazil scored 0.6543, the country has improved by 0.0407. However, since then, it has fallen 27 positions (from 67th place). It's important to note that in the index's first year of measurement, only 115 countries were evaluated.

¹ The study evaluates the impact of gender inequalities in the Southern Cone countries of Latin America (Brazil, Chile, Paraguay, and Uruguay) and provides evidence of their economic consequences, drivers, and policy tools that can help mitigate them. It also reveals that the female employment rate in Brazil fluctuates between 40% and 50% during the analysis period from 1991 to 2019, with a rate of 47% in the last year of analysis. Furthermore, Brazil had the lowest monthly income gap in the Southern Cone in 2019, with a value close to 19%.

Specifically, in the areas of participation and economic opportunities, Brazil is ranked 85th, primarily due to low female labor force participation (93rd place) and income inequality between men and women in similar jobs (117th place). Regarding political representation, the country ranks 104th, with women occupying 14.8% of parliamentary seats. In terms of educational achievements, Brazil shares the top spot on the index with 28 other countries, all having a 0% illiteracy rate and high enrollment rates in secondary and tertiary education.

Graph 1: Earnings per Hour of Women vs. Men in Brazil in 2021*



Source: Own elaboration based on household surveys from Brazil harmonized by the Inter-American Development Bank (IDB).

*Only individuals with occupation and income were included.

Data analyzed from the harmonized permanent household surveys of Argentina by the IDB support these facts. As shown in Figure 1, in 2021, women's hourly earnings was on average 96% of men's, with the highest gap observed among individuals aged 36 to 45 (90%), those with primary education (84%), in the manufacturing industry (78%), among agricultural workers (46%), and in the informal sector (88%).² Some results that may seem counterintuitive - such as the

² Informal workers are defined for this study as economically active individuals who are not affiliated with and do not contribute to the pension system in Brazil.

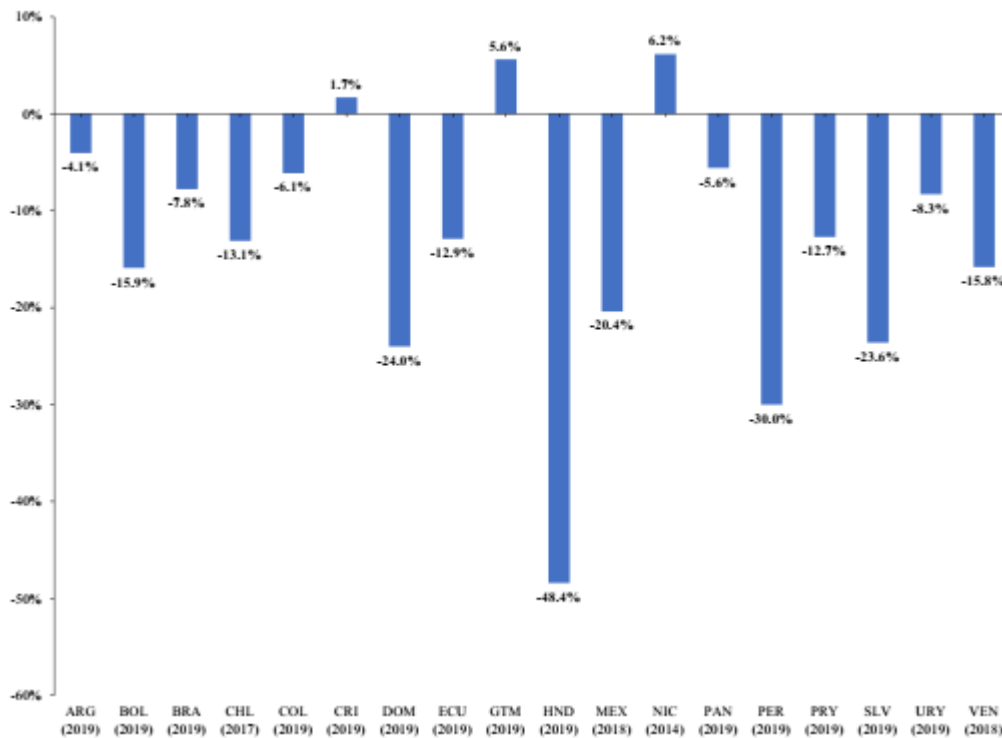
fact that in the sector encompassing agriculture, forestry, hunting, and fishing, women earn on average 171% of men's hourly earnings - can be explained by selection bias. As will be discussed in more detail in the methodology section, when there are few women in a sector of the economy or in certain regions, it is not uncommon for the few who enter to do so in higher hierarchical ranks with better earnings. This can be observed when studying women's participation in the sector (Tables A1 and A2 in the appendix) and can have direct effects on their overall labor force participation. However, the analysis requires a specific methodology different from that used in this study.

While the availability of information is still limited, in recent years, the number of studies on this topic in Latin America and the world has increased considerably. In the case of Argentina, the quantity of existing research documents is above the regional average, and most of them use the country's permanent household surveys as a source of information. However, given that there are different ways to approach this issue, it is acknowledged that comparing the results of different studies and tracking the evolution of the gender earnings gap can be challenging.

This study aims to enrich the current understanding of gender earnings disparity in Brazil through a rigorous analysis of the gap's evolution from 2002 to 2019. Three previous studies serve as references: the first one on Bolivia (Urquidi, Valencia, and Durand, 2021), the second one on Paraguay (Urquidi, Chalup, and Durand, 2022), and the third one on eighteen countries in the region (Urquidi and Chalup, 2023). Additionally, two analysis methodologies are employed: the Blinder-Oaxaca decomposition and the Ñopo method, which means that results will be obtained from both a parametric and a non-parametric model. This allows for year-to-year comparisons and comparisons of the methodologies themselves to better identify the main variables affecting the earnings gap.

The previous regional study provides comparable information across countries (see Graph 2). The present analysis extends the age range of this data, examines the evolution over time, and provides information with greater geographic disaggregation for the country.

Graph 2. Total Hourly Labor Earnings Gap Estimated Using the Blinder-Oaxaca Decomposition Model*



Source: Urquidi and Chalup, 2023.

*Only individuals with occupation and income were included.

The analysis results suggest that this earnings gap persists despite the fact that, in many cases, women have a better labor profile than men, which implies the existence of gender biases. Additionally, it is evident that this gap is more pronounced among informal sector workers. Furthermore, there is a varied earnings difference, typically in favor of men, across most occupations. The gap cannot be explained by the different control variables used, such as experience, personal and family characteristics, sector and economic activity, and region or area of the country. Therefore, it is likely associated with normative factors, biases, and/or discrimination, as suggested by Becker in 1957. On the other hand, it is evident that, if only the labor profile is considered, women's wages should be higher. Among the potential factors contributing to this gap are the presence of normative aspects, cognitive biases, and labor costs related to childcare³ that are not visible to society. The analysis over time suggests the presence of gender biases and also allows for the observation of a gradual reduction in the total earnings gap between men and women over the analyzed period. This indicates that additional efforts are needed to understand this disparity.

The present study is organized as follows: In the first section, there is a review of the literature related to the gender earnings gap in Brazil and Latin America. The

³ For strictly stylistic reasons, this document uses the inclusive, unmarked masculine gender, regardless of the sex of the individuals.

second section describes the data used and provides descriptive statistics on the evolution of the earnings gap in Brazil over the analyzed years. The third section briefly explains the methodologies used to estimate the gender earnings gap, while the fourth section presents the results of the analysis. Finally, the fifth section discusses the study's conclusions and their implications.

1. Literature Review

Regarding the gender earnings gap, the literature has sought to distinguish between that generated by differences in individual characteristics and human capital endowments among people and that unexplained part primarily related to gender biases and discrimination (Atal, Ñopo, and Winder, 2009). The two most commonly used econometric techniques in recent years for analyzing this issue based on household surveys in different countries are: (i) the Blinder-Oaxaca decomposition introduced by Oaxaca (1973), and (ii) the Ñopo decomposition presented more recently in Ñopo (2008)⁴.

Furthermore, there are new studies that identify previously unanalyzed components that also contribute to the gender earnings gap. For example, Kleven, Landais, and Søgaaard (2019) focus on the penalty of motherhood and its impact on the wage gap, using administrative data from Denmark. Additionally, Ajayi et al. (2022) analyze the differences in socioemotional skills' impact on the wage gap, providing evidence from 17 African countries. Meanwhile, Ammerman and Groyberg (2021) investigate widespread organizational barriers and managerial actions that result in the existence of the "glass ceiling" in women's professional development in the United States. In another context, Bustelo et al. (2021) concentrate on the effect of occupation and career selection on incomes, addressing the case of Brazil, while Bordón, Canals, and Mizala (2020) do the same for Chile.

In the Latin American context, Frisancho and Queijo (2022) compile a series of studies documenting persistent gender inequalities in the countries of the Southern Cone of Latin America⁵ and explore how reducing these gaps would significantly boost economic growth and development in the region. These authors show that gender gaps in access to public services, the accumulation of human capital, and the labor market limit overall productivity and economic growth. Hence, policies aimed at mitigating such inequalities have the potential to foster economic development and well-being.

In a previous study (Chioda, 2011), it was observed that in Latin America and the Caribbean (LAC), women's labor force participation had increased since the 1980s, facilitated by economic growth, trade liberalization, urbanization, reduced fertility rates, and increased education levels. This phenomenon intensified after 2000 when the region's high growth rates created increased labor demand, allowing more women to enter the labor market, along with direct promotion of female labor through public policies (Gasparini and Marchionni, 2015). However, Ñopo (2012) points out that women are still overrepresented in informal and low-paid jobs, and the gender pay gap remains significant.

⁴ These techniques are explained in detail in the third section.

⁵ Argentina, Brazil, Chile, Paraguay y Uruguay.

A classic analysis of this topic is that of Psacharopoulos and Tzannatos (1992), who studied the earnings gap in 15 LAC countries in the late 1980s. Among their findings is the fact that, for similar jobs, women earned on average 65% of what men earned. They also observed that two-thirds of this difference were not explained by educational level or human capital but likely by normative factors, biases, or discrimination. It is important to note that, according to the literature, while the total earnings gap has reduced, with a significant portion of this reduction attributed to the increased educational level of women, the unexplained gap persists (Chioda, 2011; Gasparini and Marchionni, 2015).⁶

One of the most recent analyses for LAC on this topic was conducted by the International Labour Organization (ILO, 2019b). They studied 17 countries and used the Ñopo decomposition technique (2008), comparing salaries among individuals with the same observable characteristics. First, they found that the gender earnings gap unexplained by gender decreased by a couple of percentage points between 2012 and 2017. Second, they detected that this gap is generally higher for self-employed workers than for employees and increases when there are children under six years old in the household and when it comes to part-time and/or informal work. Finally, for Brazil, they found that the unexplained gender earnings gap for self-employed and employed workers is approximately 25%. They also observed that in Brazil, the female participation rate increased significantly in the 1990s, going from being stagnant at levels below 20% to 49.5% in the 1990s, 57.8% in the 2000s, and 59% in the 2010s. In contrast, the male participation rate was 75.5% in the 2010s.

Matos and Machado (2006), using the National Household Sampling Survey (Pesquisa Nacional de Amostra Domiciliar PNAD) from 1987 to 2001 and the Oaxaca-Blinder decomposition, found that the unexplained portion of the earnings gap between white men and women decreased from 13.05% to 8.11% between 1987 and 2001. For both years, the explained part of the gap was negative, at -1.34% and -2.75%, respectively, meaning that considering observable characteristics, women should have higher average earnings. When comparing white men and women, they found that the unexplained part of the gap had a slight increase, from 10.02% to 11.35% between 1987 and 2001, while the explained part of the gap changed from -5.01% to -0.23%. According to the authors, the reduction in fertility rates and the favorable educational gap for women would have created better conditions for women when entering the labor market.

Cepal et al. (2008) analyzed female participation in the labor market between 1995 and 2005, finding that it increased from 58% to 64%. They concluded that this increase was due to improvements in women's educational levels and that women became more active in their job search processes starting in the 1990s. However, the participation rate gap between men and women was still 23%. They also found

⁶ As can be seen in Table A1 in the annex, the average years of education for women increased from 7,1 to 12,2 between 1995 and 2021, while for men, it increased from 5,8 to 10,7 over the same period.

that unemployment affected women and Afro-descendants more. In 2006, unemployment rates were 5.6% for white men, 7.1% for Afro-descendant men, 9.6% for white women, and 12.5% for Afro-descendant women. During the study period, racial inequalities showed a more pronounced impact than gender inequalities in terms of informality. In 2006, the informality rate was 42.8% for white men, 47.4% for white women, 57.1% for Afro-descendant men, and 62.7% for Afro-descendant women. Earnings inequality by race and gender was closing between 1992 and 2006. In 2006, the gap remained significant. Women received, on average, 70.7% of male average earnings, and Afro-descendants received 53.2% of a white person's average earnings.

Hoyos and Ñopo (2010) estimated gender earnings gaps for 18 Latin American countries between 1992 and 2007 using Ñopo's methodology. For this study period, there was an average reduction of 7 and 4 percentage points in the explained and unexplained gaps, respectively. The gap decreased mainly among workers who shared one or more of the following characteristics: they were in the lower part of the income distribution, had children at home, were self-employed, worked part-time, and/or lived in rural areas. These were the segments of the labor market that previously exhibited the most significant gender disparities. Most of the reduction in the unexplained component of the gap occurred within different segments of the labor market, not due to their recomposition or structural change. Lastly, there was significant heterogeneity among countries: the unexplained gap did not change in 12 of them, decreased in four, and increased in two. For Brazil, they found that in 1992, the unexplained gap ranged from 44% to 47%, while in 2008, it was between 38% and 40%. When calculating by percentiles, they found that the unexplained gap was smaller for percentiles 20 to 40 in 1992 and for percentiles 10 to 30 in 2008.

Marchionni, Gasparini, and Edo (2019) conducted an analysis of gender educational and labor gaps. By 2015, Brazil no longer had educational gaps favoring men, both in rural and urban areas. Regarding tertiary education, men were enrolling more in fields like engineering, manufacturing, construction, information technology, and communication, while women were enrolling more in fields related to health, well-being, and education, following the pattern of other countries in the region. The labor force participation rate for women aged 25 to 54 was around 71%, while that of men was above 90% in 2015. Unemployment for women was 9.1%, and for men, it was 5.9%. Women were more involved in high-skilled jobs (almost 20% more than men). When it came to higher-ranking jobs, women participated nearly 41% less than men, suggesting the existence of glass ceilings. The male/female wage ratio was 84% for urban individuals aged 25 to 54 (using average salary without control variables). To contrast this data, the authors performed multivariate regressions of the logarithm of hourly wages against a gender dummy and other observable factors. For Brazil, the coefficient of this dummy showed an unfavorable gap for women.

In light of the aforementioned findings, the International Labour Organization (ILO, 2019a) conducted a study in the same direction, though this time using the methodology of Firpo, Fortin, and Lemieux (2009), based on the classic Oaxaca-Blinder approach. Through an analysis of decomposing the explained and unexplained parts, they obtained results that varied among countries. The explained part relates to differences in endowments, such as educational achievements, work experience, age, and other factors, accompanied by polarization and professional segregation that tends to assign women to lower-paying occupations and industries. On the other hand, the unexplained part was found to have a greater impact on the determination of the wage gap, suggesting the existence of an unobserved income disadvantage against women. Using the National Household Sampling Survey (Pesquisa Nacional por Amostra de Domicílios) from 2015, the ILO (2019a) calculated that, for Brazil, the unweighted average gender wage gap using hourly wages was 10.2%, while using monthly earnings, it was 20.1%. When grouping the population of wage-earning employees according to their education, age, type of workday, and employment in the private or public sector, they calculated that the weighted average gender wage gap using hourly wages was 26.4%, and using monthly earnings, it was 27.2%. In other words, when controlling for observable factors, the gap increased. They also found that, using decomposition techniques proposed by Fortin, Lemieux, and Firpo (2011), there does not appear to be an unexplained part of the gap close to 0%.

Acevedo et al. (2022) analyzed changes in the female labor market resulting from the 2020 health crisis. For Brazil, they calculated various indicators using the National Continuous Sample Household Survey (Pesquisa Nacional por Amostra de Domicílio Contínua - PNADC) in 2019, 2020, and 2021. The gender gap in labor force participation remained unchanged, but the gender gap in unemployment increased unfavorably for women. The female employment rate was more affected than that of men in the second quarter of 2020, widening this gender gap. Using control variables, they estimated that in 2020, women reduced their probability of being employed by 16%, and men by 9%. Finally, they found that, compared to 2019 incomes, women lost a higher proportion of their labor income.

Mclsaac et al. (2022) conducted an analysis of the gender wage gap in the health and care sector, before the COVID-19 pandemic period. They found that wage differences in the sector were highly unfavorable to women in 54 countries. In Brazil, using the average hourly wage, the gross gender wage gap they calculated was 41% for the health and care sector, while for other sectors, it was 12.3%. Using the median instead of the average, these gaps were approximately 22% and 10%, respectively. While the gross gap for Brazil was the highest among the 54 countries studied, calculating the wage gap weighted by occupational category reduced it to 25%, ranking the country sixth. Using the propensity score matching method and the unconditional quantile regression method (Fortin, Lemieux, and Firpo, 2011), they found an explained gap of 2% and an unexplained gap of 34%. These

results were calculated using the National Household Sample Survey (Pesquisa Nacional por Amostra de Domicílios) from 2018.

In the context of the pandemic, according to CEPAL (2022), women are the ones who absorb the effects of crises, intensifying the amount of time dedicated to unpaid domestic work. For Brazil, they calculate that women aged 14 and older dedicate an average of 22.1 hours per week to unpaid work and 16.8 hours to paid work, while men of the same age group dedicate an average of 11.1 hours to unpaid work and 28.3 hours to paid work. They also note that in Brazil, a 65.5% increase in full-time jobs would be needed to cover the unpaid work performed in households relative to the employed population. Finally, they highlight the low political representation of women in Brazil, as in 2018, only 15.7% of local government seats were occupied by women.

Durán and Galván (2023) conducted a study of gender wage gaps using the National Continuous Sample Household Survey from 2011, 2014, and 2018. They found that women's participation in salaried employment increased from 39.6% to 43.1% between 2011 and 2018. Using hourly wages and quantile regressions, they calculated that the wage gap between men and women decreased from 18% to 14.5% between 2011 and 2018 for the 50th percentile in Brazil. They also found that the wage gap was higher in highly skilled sectors.

2. Data and Descriptive Statistics

The figures used in this study are sourced from the database of household surveys harmonized by the Inter-American Development Bank (IDB). Data from 25 consecutive years between 1995 and 2021 were used, with the exceptions of 2000 and 2010 when surveys were not conducted. 1995 was chosen as the starting year since that's when data collection from household surveys in Brazil began, and harmonization efforts were initiated by the IDB team. It's worth noting that starting in 2016, this survey has been conducted continuously, and monthly variables were added to the different regressions to account for seasonality.

It's important to highlight the challenges associated with the data, as achieving comparability among different years and across various countries in Latin America and the Caribbean (LAC) requires harmonization. This harmonization process is carried out by the IDB's data harmonization system.

The design and level of representativeness of these surveys are similar across different years, as they are all representative of the total population of Brazil and draw data from the country's main regions⁷. In Table 1, the sample is presented for individuals aged between 15 and 65, which is the age range used in the analysis for each year, along with its representativeness in the total Brazilian population⁸. The analysis is further disaggregated by gender and age group.

The proportions in the sample closely mirror the proportions they represent in the population. Additionally, the sample is evenly distributed between genders, while the variation in age group proportions aligns with the aging population trends observed in both Brazil and most countries in LAC (Cardona Arango and Peláez, 2012). There is also a noticeable gradual increase in the number of samples over time, in line with population growth. However, starting in 2020, there is evidence of a reduction in samples, which is likely related to the challenges of sample collection during the health crisis.

As an initial approach to calculating the gender earnings gap, Table 2 provides the estimation of hourly labor earnings for women compared to men⁹. The analysis is further broken down by age group, educational level, economic activity, occupation, formality, self-employment, and regions. Additionally, in Annex Table A1, the distribution by year and gender of the characteristics of the employed population receiving earnings are presented. This provides an overview of the general characteristics of both men and women.

⁷ The regions included in the survey are Rondônia, Acre, Amazonas, Roraima, Pará, Amapá, Tocantins, Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Minas Gerais, Espírito Santo, Rio de Janeiro, São Paulo, Paraná, Santa Catarina, Rio Grande do Sul, Mato Grosso do Sul, Mato Grosso, Goiás, and the Federal District.

⁸ Frequency weightings are used.

⁹ Labor income from the main activity is used along with frequency weightings.

Cuadro 1. Number of Observations in Surveys and Their Representation by Gender and Age Group

	1995		1996		1997		1998		1999		2001		2002		2003		2004	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender																		
Men	101,202	48%	101,347	48%	106,780	48%	107,342	48%	110,261	48%	119,649	48%	122,663	48%	123,499	48%	124,983	48%
Representativity	46,235,049	48%	47,410,045	48%	48,249,816	49%	49,429,077	49%	50,345,721	48%	54,187,282	48%	55,392,602	48%	56,614,358	48%	57,334,291	48%
Women	108,631	52%	109,182	52%	114,295	52%	115,017	52%	118,481	52%	128,633	52%	131,705	52%	132,196	52%	134,985	52%
Representativity	49,104,541	52%	50,413,428	52%	51,212,642	51%	52,417,937	51%	53,471,105	52%	57,923,863	52%	59,057,053	52%	60,314,999	52%	61,591,342	52%
Age																		
15-25	69,987	33%	70,363	33%	73,602	33%	73,871	33%	75,680	33%	82,003	33%	82,958	33%	82,725	32%	82,401	32%
Representativity	31,313,398	33%	32,231,484	33%	32,573,970	33%	33,322,210	33%	33,918,544	33%	36,376,411	32%	36,640,905	32%	37,173,675	32%	37,035,376	31%
26-35	52,907	25%	51,666	25%	54,499	25%	53,575	24%	54,733	24%	59,022	24%	59,778	24%	60,384	24%	60,971	23%
Representativity	23,696,964	25%	23,717,842	24%	24,241,384	24%	24,209,782	24%	24,462,415	24%	26,241,602	23%	26,585,395	23%	27,115,382	23%	27,514,154	23%
36-45	41,433	20%	42,100	20%	44,252	20%	45,099	20%	46,570	20%	50,678	20%	52,319	21%	51,955	20%	53,284	20%
Representativity	18,970,073	20%	19,679,725	20%	20,055,326	20%	20,724,591	20%	21,236,901	20%	23,102,194	21%	23,725,742	21%	23,924,931	20%	24,460,211	21%
46-55	27,156	13%	27,771	13%	29,286	13%	30,146	14%	31,429	14%	34,837	14%	36,531	14%	37,443	15%	38,899	15%
Representativity	12,669,695	13%	13,188,661	13%	13,448,718	14%	14,201,840	14%	14,609,569	14%	16,149,513	14%	16,865,879	15%	17,601,805	15%	18,299,604	15%
56-65	18,350	9%	18,629	9%	19,436	9%	19,668	9%	20,330	9%	21,742	9%	22,782	9%	23,188	9%	24,413	9%
Representativity	8,689,460	9%	9,005,761	9%	9,143,060	9%	9,388,591	9%	9,589,397	9%	10,241,425	9%	10,631,734	9%	11,113,564	10%	11,616,288	10%
Total	209,833	100%	210,529	100%	221,075	100%	222,359	100%	228,742	100%	248,282	100%	254,368	100%	255,695	100%	259,968	100%
Representativity	95,339,590	100%	97,823,473	100%	99,462,458	100%	101,847,014	100%	103,816,826	100%	112,111,145	100%	114,449,655	100%	116,929,357	100%	118,925,633	100%

	2005		2006		2007		2008		2009		2011		2012		2013	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender																
Men	128,865	48%	133,069	48%	130,605	48%	128,673	48%	131,419	48%	119,153	48%	121,194	48%	121,291	48%
Representativity	58,596,340	48%	60,545,958	48%	61,624,753	48%	62,640,529	48%	63,423,789	48%	65,038,720	48%	66,878,179	48%	67,610,863	48%
Women	138,473	52%	142,894	52%	139,542	52%	137,607	52%	141,615	52%	127,978	52%	129,332	52%	130,038	52%
Representativity	62,576,504	52%	64,736,928	52%	65,579,382	52%	66,611,315	52%	67,813,047	52%	69,568,709	52%	71,196,263	52%	72,264,037	52%
Age																
15-25	84,039	31%	84,576	31%	80,329	30%	76,936	29%	77,330	28%	67,758	27%	67,358	27%	66,677	27%
Representativity	37,515,591	31%	37,800,543	30%	37,121,918	29%	36,753,935	28%	36,606,515	28%	36,323,234	27%	36,523,309	26%	36,448,923	26%
26-35	62,672	23%	64,760	23%	64,171	24%	62,985	24%	65,640	24%	58,754	24%	59,412	24%	58,572	23%
Representativity	27,955,689	23%	28,957,168	23%	29,753,061	23%	30,170,324	23%	31,048,729	24%	31,728,544	24%	32,374,919	23%	32,340,585	23%
36-45	54,623	20%	57,057	21%	55,462	21%	55,038	21%	55,800	20%	50,154	20%	50,509	20%	51,203	20%
Representativity	24,740,765	20%	25,917,400	21%	26,296,053	21%	26,695,421	21%	26,888,986	20%	27,305,251	20%	27,877,096	20%	28,393,797	20%
46-55	40,623	15%	42,598	15%	42,703	16%	43,569	16%	44,928	16%	42,046	17%	43,345	17%	43,691	17%
Representativity	18,949,131	16%	19,849,480	16%	20,597,065	16%	21,617,429	17%	22,117,962	17%	23,211,560	17%	24,246,402	18%	24,776,760	18%
56-65	25,381	9%	26,972	10%	27,482	10%	27,752	10%	29,336	11%	28,419	11%	29,902	12%	31,186	12%
Representativity	12,011,668	10%	12,758,295	10%	13,436,038	11%	14,014,735	11%	14,574,644	11%	16,038,840	12%	17,052,716	12%	17,914,835	13%
Total	267,338	100%	275,963	100%	270,147	100%	266,280	100%	273,034	100%	247,131	100%	250,526	100%	251,329	100%
Representativity	121,172,844	100%	125,282,886	100%	127,204,135	100%	129,251,844	100%	131,236,836	100%	134,607,429	100%	138,074,442	100%	139,874,900	100%

Table 1 (Continuation)

	2014		2015		2016		2017		2018		2019		2020		2021	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Gender																
Men	121,829	48%	120,331	48%	156,663	49%	155,856	49%	153,726	49%	150,209	49%	119,095	48%	112,103	48%
Representativity	68,325,435	48%	69,189,829	48%	70,130,627	48%	70,409,558	48%	71,414,828	49%	70,995,622	48%	72,429,149	49%	72,999,759	49%
Women	130,725	52%	128,773	52%	163,310	51%	163,078	51%	161,276	51%	158,006	51%	127,983	52%	120,532	52%
Representativity	73,231,515	52%	73,766,432	52%	74,809,917	52%	75,722,130	52%	74,539,758	51%	76,405,136	52%	75,513,661	51%	75,810,168	51%
Age																
15-25	65,708	26%	63,732	26%	83,065	26%	81,983	26%	78,773	25%	75,794	25%	58,098	24%	54,026	23%
Representativity	36,319,513	26%	35,997,645	25%	36,206,985	25%	36,525,415	25%	36,981,466	25%	35,041,668	24%	36,254,035	25%	35,959,613	24%
26-35	58,145	23%	56,021	22%	70,653	22%	69,257	22%	67,361	21%	65,073	21%	49,821	20%	44,955	19%
Representativity	32,281,791	23%	31,889,520	22%	32,441,086	22%	32,125,679	22%	34,377,968	24%	31,817,000	22%	34,061,958	23%	33,909,351	23%
36-45	51,666	20%	51,776	21%	65,717	21%	66,181	21%	66,247	21%	65,119	21%	53,014	21%	50,068	22%
Representativity	28,891,776	20%	29,682,775	21%	30,288,289	21%	30,894,919	21%	30,791,192	21%	31,554,503	21%	32,112,685	22%	32,476,101	22%
46-55	44,503	18%	44,792	18%	57,670	18%	57,366	18%	57,231	18%	56,530	18%	46,754	19%	44,760	19%
Representativity	25,317,106	18%	26,077,908	18%	26,327,280	18%	26,272,516	18%	25,045,092	17%	27,318,025	19%	25,716,413	17%	26,033,090	17%
56-65	32,532	13%	32,783	13%	42,868	13%	44,147	14%	45,390	14%	45,699	15%	39,391	16%	38,826	17%
Representativity	18,746,764	13%	19,308,413	14%	19,676,904	14%	20,313,159	14%	18,758,868	13%	21,669,562	15%	19,797,719	13%	20,431,772	14%
Total	252,554	100%	249,104	100%	319,973	100%	318,934	100%	315,002	100%	308,215	100%	247,078	100%	232,635	100%
Representativity	141,556,950	100%	142,956,261	100%	144,940,544	100%	146,131,688	100%	145,954,586	100%	147,400,758	100%	147,942,810	100%	148,809,927	100%

Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB).

Table 2. Hourly Labor Earnings for Women vs. Men

	1995	1996	1997	1998	1999	2001	2002	2003	2004	2005	2006	2007	2008
General	72.9%	81.6%	79.5%	81.0%	85.1%	83.6%	84.2%	82.8%	81.6%	84.8%	84.0%	84.3%	83.0%
Age													
15-25	85.5%	92.4%	93.9%	96.3%	93.1%	99.3%	99.0%	99.7%	98.2%	97.9%	97.6%	97.1%	94.8%
26-35	81.3%	86.7%	86.6%	87.6%	90.7%	90.3%	94.4%	97.9%	84.2%	90.8%	90.6%	90.9%	87.8%
36-45	71.1%	83.8%	77.7%	78.7%	82.3%	79.3%	79.9%	75.4%	78.7%	81.4%	82.6%	86.2%	80.9%
46-55	64.8%	69.1%	68.4%	70.6%	76.4%	76.3%	73.8%	69.6%	74.5%	78.8%	74.8%	74.0%	76.6%
56-65	54.9%	70.8%	69.7%	71.4%	92.5%	79.2%	77.1%	76.4%	82.6%	76.2%	75.8%	71.2%	76.6%
Level of Education													
None	67.7%	72.4%	70.1%	73.0%	75.9%	78.7%	77.4%	80.0%	78.1%	83.3%	82.6%	84.9%	80.9%
Primary	60.6%	64.0%	61.8%	66.4%	65.8%	69.3%	68.7%	70.6%	70.3%	71.5%	73.9%	73.9%	73.8%
Secondary	58.3%	66.9%	63.4%	65.0%	68.6%	66.6%	68.7%	69.0%	65.1%	68.9%	66.5%	69.9%	69.8%
Tertiary	68.2%	60.9%	68.2%	61.4%	70.9%	64.7%	69.8%	59.9%	63.0%	64.3%	64.0%	63.6%	63.6%
Economic Sector													
Agriculture, hunting, forestry, and fishing	61.1%	154.2%	69.7%	74.4%	84.8%	79.9%	85.2%	77.9%	85.4%	88.0%	105.9%	80.5%	84.2%
Mining and quarrying	147.1%	148.7%	99.5%	172.5%	169.4%	78.8%	108.5%	96.4%	49.4%	93.4%	108.8%	117.9%	105.5%
Manufacturing industry	62.9%	66.8%	66.8%	68.0%	69.1%	64.4%	62.9%	61.5%	62.6%	66.1%	64.0%	63.1%	66.9%
Electricity, gas, and water	85.8%	114.1%	93.4%	87.4%	96.4%	96.2%	102.1%	88.4%	88.6%	91.3%	106.0%	91.3%	95.1%
Construction	182.6%	162.0%	192.6%	112.1%	119.6%	210.0%	204.3%	147.7%	185.4%	170.8%	250.3%	459.1%	183.8%
Trade, restaurants, and hotels	70.5%	77.1%	75.2%	70.7%	76.9%	76.0%	77.3%	79.2%	79.0%	78.2%	78.8%	80.3%	77.9%
Transport and storage	123.5%	108.7%	105.0%	114.3%	112.8%	124.6%	112.2%	110.7%	100.6%	105.6%	99.1%	100.0%	93.8%
Financial establishments, insurance, and real estate	71.4%	66.8%	73.3%	73.0%	72.7%	67.6%	88.1%	86.7%	89.7%	83.7%	86.1%	78.8%	92.1%
Social and community services	55.1%	58.4%	57.5%	59.6%	61.7%	62.5%	56.5%	55.3%	57.2%	58.5%	59.1%	60.4%	57.7%
Occupation													
Professional and technician	48.8%	52.8%	54.3%	53.3%	58.5%	60.0%	72.6%	65.0%	71.5%	72.6%	73.7%	71.8%	70.3%
Director or senior official	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	75.1%	85.9%	68.7%	76.4%	79.4%	86.2%	81.9%
Administrative and intermediate level	56.6%	67.2%	57.9%	59.9%	66.0%	61.7%	84.4%	85.0%	86.2%	85.3%	83.0%	83.5%	85.2%
Merchants and salespersons	68.5%	71.1%	72.3%	69.7%	71.5%	69.8%	80.2%	76.9%	82.0%	79.1%	81.1%	80.9%	77.1%
In services	68.6%	69.6%	74.4%	75.1%	73.3%	77.9%	78.1%	77.9%	77.3%	83.3%	78.3%	77.3%	78.7%
Agricultural workers	72.0%	83.0%	74.9%	80.8%	81.2%	87.0%	85.6%	79.7%	85.9%	89.0%	106.4%	81.1%	87.4%
Non-agricultural laborers, machinery operators, and transport services	67.7%	65.2%	66.3%	72.4%	70.8%	70.0%	70.7%	72.4%	71.1%	71.5%	73.8%	71.9%	70.8%
Armed Forces	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	123.1%	113.8%	120.6%	128.3%	157.1%	133.4%
Others	81.2%	79.7%	77.2%	84.1%	79.5%	81.6%	109.5%	71.2%	200.8%	74.9%	128.5%	125.8%	55.4%
Formality													
Informal	76.6%	87.7%	80.5%	82.4%	83.0%	85.0%	82.8%	83.0%	83.1%	89.0%	85.3%	84.3%	82.3%
Formal	73.2%	79.1%	77.9%	78.4%	83.5%	80.9%	82.8%	80.7%	80.6%	82.4%	83.3%	84.5%	83.3%
Area													
Rural	80.0%	85.0%	81.4%	94.4%	94.5%	99.7%	93.1%	88.4%	92.8%	94.7%	101.4%	94.0%	91.9%
Urban	69.4%	76.7%	74.6%	75.6%	79.8%	78.7%	79.7%	78.8%	77.7%	80.9%	79.9%	80.8%	79.7%
Self-Employed													
Not self-employed	69.0%	78.8%	75.7%	77.1%	81.2%	79.2%	80.3%	80.2%	79.0%	81.5%	81.3%	81.9%	80.8%
Self-employed	87.3%	91.0%	92.2%	91.9%	95.2%	97.9%	96.3%	87.6%	88.5%	95.5%	92.6%	92.5%	90.4%
Regions													
Rondônia	86.2%	77.6%	69.2%	73.0%	79.6%	73.2%	81.9%	91.7%	76.3%	85.6%	71.3%	85.2%	88.4%
Acre	102.3%	81.2%	92.2%	96.7%	89.7%	78.8%	105.6%	92.3%	82.1%	85.5%	122.4%	102.2%	115.0%
Amazonas	80.3%	87.4%	77.0%	84.5%	85.5%	74.3%	88.0%	87.6%	93.2%	78.4%	99.9%	96.2%	89.5%
Roraima	82.1%	102.1%	86.8%	89.3%	106.8%	101.2%	98.0%	82.4%	119.9%	94.6%	74.4%	140.0%	108.7%
Pará	75.6%	80.1%	80.8%	82.7%	80.1%	82.0%	83.1%	84.0%	84.7%	87.4%	86.8%	92.9%	90.2%
Amapá	104.8%	130.5%	93.0%	105.7%	102.4%	66.3%	87.5%	88.6%	85.0%	85.6%	87.2%	90.3%	92.9%
Tocantins	109.9%	85.0%	80.5%	86.5%	77.7%	73.8%	85.5%	91.7%	98.0%	93.2%	72.4%	73.1%	98.3%
Maranhão	68.4%	78.0%	72.1%	96.6%	95.6%	86.0%	78.5%	94.4%	91.9%	106.2%	99.2%	83.2%	80.7%
Piauí	97.5%	83.0%	91.4%	101.0%	106.7%	97.8%	103.0%	87.3%	115.9%	95.7%	92.9%	86.8%	90.5%
Ceará	74.2%	86.0%	83.6%	87.1%	90.3%	90.2%	91.6%	90.7%	94.5%	85.1%	93.6%	90.2%	85.5%
Rio Grande do Norte	79.5%	87.9%	68.8%	90.7%	83.0%	85.6%	90.2%	94.7%	94.0%	102.6%	116.0%	117.7%	90.5%
Paraíba	105.9%	81.5%	88.1%	81.2%	78.5%	111.2%	111.9%	105.5%	101.0%	107.0%	107.9%	106.5%	93.7%
Pernambuco	73.1%	82.4%	92.6%	83.8%	84.9%	91.5%	111.6%	97.7%	90.4%	98.5%	91.4%	95.6%	94.8%
Alagoas	79.1%	94.7%	108.3%	86.8%	107.7%	105.9%	111.8%	86.5%	112.7%	79.1%	116.7%	80.9%	93.0%
Sergipe	79.6%	73.3%	77.1%	96.1%	91.1%	93.9%	85.5%	86.6%	89.2%	88.2%	105.9%	83.2%	97.2%
Bahia	71.0%	89.4%	87.4%	89.2%	89.7%	97.4%	92.4%	88.2%	87.4%	100.1%	93.4%	85.8%	89.4%
Minas Gerais	69.9%	78.6%	78.3%	80.8%	86.0%	84.4%	86.6%	84.4%	78.5%	87.7%	81.2%	81.8%	78.2%
Espírito Santo	60.1%	79.6%	80.9%	85.3%	86.7%	87.8%	74.9%	89.4%	87.5%	79.1%	79.5%	76.2%	80.6%
Rio de Janeiro	78.0%	81.2%	84.8%	78.0%	87.9%	87.7%	81.3%	76.3%	75.4%	86.3%	83.2%	85.2%	87.5%
São Paulo	70.1%	76.2%	72.5%	76.4%	80.8%	76.2%	79.2%	78.7%	76.0%	77.2%	78.5%	79.0%	77.0%
Paraná	74.7%	89.0%	79.4%	78.9%	82.2%	74.9%	75.6%	75.0%	78.4%	84.0%	81.4%	80.8%	82.1%
Santa Catarina	64.6%	73.5%	75.7%	77.6%	78.9%	75.8%	72.9%	78.2%	75.3%	73.8%	63.0%	79.0%	79.2%
Rio Grande do Sul	76.5%	83.9%	82.8%	80.1%	83.4%	88.1%	85.3%	74.6%	79.1%	80.8%	84.2%	83.6%	83.8%
Mato Grosso do Sul	69.1%	77.2%	67.7%	76.2%	77.9%	74.9%	79.4%	79.5%	95.2%	93.4%	80.1%	86.4%	81.4%
Mato Grosso	77.0%	79.3%	74.8%	86.7%	80.8%	84.0%	78.1%	86.9%	82.2%	86.3%	84.1%	68.2%	77.9%
Goiás	71.7%	81.2%	79.2%	78.5%	73.8%	77.8%	80.4%	84.5%	73.0%	81.8%	82.3%	84.7%	76.9%
Distrito Federal	75.0%	97.9%	88.1%	72.1%	84.8%	78.2%	80.0%	85.5%	85.3%	78.7%	85.8%	83.5%	77.2%

Table 2 (Continuation).

	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
General	84.8%	81.8%	83.2%	83.5%	85.0%	89.1%	88.6%	88.5%	90.6%	90.2%	90.0%	91.2%
Age												
15-25	97.1%	95.5%	100.3%	96.1%	97.2%	99.9%	98.8%	98.8%	101.4%	99.9%	100.5%	101.3%
26-35	88.3%	95.7%	87.9%	93.5%	86.0%	90.1%	93.6%	91.3%	96.2%	93.5%	92.1%	93.5%
36-45	81.7%	73.0%	82.5%	79.2%	82.7%	89.4%	89.3%	85.1%	89.2%	91.6%	92.0%	83.8%
46-55	79.6%	79.1%	75.0%	73.1%	81.9%	88.4%	83.8%	85.4%	84.5%	83.1%	83.1%	93.3%
56-65	82.8%	65.9%	74.6%	83.7%	81.1%	73.6%	79.6%	87.4%	83.6%	85.8%	83.9%	89.3%
Level of Education												
None	81.6%	76.3%	84.0%	77.1%	78.8%	85.3%	88.2%	87.5%	89.1%	90.2%	85.8%	91.6%
Primary	75.5%	73.0%	75.3%	75.4%	75.7%	78.8%	81.3%	81.8%	84.1%	84.9%	82.2%	84.6%
Secondary	70.5%	67.9%	67.9%	69.2%	72.7%	77.9%	76.5%	75.2%	75.3%	77.0%	78.9%	77.0%
Tertiary	65.8%	64.3%	65.3%	63.9%	64.2%	64.8%	67.9%	69.3%	72.5%	69.7%	69.4%	72.9%
Economic Sector												
Agriculture, hunting, forestry, and fishing	124.9%	78.4%	91.8%	88.7%	111.8%	95.3%	89.0%	101.9%	89.5%	98.7%	96.1%	86.2%
Mining and quarrying	99.6%	152.6%	97.5%	181.6%	97.6%	95.5%	124.2%	123.3%	140.7%	132.7%	119.0%	108.8%
Manufacturing industry	71.0%	65.9%	71.4%	68.4%	70.8%	68.6%	74.2%	76.9%	75.1%	70.2%	67.3%	72.7%
Electricity, gas, and water	111.5%	79.9%	125.3%	126.1%	88.2%	78.7%	111.4%	79.4%	115.8%	131.4%	98.2%	104.4%
Construction	184.7%	169.9%	152.9%	355.4%	128.9%	227.2%	242.2%	147.3%	159.2%	182.7%	154.0%	151.6%
Trade, restaurants, and hotels	76.0%	77.0%	76.1%	80.1%	83.2%	87.1%	81.3%	85.9%	84.7%	82.4%	80.4%	89.3%
Transport and storage	114.9%	121.9%	112.0%	88.7%	96.0%	84.6%	80.3%	79.0%	79.6%	77.9%	81.0%	85.4%
Financial establishments, insurance, and real estate	84.4%	102.7%	103.0%	93.2%	99.3%	93.3%	70.1%	64.9%	65.7%	71.0%	69.3%	66.9%
Social and community services	57.7%	59.2%	58.5%	56.2%	57.0%	59.4%	65.9%	66.7%	70.5%	70.0%	72.8%	71.4%
Occupation												
Professional and technician	74.8%	71.0%	71.8%	68.5%	68.7%	74.6%	77.4%	76.6%	81.4%	82.4%	79.8%	82.4%
Director or senior official	79.6%	75.5%	81.6%	88.6%	90.7%	78.6%	71.3%	77.0%	72.7%	67.2%	68.8%	83.9%
Administrative and intermediate level	84.6%	82.7%	73.0%	85.3%	81.4%	78.4%	89.5%	88.4%	85.6%	87.1%	83.6%	115.1%
Merchants and salespersons	82.4%	75.8%	74.1%	77.8%	79.6%	82.1%	69.9%	73.7%	76.9%	75.9%	75.0%	73.8%
In services	81.1%	77.9%	80.0%	73.9%	84.0%	83.0%	79.2%	80.0%	83.7%	83.2%	80.4%	104.8%
Agricultural workers	127.2%	80.6%	94.4%	90.3%	119.0%	97.3%	88.2%	98.4%	86.5%	102.8%	94.0%	102.9%
Non-agricultural laborers, machinery operators, and transport services	71.3%	73.6%	69.7%	69.0%	69.2%	69.1%	80.4%	78.3%	83.3%	80.3%	80.1%	96.0%
Armed Forces	112.8%	100.1%	139.6%	79.8%	100.0%	86.5%	118.1%	118.1%	117.0%	113.0%	119.3%	76.3%
Others	n.d.	72.8%	54.3%	31.2%	115.7%	111.2%	116.4%	113.6%	113.6%	118.5%	112.2%	56.4%
Formality												
Informal	87.0%	78.8%	86.2%	81.5%	83.7%	87.8%	94.1%	95.7%	94.8%	97.2%	99.3%	92.2%
Formal	84.1%	81.6%	81.1%	82.3%	83.7%	86.6%	84.9%	84.3%	87.5%	86.3%	85.5%	121.2%
Area												
Rural	92.2%	90.3%	93.6%	93.2%	109.8%	98.7%	103.5%	104.9%	101.3%	102.2%	101.2%	100.5%
Urban	81.5%	78.8%	80.1%	80.2%	81.4%	85.2%	85.0%	85.0%	87.4%	87.0%	86.9%	87.5%
Self-Employed												
Not self-employed	82.4%	79.8%	81.1%	81.8%	84.5%	86.0%	83.7%	84.1%	85.9%	85.3%	85.4%	91.2%
Self-employed	92.4%	86.5%	88.7%	88.7%	84.8%	92.7%	102.0%	100.0%	104.1%	103.3%	101.2%	n.d.
Regions												
Rondônia	75.0%	84.6%	80.3%	89.4%	69.9%	94.7%	93.6%	90.3%	97.5%	83.5%	96.6%	87.0%
Acre	99.2%	118.4%	105.6%	95.9%	105.8%	85.3%	102.3%	107.1%	104.8%	107.6%	94.4%	99.7%
Amazonas	90.7%	93.9%	98.9%	123.4%	89.2%	95.1%	95.4%	89.2%	101.5%	106.0%	110.1%	94.4%
Roraima	97.3%	108.6%	107.2%	94.9%	88.3%	113.5%	101.2%	101.3%	118.0%	90.6%	87.1%	103.7%
Pará	92.9%	96.3%	87.2%	95.2%	97.6%	93.0%	98.7%	102.4%	96.6%	108.8%	103.9%	99.6%
Amapá	89.4%	98.4%	99.1%	103.6%	95.9%	108.6%	107.5%	107.2%	112.2%	103.9%	101.8%	102.5%
Tocantins	95.4%	96.5%	97.1%	103.1%	93.2%	97.2%	94.1%	96.0%	87.5%	109.6%	99.5%	188.1%
Maranhão	80.7%	75.8%	64.7%	94.7%	91.8%	77.4%	105.8%	105.8%	103.4%	105.5%	106.9%	103.2%
Piauí	92.6%	85.3%	97.8%	90.9%	98.7%	91.0%	99.3%	107.6%	101.5%	105.2%	99.6%	107.2%
Ceará	87.7%	79.8%	103.4%	92.9%	91.1%	93.8%	94.8%	87.6%	89.8%	97.4%	99.8%	95.8%
Rio Grande do Norte	92.3%	94.8%	89.6%	88.5%	85.6%	97.0%	94.4%	91.4%	98.4%	94.3%	101.6%	92.3%
Paraíba	99.7%	103.6%	78.5%	91.8%	93.4%	114.9%	101.5%	101.3%	102.2%	110.2%	98.3%	97.5%
Pernambuco	89.4%	83.6%	89.2%	92.1%	86.1%	94.8%	101.5%	98.0%	97.0%	99.5%	103.5%	102.6%
Alagoas	102.9%	105.3%	93.0%	102.5%	114.0%	109.9%	102.2%	105.6%	100.3%	99.4%	91.0%	103.6%
Sergipe	93.9%	89.8%	89.6%	168.6%	83.1%	97.4%	89.7%	94.5%	85.3%	100.4%	104.4%	89.5%
Bahia	92.8%	81.0%	89.3%	89.5%	88.4%	91.8%	94.3%	83.8%	106.7%	98.4%	87.0%	99.4%
Minas Gerais	82.8%	82.2%	78.8%	84.4%	80.0%	87.3%	88.7%	90.7%	89.6%	86.8%	87.2%	94.0%
Espírito Santo	81.7%	64.8%	71.2%	84.2%	90.3%	97.2%	94.0%	85.5%	87.8%	85.3%	92.1%	84.9%
Rio de Janeiro	81.1%	77.7%	77.8%	77.3%	81.9%	86.0%	91.2%	87.4%	89.5%	88.3%	90.8%	98.4%
São Paulo	84.5%	78.9%	81.9%	73.2%	81.7%	85.1%	80.1%	82.2%	86.0%	84.9%	83.8%	82.5%
Paraná	80.7%	85.5%	76.7%	76.7%	85.7%	80.5%	84.8%	88.8%	86.9%	85.8%	85.8%	85.3%
Santa Catarina	72.8%	76.6%	75.8%	69.0%	79.1%	79.1%	84.4%	79.4%	84.1%	81.6%	84.8%	79.7%
Rio Grande do Sul	79.0%	79.7%	86.8%	82.2%	81.9%	81.1%	86.3%	89.3%	87.6%	89.0%	86.1%	82.3%
Mato Grosso do Sul	79.7%	91.4%	73.9%	82.3%	81.7%	83.9%	88.3%	84.3%	93.9%	85.6%	91.2%	85.7%
Mato Grosso	77.8%	81.1%	76.0%	82.8%	86.9%	76.8%	82.1%	88.4%	82.1%	86.1%	93.4%	84.4%
Goiás	78.1%	61.2%	84.3%	86.9%	79.7%	86.5%	86.8%	87.1%	87.7%	86.1%	86.5%	93.1%
Distrito Federal	81.0%	86.4%	85.6%	90.5%	89.8%	83.4%	82.5%	80.5%	81.6%	84.6%	88.7%	84.0%

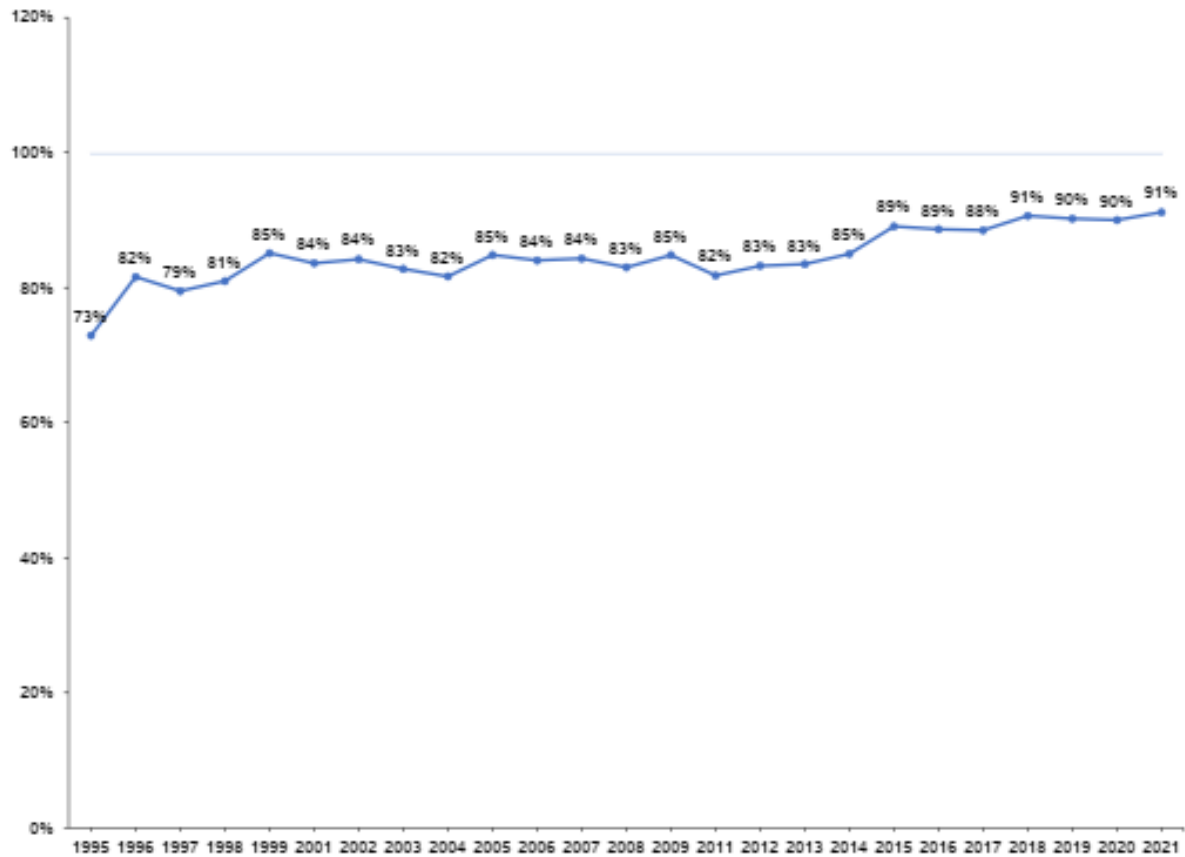
Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB).

n.d. Not Available. Used when available data is not sufficient to calculate the percentage.

Only individuals with occupation and income and frequency weightings were used.

In Figure 2, you can see the evolution of hourly earnings for women versus that of men. There is an earnings gap observed in all the years analyzed, along with a gradual reduction over time. In 2021, which is the last year of the study, the average earnings of women represented 91% of that of men.

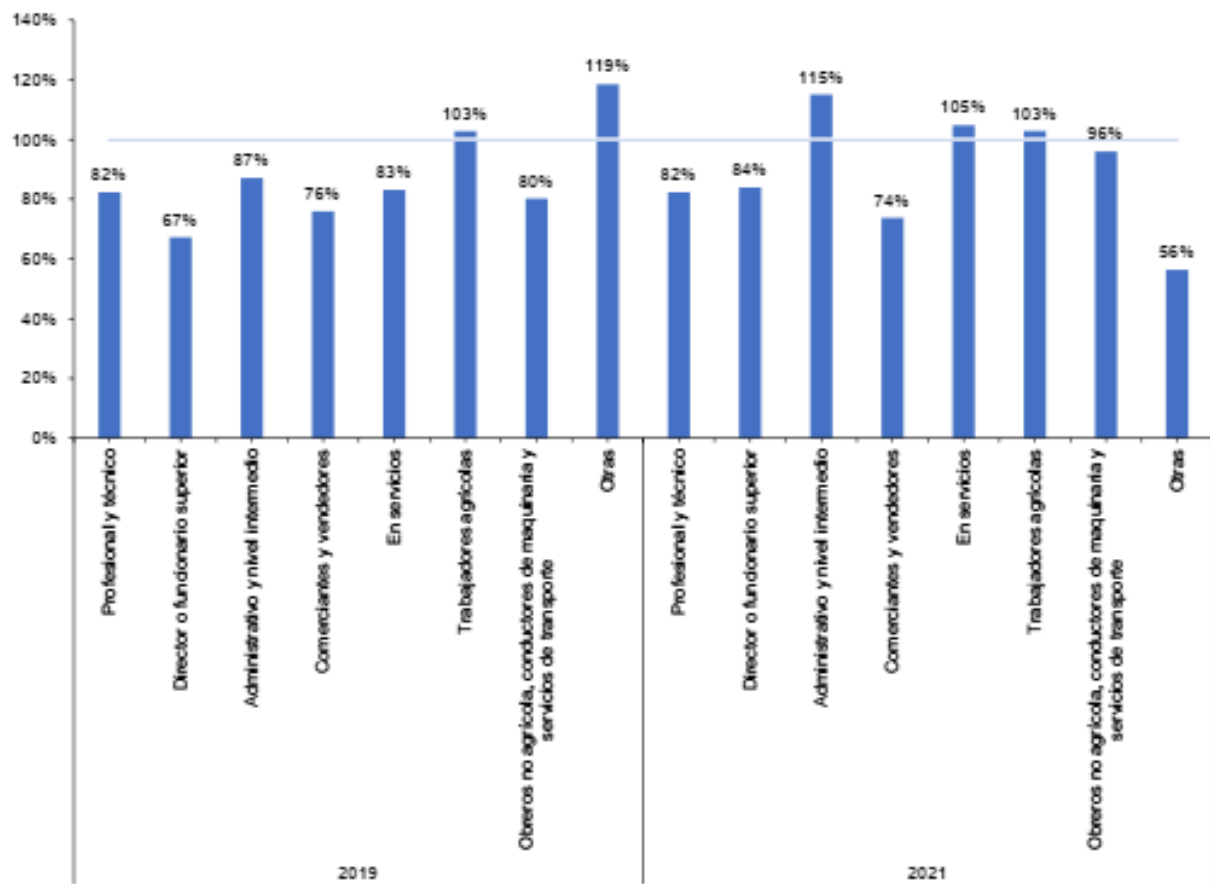
Figure 2. Hourly labor earnings of women versus that of men*



Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.
Only individuals with occupation and income were used

An analysis was conducted by occupation, observing the situation before and after 2020, the year when the Brazilian and global economies were impacted by the emergence of COVID-19. In Figure 3, it can be observed that in 2019, there was a difference in favor of men in almost all occupations, except for agricultural workers and others. Subsequently, in 2021, the pattern persists, with a significant overall hourly earnings gap between professionals and technicians, directors or senior officials, and merchants and salespeople.

Graph 3. Hourly labor earnings of women versus that of men by occupation*



Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.

*Only individuals with occupation and income were used.

3. Methodology

As previously mentioned, two methodologies will be used to address the gender earnings gap: the Blinder-Oaxaca decomposition and the Ñopo methodology.

Blinder-Oaxaca Decomposition

This first strategy for quantifying the evolution of the gender earnings gap allows us to decompose it into two parts. The first part is explained by the different control variables used to capture human capital, such as education, work experience, and occupation. The second part cannot be explained by these variables and could be associated with gender-differentiated regulations, prejudices, biases, or discrimination, as outlined by Becker (1957). This unexplained gap may originate from personal or statistical preferences, meaning that employers use group characteristics to evaluate individual characteristics. An example of this is the assumption that women of childbearing age are more likely to have children than older women, and therefore may interrupt their careers. Under this assumption, employers might pay lower wages to women of childbearing age to compensate for the higher probability of career interruptions, as explained by Hoyos, Ñopo, and Peña (2010).

The Blinder-Oaxaca method uses Mincer-type wage equations (Mincer, 1974), which, as described in Jann (2008), allow for the division of the difference in labor earnings into:

- (i) a part explained by group differences and individual characteristics, such as education and work experience,
- (ii) a second residual component that is unexplained.

Since there are two groups composed of men (H) and women (M), an explained variable (the logarithm of hourly labor earnings from the main activity), and a set of explanatory variables X , such as education and experience, among others, we seek to explain the average earnings difference between the two groups using the explanatory variables X .

$$EGap = E(Y_H) - E(Y_M) \quad (1)$$

Where $E(Y_g)$ denotes the expectation of the logarithm of labor earnings, which is the variable of interest, and g can be H if the equation is performed for men, or M if it is done for women. A Mincer-type equation is used to explain income in the form $Y_g = \alpha_g + \sum_{i=1}^k X_{ik} \beta_{gik} + \varepsilon_{gi}$. This expression can be substituted into equation [1]:

$$EGap = E\left(\alpha_H + \sum_{i=1}^k X_{ik} \beta_{Hik} + \varepsilon_{Hi}\right) - E\left(\alpha_M + \sum_{i=1}^k X_{ik} \beta_{Mik} + \varepsilon_{Mi}\right)$$

(2)

$$EGap = \widehat{\alpha}_H + \sum_{i=1}^k \overline{X}_{ik} \widehat{\beta}_{Hik} - \widehat{\alpha}_M - \sum_{i=1}^k \overline{X}_{ik} \widehat{\beta}_{Mik} \quad (3)$$

Rearranging, it is possible to identify the contribution of the explanatory variables to the differences between the groups:

$$EGap = (\widehat{\alpha}_H - \widehat{\alpha}_M) + \sum_{i=1}^k \overline{X}_{ik} (\widehat{\beta}_{Hik} - \widehat{\beta}_{Mik}) + \sum_{i=1}^k (\overline{X}_{Hik} - \overline{X}_{Mik}) \widehat{\beta}_{Hik} \quad (4)$$

where the last component of this equation corresponds to the earnings gap accounted for by the explanatory variables, while the first two components correspond to unexplained differences.

The model was estimated using the following specification:

$$yhora_i = \beta_0 + \sum_{i=1}^3 \beta_i gaedu_i + \beta_4 exp_i + \beta_5 exp_i^2 + \sum_{i=6}^9 \beta_i gedad_i + \beta_{10} casado_i + \beta_{11} men6_i + \beta_{12} cnt_prop_i + \sum_{i=13}^{20} \beta_i rama_i + \sum_{i=21}^{28} \beta_i ocupa_i + \beta_{29} formal_i + \beta_{30} zona_i + \sum_{i=31}^n \beta_i region_i + \epsilon_i \quad (5)$$

Where:

- $yhora_i$ is the logarithm of nominal hourly labor earnings.
- $gaedu_i$ are dummy variables indicating the three highest levels of education attained as shown in table 2, relative to the base category, which is no educational level.
- exp_i are the estimated years of experience, which are calculated as age minus years of education.
- $gedad_i$ are four binary variables indicating age groups from table 2, using the 25-35 years segment as the base category.
- $casado_i$ is a binary variable that takes the value of 1 if the person is married.
- $men6_i$ is a binary variable that takes the value of 1 if there are children under six years of age living in the household.
- cnt_prop_i is a binary variable that takes the value of 1 if the person is self-employed or an independent worker.

- $rama_i$ are binary variables related to the different economic activities in which people are engaged, with agriculture, hunting, forestry, and fishing as the base category.
- $ocupa_i$ are six binary variables related to the different occupations of the surveyed individuals.
- $formal_i$ is a binary variable that takes the value of 1 if the person works in the formal sector.
- $zona_i$ is a binary variable that takes the value of 1 if the person works in the urban area.
- and $region_i$ are binary variables that refer to the different regions of the country.

This decomposition is performed separately for women and men. While this method is widely popularized in the literature, it has some limitations. On the one hand, it assumes a relationship between explanatory characteristics and earnings that may not be true. On the other hand, the model is only informative in the sense that it addresses how the gap is decomposed, which does not imply a causal relationship. Lastly, the method does not restrict its comparison to individuals with comparable characteristics. Ñopo's (2008) model was developed precisely when trying to address the first and last limitations mentioned.

Ñopo Decomposition

The method proposed by Ñopo (2008) is a non-parametric decomposition technique that, like the Blinder-Oaxaca model, aims to analyze earnings differences between men and women across the income distribution, not just the mean.

This Ñopo approach restricts the comparison solely to differences between men and women with comparable characteristics, known as the "common support." This allows for the generation of a synthetic counterfactual of individuals by matching men and women who have identical observable characteristics, without the need to assume any functional form in the relationship between explanatory variables and income. This is done through discrete characteristics, and thus, it does not require matching by propensity score or any other notion of distance between men's and women's characteristics (Ñopo 2008).

This procedure generates three groups:

- (i) Women and men matched in the "common support."
- (ii) Women with observable characteristics for which there are no comparable men, referred to as the "maid effect."

(iii) Men for whom there are no comparable women, referred to as the "CEO effect."

The method allows men and women with identical characteristics to be part of a "common support," facilitating the breakdown of the earnings difference by observed and unobserved characteristics. On the other hand, the calculation of the maid and CEO effects is performed among those individuals who fall outside this "common support."

The "maid effect" refers to those women who, given their characteristics, do not have male counterparts with comparable characteristics. This is traditionally associated with women who have lower-ranking jobs that complement their household duties. On the other hand, the "CEO effect" refers to those men who, given their characteristics, hold top-level positions and do not have female counterparts with comparable characteristics.

In summary, this model decomposes the gender earnings gap into four elements:

- The portion explained by observable characteristics.
- The portion explained by unobservable characteristics.
- The "maid effect," representing women with characteristics for which there are no comparable men.
- The "CEO effect," representing men with characteristics for which there are no comparable women.

$$\delta = \delta_X + \delta_F + \delta_M + \delta_0 \quad (6)$$

Where δ represents the total gender earnings difference; δ_X represents the earnings difference related to observable characteristics; δ_F is the measurement of the maid effect; δ_M is the measurement of the CEO effect; and δ_0 represents the unexplained earnings difference. As mentioned earlier, this last component could be related to issues of bias and discrimination. It is worth noting that the unexplained component of this model follows the same logic as the Blinder-Oaxaca model, allowing for a comparison between both estimates.

The Ñopo model is not without limitations. Like the Blinder-Oaxaca model, it is solely informative about how the gap is decomposed but does not imply a causal relationship. Additionally, because matching is constructed with discrete variables, the probability of finding a person with the same characteristics and endowments, both for men and women, decreases as the number of explanatory variables increases, i.e., it reduces the common support, as noted by Enamorado, Izaguirre, and Ñopo (2009). This problem is known as the "curse of dimensionality," and it's the reason why the Ñopo model should carefully consider the inclusion of new variables.

Another limitation shared by both methodologies is that they can only control for observable characteristics, and in the specific case of this study, only for the

characteristics included in the harmonized household surveys by the IDB. In this sense, the gender earnings gap could also be affected by characteristics that are not observed in the survey, such as attitudinal factors, effort, and preferences for tasks in the labor market or at home, among others, which could be omitted in the analysis and thus introduce bias in the estimators due to the omission of relevant variables. Chioda (2011) provides a relevant example showing that preferences and attitudes between men and women towards work in the labor market may not be identical.

To achieve greater comparability and consistency, this study decided to perform both estimations. This approach will allow both to be compared with other studies using either of the two methodologies, as well as compared with each other since they share a common logic. Both models used hourly earnings as the dependent variable, allowing the calculation of the gender earnings gap. The explanatory variables used in the Ñopo model are:

$$gaedu_i, gedad_i, casado_i, men6_i, cnt_{prop_i}, rama_i, ocupa_i, formal_i, zona_i, region_i.$$

Note that here, the experience variables are not added to keep the common support high, i.e., to avoid falling into the "curse of dimensionality." This is considering that the experience variable is constructed with information related to age and education, which are already part of the explanatory variables in the regression.¹⁰

In the case of Blinder-Oaxaca estimations, robust standard errors and probabilistic weights were used to be consistent with the survey structure, while in the Ñopo decomposition model, frequency weights were used, as that is what the methodology calls for.

It is worth noting that by considering only the observed wages of employed individuals, both models may suffer from selection bias. Since labor force participation is higher among men, it can often be the case that women destined to receive lower wages do not enter the labor market, unlike men, for whom potential wages may have a smaller impact on labor force participation. If this is the case, the models presented in this study would underestimate the gap. However, the increase in female participation could be mitigating this bias, making it more challenging to compare over time.

Please note that this research uses similar control variables as those presented in past studies on the income gap in Latin America and the Caribbean, such as those by Hoyos and Ñopo (2010) and Ñopo (2012).

¹⁰ The calculations not included in the model showed that the aggregation of these variables significantly decreased the common support and increased the standard deviation of the variables but did not alter the overall results.

4. Results

Table 3 presents the results of the Blinder-Oaxaca decomposition estimation. There, you can see that over the 25-year period covered by the calculation, the average hourly earnings gap between genders decreased from 38% to 10%¹¹, as shown in Figure 4.

In all periods, the explanatory variables appear to contribute to closing the gap, showing a negative effect on it, while the unexplained part represents the entirety of the gap.

Table 4 presents the breakdown of the gap according to different aggregated explanatory variables. It can be observed that the gap explained by education is negative and statistically significant, indicating that the educational level of female workers, on average higher than that of men (Table A1), is contributing to reducing the total earnings gap. Likewise, it is observed that experience, as well as the economic activities in which most women work, are also contributing to reducing the total earnings gap.

On the other hand, personal and family characteristics such as age, marital status, and the presence of minors in the household have a positive and statistically significant effect on the earnings gap, meaning that these variables are increasing earnings disparity.

Finally, the region of the country where workers (both men and women) reside, as well as the geographical area, seem to have a negative and statistically significant effect on the gap, suggesting that the fact that female workers are more concentrated in urban areas (Table A1) and in economically more dynamic regions is also contributing to reducing gender earnings inequalities.

¹¹ Calculated as $diferencia/ghora_{mujer}$, the explained gap is calculated as $diferencia_{explicada}/ghora_{mujer}$, while the unexplained gap is calculated as $diferencia_{no\ explicada}/ghora_{mujer}$.

Table 3. Blinder-Oaxaca Decomposition*

	1995	1996	1997	1998	1999	2001	2002	2003	2004	2005	2006	2007	2008
Differential													
Estimation for Men	3,014*** (0,0280)	3,132*** (0,0282)	3,245*** (0,0302)	3,296*** (0,0272)	3,201*** (0,0237)	3,668*** (0,0355)	3,906*** (0,0293)	4,481*** (0,0537)	4,747*** (0,0702)	5,147*** (0,0471)	5,758*** (0,0559)	6,361*** (0,0690)	6,648*** (0,0509)
Estimation for Women	2,189*** (0,0207)	2,555*** (0,0448)	2,579*** (0,0241)	2,669*** (0,0235)	2,724*** (0,0300)	3,067*** (0,0283)	3,289*** (0,0284)	3,708*** (0,0702)	3,876*** (0,0327)	4,366*** (0,0389)	4,838*** (0,0475)	5,362*** (0,0711)	5,517*** (0,0486)
Difference	0,826*** (0,0349)	0,576*** (0,0529)	0,665*** (0,0387)	0,628*** (0,0360)	0,477*** (0,0382)	0,601*** (0,0454)	0,618*** (0,0408)	0,772*** (0,0884)	0,871*** (0,0774)	0,781*** (0,0611)	0,919*** (0,0734)	0,998*** (0,0991)	1,131*** (0,0704)
Decomposition													
Explained	-0,551*** (0,0285)	-0,738*** (0,0373)	-0,887*** (0,0325)	-0,893*** (0,0293)	-0,909*** (0,0286)	-0,999*** (0,0316)	-0,581*** (0,0293)	-0,768*** (0,0517)	-0,662*** (0,0479)	-0,875*** (0,0397)	-0,816*** (0,0486)	-0,900*** (0,0761)	-1,087*** (0,0488)
Unexplained	1,377*** (0,0459)	1,314*** (0,0773)	1,552*** (0,0510)	1,521*** (0,0467)	1,386*** (0,0492)	1,600*** (0,0593)	1,198*** (0,0470)	1,540*** (0,113)	1,533*** (0,0708)	1,656*** (0,0701)	1,735*** (0,0867)	1,898*** (0,148)	2,218*** (0,0896)
Decomposition (as a percentage of hourly labor earnings for women)													
Total	38%	23%	26%	24%	18%	20%	19%	21%	22%	18%	19%	19%	21%
Explained	-25%	-29%	-34%	-33%	-33%	-33%	-18%	-21%	-17%	-20%	-17%	-17%	-20%
Unexplained	63%	51%	60%	57%	51%	52%	36%	42%	40%	38%	36%	35%	40%
Observations	106107	117483	124369	123061	126397	140731	145453	143522	149784	155318	158617	155793	157085

t-Statistic in parentheses

* $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$

	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Differential												
Estimation for Men	7,200*** (0,0905)	10,36*** (0,155)	11,30*** (0,171)	13,30*** (0,275)	13,13*** (0,252)	15,80*** (0,280)	12,64*** (0,110)	13,09*** (0,121)	13,46*** (0,0996)	14,13*** (0,124)	14,70*** (0,138)	15,19*** (0,159)
Estimation for Women	6,106*** (0,104)	8,472*** (0,143)	9,407*** (0,149)	11,11*** (0,256)	11,16*** (0,186)	14,07*** (0,258)	11,21*** (0,0969)	11,59*** (0,0922)	12,20*** (0,121)	12,74*** (0,107)	13,23*** (0,115)	13,85*** (0,180)
Difference	1,094*** (0,138)	1,887*** (0,211)	1,896*** (0,227)	2,197*** (0,376)	1,971*** (0,313)	1,729*** (0,381)	1,437*** (0,147)	1,507*** (0,153)	1,262*** (0,157)	1,384*** (0,164)	1,470*** (0,180)	1,343*** (0,240)
Decomposition												
Explained	-1,089*** (0,0779)	-1,203*** (0,120)	-1,620*** (0,143)	-1,850*** (0,289)	-2,104*** (0,249)	-2,991*** (0,247)	-2,338*** (0,100)	-2,311*** (0,110)	-2,298*** (0,0893)	-2,511*** (0,102)	-2,800*** (0,116)	-3,127*** (0,179)
Unexplained	2,183*** (0,181)	3,090*** (0,258)	3,517*** (0,307)	4,047*** (0,605)	4,075*** (0,517)	4,720*** (0,534)	3,774*** (0,169)	3,818*** (0,179)	3,560*** (0,175)	3,894*** (0,195)	4,271*** (0,206)	4,470*** (0,300)
Decomposition (as a percentage of hourly labor earnings for women)												
Total	18%	22%	20%	20%	18%	12%	13%	13%	10%	11%	11%	10%
Explained	-18%	-14%	-17%	-17%	-19%	-21%	-21%	-20%	-19%	-20%	-21%	-23%
Unexplained	36%	36%	37%	36%	37%	34%	34%	33%	29%	31%	32%	32%
Observations	160762	142413	147928	146003	150894	144439	178952	176950	175399	174656	128751	118205

t-Statistic in parentheses

* $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$

Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB).

Only individuals with occupation and income and probabilistic weightings were used.

**Table 4, Components of Explained Difference in Blinder-Oaxaca*
(Hourly Earnings)**

	1995	1996	1997	1998	1999	2001	2002	2003	2004	2005	2006	2007	2008
Explained Difference	-0,551***	-0,738***	-0,887***	-0,893***	-0,909***	-0,999***	-0,581***	-0,768***	-0,662***	-0,875***	-0,816***	-0,900***	-1,087***
Education	-0,236***	-0,280***	-0,317***	-0,286***	-0,291***	-0,336***	-0,286***	-0,588***	-0,565***	-0,654***	-0,675***	-0,762***	-0,755***
Experience	-0,204***	-0,251***	-0,217***	-0,224***	-0,187***	-0,191***	-0,234***	-0,0469	-0,0908*	-0,0735***	-0,0823***	-0,0814***	-0,0424*
Personal and Family Characteristics	0,284***	0,235***	0,209***	0,198***	0,170***	0,180***	0,188***	0,116***	0,116***	0,126***	0,102***	0,142***	0,109***
Self-Employment	0,0497***	0,0767***	0,0802***	0,0586***	0,0615***	0,0521***	0,0568***	0,0469***	0,0497***	0,0502***	0,0461***	0,0686***	0,0481***
Economic Activity	0,184***	0,330*	0,229***	0,141***	0,115*	0,173***	-0,304***	-0,203*	-0,139	-0,191***	-0,174***	-0,0194	-0,287***
Occupation	-0,623***	-0,792***	-0,818***	-0,723***	-0,717***	-0,797***	0,0858*	0,00375	0,0522	-0,0464	0,0644	-0,180*	-0,0777
Region	0,0140***	-0,0162***	-0,0142***	-0,0219***	-0,0264***	-0,0392***	-0,0337***	-0,0416***	-0,037***	-0,0397***	-0,0340***	-0,0356***	-0,0381***
Formality	0,0081***	0,000231	-0,0051***	-0,008***	-0,0113***	-0,0102***	-0,0126***	-0,0162***	-0,00479*	-0,0096***	-0,00295	0,00243	0,000988
Area	-0,028***	-0,040***	-0,0346***	-0,0281***	-0,0221***	-0,0302***	-0,0414***	-0,0386***	-0,042***	-0,0374***	-0,0595***	-0,0345**	-0,0443***

	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Explained Difference	-1,089***	-1,203***	-1,620***	-1,850***	-2,104***	-2,991***	-2,338***	-2,311***	-2,298***	-2,511***	-2,800***	-3,127***
Education	-0,760***	-1,175***	-1,254***	-1,724***	-1,559***	-2,020***	-1,288***	-1,282***	-1,288***	-1,408***	-1,499***	-2,026***
Experience	-0,141***	-0,119	-0,171*	-0,128	-0,0841	-0,0747	-0,394***	-0,349***	-0,287***	-0,365***	-0,346***	-0,436***
Personal and Family Characteristics	0,183***	0,262***	0,256***	0,363***	0,222***	0,289***	0,227***	0,188***	0,159***	0,215***	0,164***	0,100*
Self-Employment	0,0591***	0,0733**	0,0806***	0,147*	0,168*	0,00757	0,0256	0,0661**	0,0227	0,0398**	0,00820	0
Economic Activity	-0,491***	0,124	0,0137	-0,228	-0,396	-0,468	-0,147	-0,169	-0,377***	-0,383***	-0,209	-1,197***
Occupation	0,175	-0,181	-0,330	0,00205	-0,256	-0,155	-0,561***	-0,537***	-0,328***	-0,389***	-0,681***	0,611***
Region	-0,0518***	-0,0652***	-0,072***	-0,089***	-0,0740***	-0,345***	-0,100***	-0,103***	-0,0952***	-0,104***	-0,0985***	-0,162***
Formality	0,0000185	-0,0237***	-0,031***	-0,07***	-0,0523***	-0,0873***	-0,0450***	-0,0596***	-0,0369***	-0,0405***	-0,0559***	0,0942***
Area	-0,0614***	-0,0982***	-0,113***	-0,123***	-0,0723***	-0,136***	-0,0527***	-0,0612***	-0,0667***	-0,0750***	-0,0862***	-0,114***

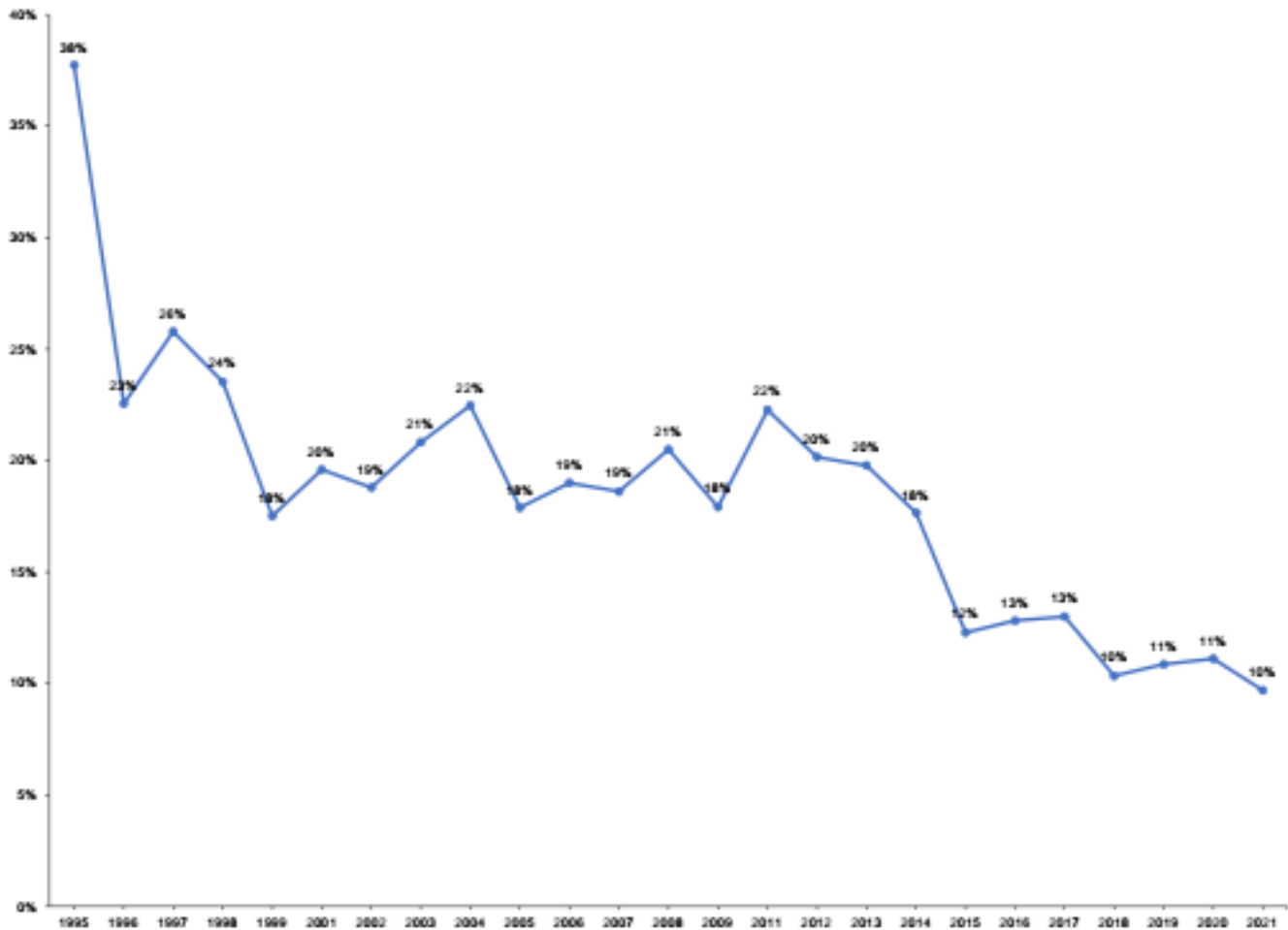
* $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$

Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB).

Only individuals with occupation and income and probabilistic weightings were used.

n.d. Not Available. Used when available data is not sufficient to calculate the percentage.

Graph 4. Total estimated earnings gap through Blinder-Oaxaca decomposition*



Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.
*Only individuals with occupation and income were used.

In Table 5, the results of the Ñopo decomposition are presented. There is a gender earnings gap in all the years analyzed, which decreases from 32% to 8%. Similar to the results of the Blinder-Oaxaca model, the reduction in the gap appears to be the result of explanatory variables, and most of the gap is due to factors not explained by the analyzed variables, as well as what Ñopo (2008) has termed the "Maid Effect." On the other hand, the "CEO Effect" seems to contribute to closing the gap. While there are small differences between the estimates obtained from the Blinder-Oaxaca model and those obtained from the Ñopo approach, they are fundamentally related, and both methodologies follow common practices in the international literature. Any differences are due to methodological aspects.

The common support for different years, both for men and women, is never less than 37%. This value is similar to the models used for countries in Latin America and the Caribbean in the studies by Hoyos and Ñopo (2010) and Ñopo (2012), which employ similar control variables as those presented in this study. Similar to the

Blinder-Oaxaca model, there is a gradual decline in the total earnings gap over time.

**Table 5. Ñopo Decomposition*
(Hourly Earnings)**

	1995	1996	1997	1998	1999	2001	2002	2003	2004	2005	2006	2007	2008
Total	32%	22%	25%	23%	17%	19%	18%	20%	21%	17%	16%	17%	19%
(Unexplained)	44%	41%	49%	53%	46%	46%	35%	36%	37%	34%	31%	31%	37%
(CEO Effect)	1%	-7%	-5%	-8%	-8%	-10%	-8%	-9%	-7%	-8%	-5%	-8%	-9%
(Maid Effect)	6%	6%	5%	5%	6%	5%	2%	2%	2%	2%	0%	1%	2%
(Explained)	-19%	-18%	-24%	-27%	-27%	-22%	-11%	-10%	-12%	-11%	-10%	-8%	-12%
% Men	58%	60%	60%	60%	60%	60%	58%	57%	58%	58%	62%	58%	58%
% Women	71%	79%	81%	81%	80%	82%	86%	84%	84%	85%	86%	83%	83%
Standard Error	2%	2%	2%	1%	2%	1%	1%	2%	2%	1%	1%	1%	1%

	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
(Total)	16%	21%	19%	18%	17%	11%	12%	13%	10%	11%	11%	8%
(Unexplained)	34%	38%	40%	42%	40%	36%	37%	38%	33%	35%	38%	30%
(CEO Effect)	-13%	-9%	-14%	-13%	-15%	-22%	-25%	-24%	-22%	-22%	-26%	-16%
(Maid Effect)	5%	5%	7%	4%	7%	11%	10%	10%	12%	12%	14%	9%
(Explained)	-10%	-13%	-14%	-15%	-15%	-15%	-9%	-13%	-12%	-14%	-15%	-16%
% Men	51%	51%	50%	50%	50%	50%	39%	40%	40%	40%	37%	62%
% Women	74%	73%	72%	73%	72%	72%	61%	61%	61%	62%	57%	75%
Standard Error	2%	2%	2%	3%	2%	3%	1%	1%	1%	1%	1%	2%

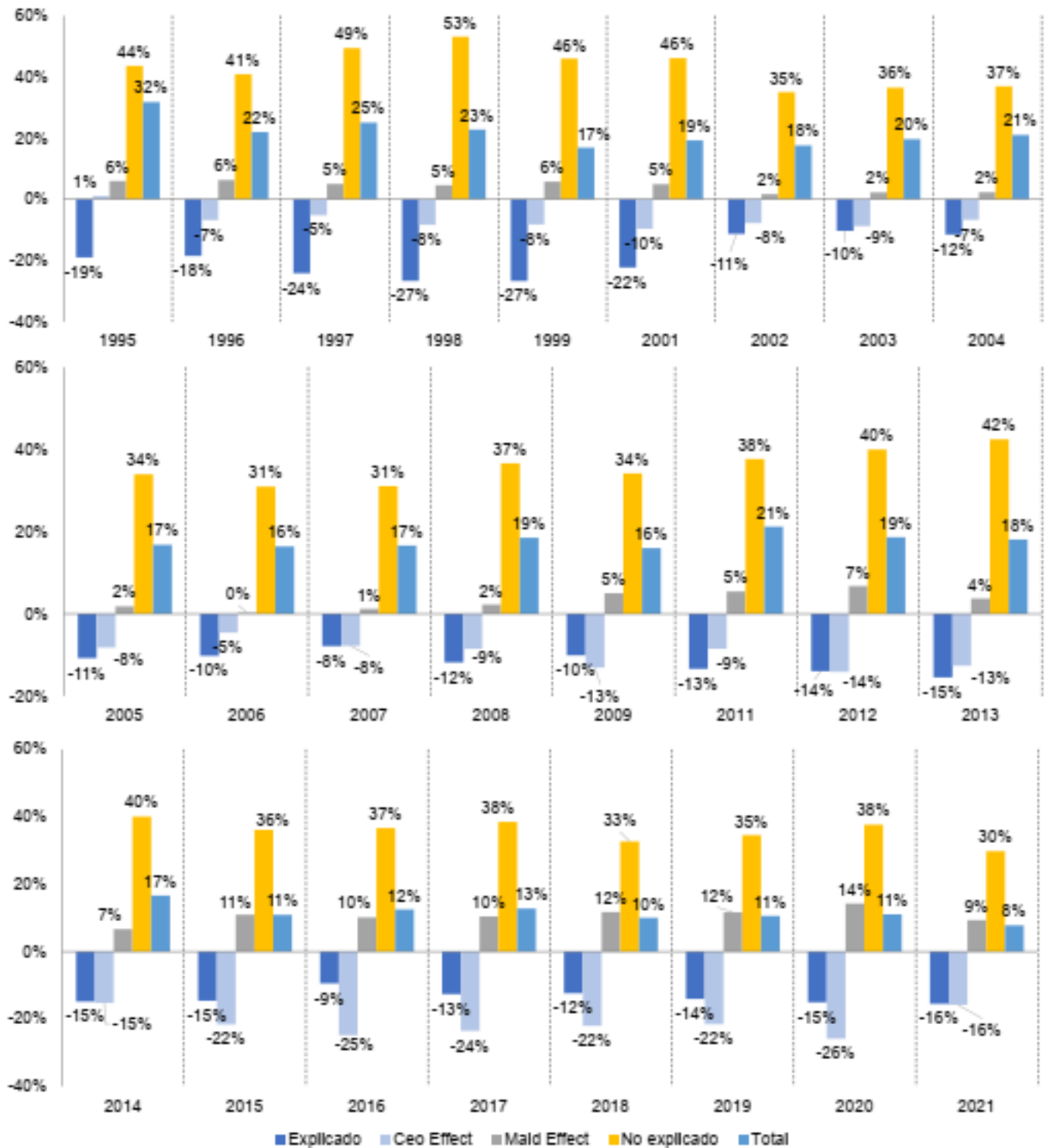
Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB). Only individuals with occupation and income and frequency weightings were used.

Graph 5 also shows the evolution of the gender earnings gap estimated using the Ñopo decomposition. It is evident that the unexplained part (yellow bar) remained high in all years of analysis.

On the other hand, for the year 2021, the component explained by the variables used in the model would also contribute to closing the gap by 16%, while the unexplained component would contribute to a 30% gap. This latter component represents the difference in earnings earned by women and is due to unobservable factors that could range from biases to discrimination mentioned earlier. In summary, without the higher level of education, favorable labor profile, and CEO effect, the gap would be 32% larger in 2021.¹²

¹² The 32% corresponds to the sum of the explained gap (16%) and the effect of the senior executive (16%).

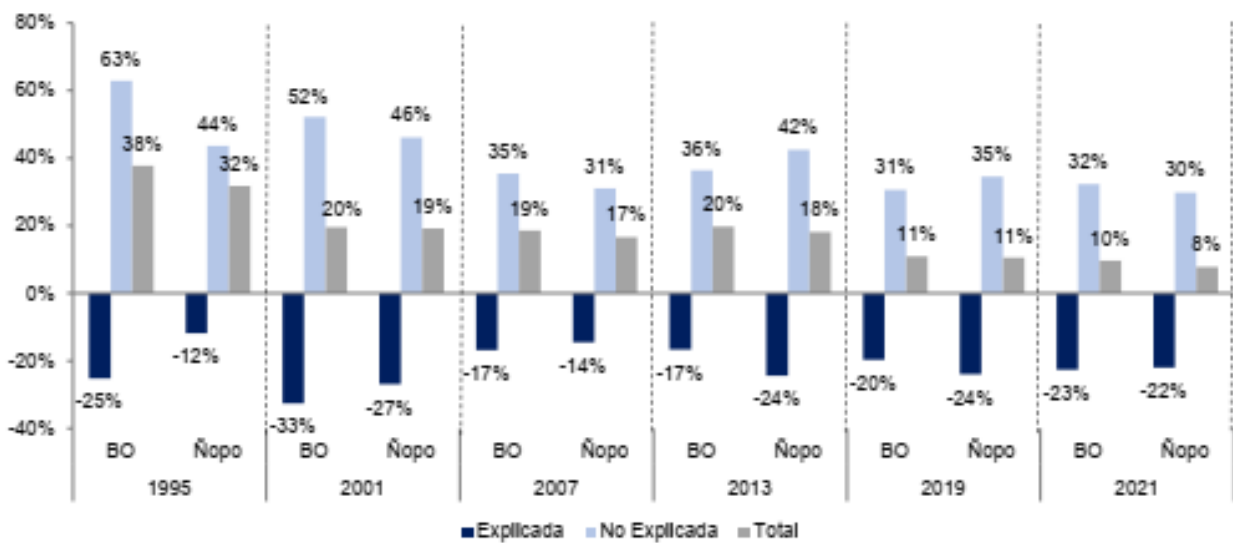
Graph 5. Estimated total earnings gap using the Blinder-Oaxaca and Ñopo decompositions*



Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.
 *Only individuals with occupation and income were used.

In Figure 6, gender earnings gaps calculated using both methodologies for the years 1995, 2001, 2007, 2013, 2019, and 2021 are compared. These years were selected to maintain consistent time intervals and attempt to capture a picture before and after 2020, the year when the COVID-19 crisis emerged. Both the explained and unexplained components are included. It is noteworthy that both methodologies consistently show that for all years, there is an unexplained earnings gap in favor of men, and the explanatory variables mitigate this situation by reducing the gap.

Graph 6. Total earnings gap estimated through the Blinder-Oaxaca (BO) and Ñopo decompositions*



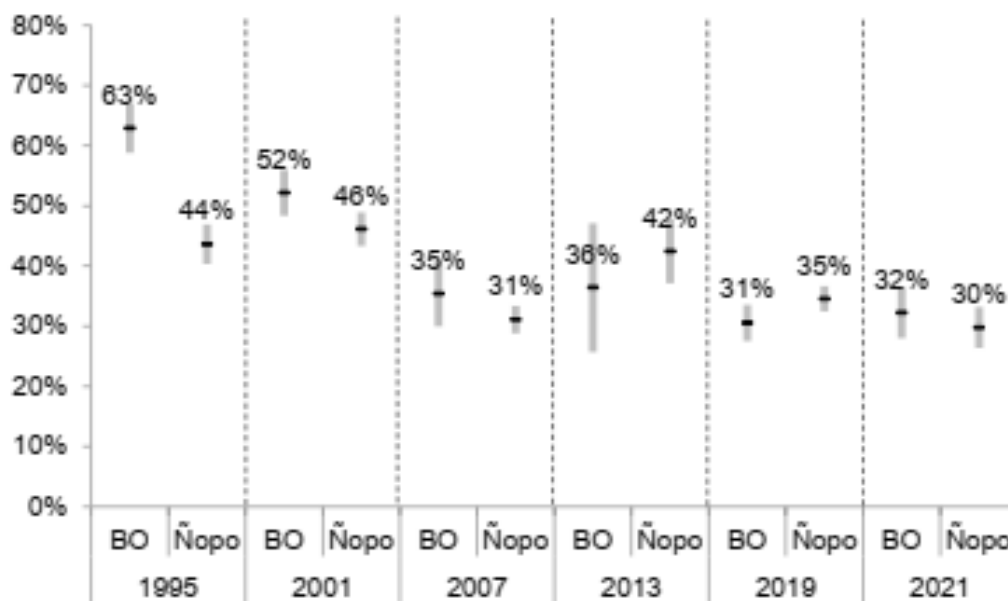
Source: Self-generated based on harmonized household surveys from Brazil by IDB.

*Only individuals with occupation and income were used.

Note: For the Ñopo methodology, the data for the explained component is calculated as the sum of the explained component, the CEO effect, and the maid effect.

On the other hand, in Figure 7, the evolution of the unexplained gender earnings gap is presented for the same periods used in Figure 6. Confidence intervals for 1.96 standard deviations above and below the estimator are included. This allows us to see that both methodologies show a statistically significant unexplained earnings gap in the different years analyzed, being statistically similar for both methodologies at a 95% confidence level, except for the year 1995 when the unexplained gap is statistically greater when using the Blinder-Oaxaca methodology.

Graph 7. Unexplained Earnings Gap Estimated Through Blinder-Oaxaca and Ñopo's Decompositions

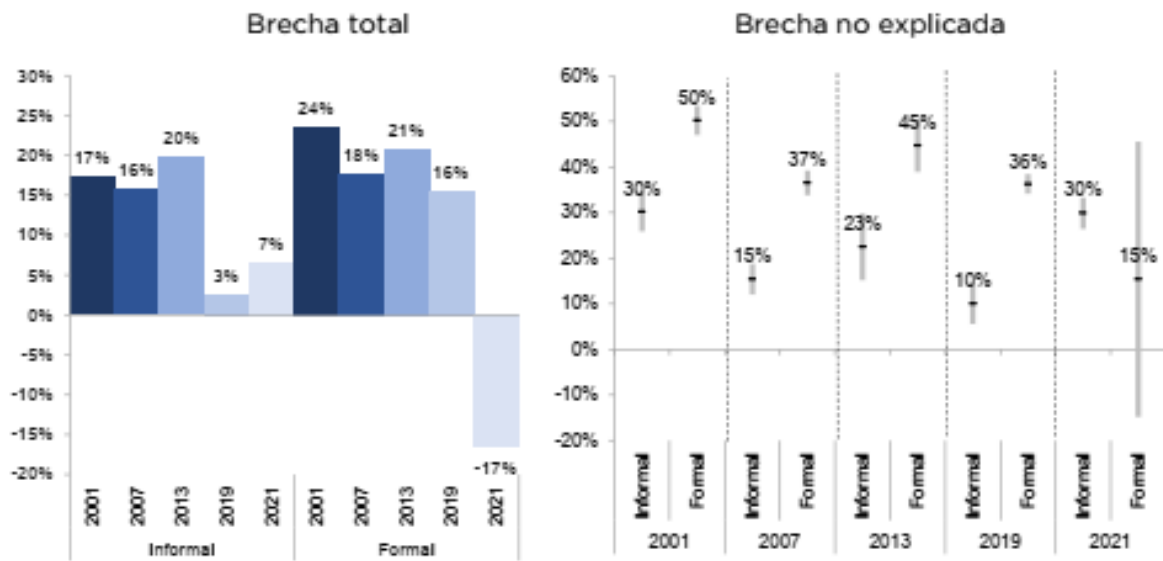


Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.
 Note: The bars represent the unexplained component at the 95% confidence level.

Furthermore, the Ñopo decomposition allows for disaggregating the earnings gap by the categories of different explanatory variables. In Figure 8, the earnings gap, both total and unexplained, is presented by formality status. A clear distinction in the total gap between people working in the formal sector and those in the informal sector is evident. A higher total gap is recorded for people in the informal sector, with it even being negative (favorable to women) in the formal sector in 2021. However, data for this year should be analyzed with caution due to methodological adjustments in sampling and pension system reform in Brazil since the pandemic.

On the other hand, the unexplained gap is statistically significant in both the formal and informal sectors, except for the formal sector in 2021. In Figure 8, confidence intervals are added using 1.96 standard deviations above and below the estimator, i.e., at the 95% confidence level.

Graph 8. Earnings Gap Estimated through the Ñopo Decomposition by Formality



Source: Own elaboration based on household surveys from Brazil harmonized by the IDB.

Note: The bars represent the unexplained component at a 95% confidence level.

The situation of the pay gap in the informal sector may be due to the lack of labor legislation that regulates employment relationships and prevailing business practices in that sector.

5. Conclusions

According to the findings of this study, a gender earnings gap has been observed, which has gradually decreased over time. This gap cannot be fully explained by observable factors in household surveys, suggesting that it may be more related to regulations, biases, or even discrimination rather than individual preferences or personal characteristics.

The earnings gap is more pronounced among individuals working in the informal sector, and although it varies among occupations, it remains statistically significant in most of them. These results indicate that the unexplained gender pay gap has not consistently decreased over the past three decades, limiting income opportunities for women.

The main variables that contribute to reducing the gender earnings gap in Brazil are education, work experience, and the economic activities in which women are more frequently employed. On the other hand, personal and family characteristics such as age, marital status, and the presence of children in the household generate a pay gap in favor of men. Additionally, the region and the area where women work also help reduce the earnings gap due to the high proportion of women in economically dynamic regions of the country.

These conclusions largely align with the existing literature on gender earnings gaps in Brazil. The results in this study are consistent with other research, and the presence of biases and social norms is suggested, as observed in previous studies.

This document contributes to diagnosing the evolution of the gender earnings gap in Brazil between 1995 and 2021. These conclusions are valuable for supporting evidence-based public policy formulation. There is potential for future analyses to delve deeper into the earnings gap for specific demographic groups and consider the impact of the pandemic on the earnings gap in Brazil.

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Table A1. Distribution of Characteristics of the Income-Earning Employed Population by Year and Gender, Men (m) and Women (w)

	1995		1996		1997		1998		1999		2001		2002		2003		2004		2005		2006		2007		2008	
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
Years of Education	5.8	7.1	6.0	7.4	6.1	7.5	6.3	7.7	6.4	7.8	6.6	8.1	6.8	8.3	7.2	8.8	7.4	8.9	7.6	9.1	8.0	9.3	8.4	9.9	8.6	10.1
None	62%	49%	63%	49%	63%	48%	60%	46%	60%	45%	56%	42%	55%	40%	42%	30%	40%	28%	38%	26%	28%	19%	27%	18%	25%	16%
Primary	16%	16%	16%	17%	16%	17%	16%	17%	17%	18%	17%	17%	17%	17%	27%	25%	27%	25%	27%	24%	58%	58%	36%	31%	36%	30%
Secondary	21%	33%	20%	33%	21%	34%	23%	36%	23%	37%	26%	39%	27%	41%	24%	34%	26%	35%	28%	37%	6%	9%	29%	37%	30%	38%
Tertiary	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	7%	12%	7%	12%	7%	12%	8%	14%	8%	15%	9%	16%
Years of Experience	23.1	20.7	23.0	20.5	23.1	20.6	23.1	20.7	23.2	20.8	23.0	20.8	23.0	20.8	22.6	20.6	22.6	20.4	22.4	20.4	21.9	20.2	21.7	19.8	21.6	20.0
15-25	27%	28%	26%	28%	26%	27%	25%	26%	25%	26%	25%	26%	25%	25%	25%	24%	24%	24%	24%	24%	24%	23%	23%	23%	23%	22%
26-35	29%	30%	28%	29%	29%	29%	28%	29%	28%	29%	27%	29%	27%	29%	28%	28%	27%	28%	27%	28%	28%	27%	29%	29%	27%	28%
36-45	23%	25%	24%	25%	24%	26%	24%	26%	24%	26%	25%	26%	25%	26%	24%	26%	24%	26%	24%	26%	25%	26%	24%	26%	24%	26%
46-55	14%	13%	15%	13%	15%	13%	15%	13%	15%	14%	15%	15%	16%	15%	16%	16%	17%	16%	17%	16%	17%	17%	17%	18%	18%	
56-65	7%	4%	7%	5%	7%	5%	7%	5%	7%	5%	7%	5%	8%	5%	8%	5%	8%	5%	8%	5%	8%	6%	8%	6%	8%	6%
Married	68%	51%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
Children under 6 years old in the household	32%	28%	32%	27%	31%	27%	31%	26%	30%	25%	29%	25%	27%	24%	26%	23%	26%	23%	25%	22%	24%	21%	23%	22%	23%	21%
Agriculture, hunting, forestry, and fishing	21%	5%	20%	4%	20%	4%	19%	4%	20%	4%	18%	3%	17%	3%	17%	3%	17%	3%	16%	3%	16%	3%	16%	3%	15%	3%
Mining and quarrying	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%
Manufacturing industry	17%	10%	17%	10%	16%	10%	16%	10%	16%	10%	16%	10%	16%	10%	16%	14%	16%	14%	17%	14%	17%	14%	17%	14%	17%	14%
Electricity, gas, and water	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%
Construction	11%	0%	11%	0%	12%	0%	13%	1%	12%	1%	12%	0%	13%	0%	12%	0%	12%	0%	12%	0%	12%	0%	12%	0%	14%	1%
Trade, restaurants, and hotels	17%	19%	18%	19%	18%	19%	17%	19%	17%	19%	18%	20%	23%	21%	23%	22%	23%	22%	24%	22%	23%	22%	23%	22%	22%	22%
Transport and storage	7%	1%	6%	1%	7%	1%	7%	1%	7%	1%	7%	1%	8%	1%	8%	1%	8%	2%	8%	2%	8%	2%	8%	2%	8%	2%
Financial establishments, insurance, and real estate	2%	2%	2%	2%	2%	2%	2%	2%	1%	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Social and community services	24%	63%	25%	63%	25%	63%	26%	62%	26%	62%	27%	62%	19%	57%	20%	57%	20%	57%	20%	56%	20%	56%	20%	56%	20%	56%
Rondônia	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Acre	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Amazonas	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%	2%	1%	2%	1%	1%
Roraima	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pará	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	3%	2%	4%	3%	4%	3%	4%	3%
Amapá	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tocantins	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Maranhão	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	2%
Piauí	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	2%	1%	1%	2%	1%	2%	2%	1%	1%	1%	2%	1%	2%	1%	1%
Ceará	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Rio Grande do Norte	2%	1%	2%	2%	1%	2%	2%	1%	2%	2%	2%	1%	1%	2%	1%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%
Paraíba	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Pernambuco	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	3%	4%
Alagoas	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Sergipe	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Bahia	7%	7%	7%	6%	7%	6%	7%	6%	7%	7%	7%	6%	7%	6%	7%	6%	7%	6%	7%	6%	7%	6%	7%	6%	7%	6%
Minas Gerais	11%	11%	11%	11%	12%	11%	11%	11%	12%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
Espírito Santo	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Rio de Janeiro	9%	10%	9%	10%	9%	10%	9%	10%	9%	10%	8%	9%	9%	9%	8%	9%	8%	9%	8%	9%	8%	9%	8%	9%	8%	9%
São Paulo	24%	25%	24%	25%	24%	25%	24%	25%	23%	25%	23%	25%	23%	25%	23%	25%	23%	25%	23%	25%	23%	25%	23%	26%	23%	25%
Paraná	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Santa Catarina	4%	3%	4%	3%	4%	3%	3%	3%	4%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Rio Grande do Sul	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	6%	6%	7%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Mato Grosso do Sul	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Mato Grosso	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	2%	2%	1%	2%	1%	2%	1%	2%	2%
Goiás	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	4%	3%	3%	3%
Distrito Federal	1%	2%	1%	1%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%
Urban	80%	89%	81%	89%	80%	89%	80%	89%	80%	89%	84%	92%	84%	92%	84%	92%	85%	92%	85%	92%	83%	92%	84%	92%	84%	92%
Formal	53%	53%	53%	53%	52%	54%	52%	55%	51%	54%	52%	55%	52%	55%	53%	56%	54%	55%	55%	57%	55%	57%	58%	58%	59%	60%
Self-employed	28%	21%	28%	19%	28%	19%	28%	19%	29%	19%	27%	19%	27%	19%	27%	19%	26%	18%	26%	19%	26%	18%	25%	18%	24%	17%

Table A1 (Continued)

	2009		2011		2012		2013		2014		2015		2016		2017		2018		2019		2020		2021		
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W	
Years of Education	8.8	10.2	9.0	10.6	9.2	10.7	9.3	10.9	9.5	11.0	9.6	11.1	9.7	11.3	9.8	11.4	10.1	11.6	10.2	11.7	10.6	12.2	10.7	12.2	
None	24%	16%	22%	14%	20%	12%	19%	11%	19%	11%	18%	11%	19%	11%	17%	10%	16%	9%	16%	9%	13%	7%	13%	7%	
Primaria	35%	29%	34%	27%	34%	27%	34%	26%	34%	26%	33%	25%	30%	22%	31%	23%	30%	22%	29%	21%	27%	18%	27%	19%	
Secondary	32%	39%	33%	41%	35%	42%	35%	42%	36%	42%	37%	43%	36%	41%	36%	41%	38%	41%	38%	42%	41%	43%	40%	42%	
Tertiary	10%	17%	10%	18%	11%	19%	11%	20%	12%	21%	13%	22%	16%	26%	16%	27%	28%	17%	28%	17%	28%	19%	32%	20%	32%
Years of Experience	21.7	20.0	21.9	19.8	21.8	20.0	20.1	22.1	20.4	22.5	21.0	22.9	21.0	22.7	21.0	22.0	20.3	22.8	21.0	21.9	20.3	21.9	20.3	20.3	
15-25	22%	21%	21%	21%	21%	20%	20%	20%	20%	19%	18%	17%	17%	16%	18%	16%	18%	17%	17%	16%	16%	15%	16%	16%	
26-35	27%	29%	28%	29%	27%	29%	27%	28%	27%	28%	26%	27%	27%	28%	26%	27%	28%	28%	25%	26%	28%	28%	27%	27%	
36-45	24%	26%	24%	25%	24%	25%	24%	26%	24%	25%	25%	26%	25%	27%	25%	27%	25%	27%	26%	28%	27%	28%	26%	28%	
46-55	18%	18%	19%	18%	19%	19%	19%	19%	19%	19%	20%	21%	20%	21%	20%	20%	19%	20%	20%	21%	19%	20%	19%	20%	
56-65	9%	6%	9%	7%	9%	7%	10%	8%	10%	8%	11%	9%	11%	9%	11%	9%	10%	8%	12%	10%	10%	9%	11%	9%	
Married	51%	45%	65%	55%	64%	56%	65%	56%	64%	56%	65%	57%	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	
Children under 6 years old in the household	22%	21%	22%	21%	22%	20%	21%	20%	21%	20%	21%	19%	23%	21%	23%	21%	24%	23%	22%	21%	24%	23%	24%	23%	
Agriculture, hunting, forestry, and fishing	15%	3%	14%	3%	13%	3%	13%	3%	12%	3%	13%	3%	12%	3%	12%	3%	12%	3%	12%	3%	12%	3%	12%	3%	
Mining and quarrying	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	
Manufacturing industry	16%	14%	15%	12%	15%	12%	15%	12%	14%	12%	14%	11%	13%	10%	14%	10%	14%	10%	14%	9%	14%	9%	14%	10%	
Electricity, gas, and water	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Construction	14%	0%	15%	0%	16%	1%	17%	1%	17%	1%	16%	1%	14%	1%	14%	1%	13%	1%	13%	1%	13%	1%	13%	1%	
Trade, restaurants, and hotels	23%	23%	23%	25%	23%	25%	22%	25%	23%	25%	23%	25%	20%	19%	20%	19%	20%	19%	19%	19%	20%	19%	19%	19%	
Transport and storage	8%	2%	9%	2%	9%	2%	9%	2%	9%	2%	9%	2%	12%	8%	13%	9%	13%	9%	13%	9%	13%	8%	12%	8%	
Financial establishments, insurance, and real estate	2%	2%	2%	3%	2%	2%	2%	3%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	3%	
Social and community services	21%	56%	21%	55%	21%	55%	21%	55%	21%	55%	21%	56%	25%	58%	26%	57%	26%	57%	27%	57%	27%	57%	27%	57%	
Rondonia	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Acre	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Amazonas	2%	2%	2%	1%	2%	1%	2%	2%	2%	2%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	2%	
Roraima	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pará	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	4%	3%	
Amapá	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Tocantins	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Maranhão	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Piauí	2%	1%	2%	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Ceará	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	
Rio Grande do Norte	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%	
Paraíba	2%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	1%	2%	1%	2%	1%	
Pernambuco	4%	3%	4%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	3%	4%	3%	
Alagoas	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Sergipe	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Bahia	7%	6%	7%	6%	7%	6%	7%	7%	7%	7%	7%	7%	6%	7%	6%	6%	6%	6%	6%	6%	6%	6%	6%	5%	
Minas Gerais	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	
Espírito Santo	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Rio de Janeiro	8%	9%	8%	9%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	
São Paulo	23%	24%	23%	25%	23%	25%	23%	25%	22%	24%	22%	25%	23%	25%	23%	25%	23%	26%	24%	25%	24%	26%	23%	26%	
Paraná	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
Santa Catarina	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	
Rio Grande do Sul	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	
Mato Grosso do Sul	1%	1%	1%	1%	2%	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Mato Grosso	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	
Goiás	3%	3%	4%	4%	4%	3%	4%	3%	4%	3%	4%	4%	4%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	
Distrito Federal	1%	2%	1%	2%	1%	2%	1%	2%	2%	2%	1%	2%	2%	2%	2%	2%	2%	2%	1%	2%	2%	2%	2%	2%	
Urban	84%	92%	86%	92%	86%	92%	86%	92%	86%	92%	85%	92%	86%	92%	87%	93%	87%	93%	87%	93%	87%	93%	87%	93%	
Formal	60%	61%	64%	66%	64%	68%	65%	69%	66%	70%	65%	70%	66%	70%	64%	69%	64%	68%	64%	67%	66%	70%	2%	0%	
Self-employed	24%	17%	25%	16%	24%	16%	24%	16%	25%	17%	27%	18%	28%	19%	29%	20%	28%	20%	29%	21%	29%	21%	n.d.	n.d.	

Source: Own elaboration based on the Brazilian national household surveys harmonized by the Inter-American Development Bank (IDB).
n.d. Not Available. Used when available data is not sufficient to calculate the percentage.

Table A2. Women's Participation by Occupation (%) and Average Hourly Earnings (ARS)

	1995		1996		1997		1998		1999		2000		2001		2002		2004		2005		2006		2007		2008	
	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$
Professional and Technician	64%	4.1	64%	4.8	63%	5.3	62%	5.3	63%	5.7	62%	6.4	52%	6.7	53%	7.1	53%	7.7	53%	8.4	53%	9.2	53%	9.7	53%	10.5
Director or Senior Official	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	0%	0.0	32%	8.4	34%	10.5	34%	9.8	35%	11.0	35%	12.0	36%	14.3	36%	13.8
Administrative and Intermediate Level	41%	3.5	43%	4.5	43%	4.1	44%	4.3	44%	4.5	45%	4.9	58%	3.2	57%	3.6	59%	3.9	59%	4.1	60%	4.3	59%	4.7	61%	4.9
Merchants and Salespersons	41%	1.9	41%	2.2	41%	2.2	42%	2.1	43%	2.2	46%	2.4	48%	2.3	48%	2.5	49%	2.8	49%	3.1	50%	3.4	51%	4.0	52%	3.8
In Services	87%	1.0	87%	1.2	87%	1.2	87%	1.3	88%	1.3	87%	1.5	66%	1.7	67%	2.0	67%	2.1	66%	2.4	66%	2.6	66%	3.1	66%	3.0
Agricultural Workers	12%	0.6	11%	0.8	11%	0.8	12%	0.8	12%	0.9	12%	1.0	11%	1.6	11%	1.7	12%	2.0	11%	2.2	12%	3.2	12%	2.6	12%	2.9
Non-Agricultural Laborers, Machinery Operators, and Transport Services	18%	1.4	17%	1.5	17%	1.6	16%	1.7	17%	1.7	17%	1.8	16%	1.9	16%	2.2	16%	2.3	16%	2.5	16%	2.8	16%	3.2	15%	3.2
Others	26%	1.6	27%	1.9	26%	2.0	27%	2.1	27%	1.9	27%	2.4	4%	7.1	45%	6.1	43%	7.1	50%	5.0	46%	2.8	29%	7.6	28%	8.6
Total	37%	2.1	37%	2.5	37%	2.6	37%	2.7	38%	2.7	39%	3.1	39%	3.3	40%	3.7	40%	3.9	40%	4.3	41%	4.8	41%	5.3	41%	5.5

	2009		2010		2011		2012		2013		2014		2016		2017		2018		2019		2020		2021	
	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$	(%)	R\$
Professional and Technician	53%	11.4	55%	15.2	55%	16.7	56%	19.5	55%	19.7	55%	26.4	54%	19.9	55%	20.5	54%	22.0	55%	23.2	54%	22.9	22%	11.7
Director or Senior Official	36%	16.1	37%	19.0	37%	22.5	38%	26.7	38%	26.0	38%	26.8	40%	21.6	41%	24.3	38%	24.5	38%	25.7	37%	28.1	14%	8.1
Administrative and Intermediate Level	61%	5.5	61%	8.4	63%	8.2	63%	9.5	64%	9.0	64%	12.6	62%	9.5	61%	9.7	62%	10.1	63%	10.1	61%	10.4	26%	13.0
Merchants and Salespersons	52%	4.1	52%	5.7	51%	6.4	52%	8.2	52%	7.5	51%	8.8	54%	7.5	55%	7.8	54%	8.4	56%	8.7	54%	9.0	55%	9.2
In Services	67%	3.4	67%	5.0	67%	5.6	66%	6.3	67%	6.7	66%	8.2	71%	6.8	70%	7.1	69%	7.5	70%	7.9	67%	8.0	56%	8.7
Agricultural Workers	12%	4.4	14%	4.6	13%	5.6	12%	6.0	13%	7.8	13%	6.8	14%	5.5	14%	6.5	13%	6.1	14%	7.4	13%	7.2	43%	7.9
Non-Agricultural Laborers, Machinery Operators, and Transport Services	15%	3.5	13%	5.6	13%	5.7	13%	6.5	13%	6.4	13%	7.5	14%	6.9	15%	7.3	15%	7.8	15%	7.8	14%	7.9	36%	20.2
Others	0%	0.0	34%	19.6	35%	6.8	44%	6.8	37%	15.3	41%	22.4	24%	7.1	25%	7.1	19%	7.4	17%	8.0	16%	7.6	80%	16.1
Total	42%	6.1	42%	8.4	42%	9.3	42%	11.0	42%	11.1	42%	14.0	43%	11.2	43%	11.6	43%	12.2	44%	12.7	42%	13.2	41%	13.8

Source: Own elaboration based on the harmonized national household surveys of Brazil by the IDB (Inter-American Development Bank). Probabilistic weightings are used.