GAYS AND LESBIANS IN BRAZIL: DECOMPOSING INEQUALITIES ALONG THE WAGE DISTRIBUTION

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Abstract: The aim of this article is to examine the causes of wage inequalities between gays and lesbians and their heterosexual counterparts and the trajectory along the wage distribution in Brazil. The wage decomposition with correction of selection bias points to the greater wage advantage of gays, and the productive attributes and the market (education and occupations) are the most relevant causes, however the benefit resulting from homoaffective orientation is potentiated for lesbians. At the lower wage levels, the lowest wage inequality between gays and lesbians and their heterosexual counterparts is affirmed, but the lower benefit of homosexuality over wages in Brazil.

Keywords: Wages; Gays and lesbians; Discrimination.

Resumo: O objetivo deste artigo é examinar as causas das desigualdades salariais entre gays e lésbicas e suas contrapartes heterossexuais e sua trajetória ao longo da distribuição salarial no Brasil. A decomposição salarial com correção de viés de seleção aponta a maior vantagem salarial dos gays, sendo os atributos produtivos e do mercado (educação e ocupações) as suas causas mais relevantes, entretanto o benefício decorrente da orientação homoafetiva é potencializado para as lésbicas. Nos níveis salariais inferiores, afirma-se a menor desigualdade salarial entre gays e lésbicas e suas contrapartes heterossexuais, mas menor benefício da homossexualidade sobre os salários no Brasil.

Palavras-chave: Salários; Gays e lésbicas; Discriminação.

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Introduction

In Brazil, high-income asymmetries are recognized and well documented in economic and social sciences literature. Despite recent advances in legislation and the expansion of sexual orientation diversity in working environments, social minorities generally face more perverse dynamics in the labor market (Souza and Gomes, 2018; Combet and Oesch, 2019; Lu, 2019; Lleras and Torres, 2019).

International literature on sexual orientation and its impacts on the labor market is controversial. Some authors point to wage premiums for lesbians and wage penalties for gay men, when compared to their heterosexual peers (Arabsheibani, Marin, and Wadsworth, 2004; World Bank, 2014; Suliano, Irffi, and Barreto, 2022; Waite, Pajovic, and Denier, 2020). In the United Kingdom, Drydakis (2015) shows that both gays and lesbians are negatively affected in job prospects and earnings. In the United States, Douglas and Steinberger (2015) suggest that gay men experience a greater unfavorable impact on their earnings than lesbians; while Badgett et al. (2009) confirm that gay men earn less than heterosexual men, but the effects for lesbians are not as clear. In more recent work, Jepsen and Jepsen (2022) found the persistence of wage penalty for gay men, and mixed evidence when comparing homosexual and heterosexual women.

In Brazil, studies are not consensual either. In the Brazilian Northeastern labor market, Sousa and Bessaria (2018) reported that homosexuals earn more than heterosexuals. Suliano et al. (2016) and Barbosa et al. (2020) found a similar result for the whole country, using Mincerian equations and the Oaxaca-Blinder decomposition. Suliano, Jesus Filho and Irffi (2021) pointed out that lesbians earn more than heterosexual women but found no statistical differences between homosexual and heterosexual men. Conversely, Garcia (2017) suggests that homosexuals are less likely to enter the labor market. Frio et al. (2016) indicated that gay men have greater difficulty accessing the labor market and work fewer hours, compared to lesbians.

The theoretical answers to these wage gaps may lie, firstly, in the human capital theory. It states that the higher the education and work experience, the higher the workers' productivity and its repercussions on earnings and access to the labor market (Mincer, 1958; Schultz, 1961; Becker, 1961, 1975). In contrast, when analyzing productive characteristics, education, and experience in the absence of compensating wages, the persistence of wage gaps and absorption in the labor market can be attributed to economic discrimination (Becker, 1971).

Therefore, this study aims to empirically analyze the effect of sexual orientation on the earnings of homosexual men and women, and the changes along the wage distribution in Brazil. This research uses microdata from the 2010` Brazilian Institute of Geography and Statistics (IBGE) Population Census and applies the Oaxaca-Blinder (1973) wage decomposition and the Koenker and Bassett (1978) quantile decomposition to identify the real causes of wage inequalities arising from sexual orientation in Brazil. In addition to this introduction, this paper is structured in 4 sections. Section 2 gathers previous studies on earnings and homosexuality, section 3 describes the sample and the empirical strategies used, section 4 discusses the results, and finally, the conclusions are presented.

1 Income and homosexuality: previous studies

From an empirical and gender inequality perspective, the wage gap and the potential discrimination against women has been proven by studies in Switzerland (Combet and Oesch, 2019), Canada (Lu, 2019), San Miguel Island (Ponte, 2018), and Colombia (Azores and Lleras and Torres, 2019). In Brazil, discrimination against women has been described by Souza and Gomes (2018) and Maia and Souza (2019).

Regarding sexual orientation and gender identity perspectives, a World Bank study (2014) showed that lesbians earn more than heterosexual women in the United States (20%), Germany (11%), Canada (15%), and England (8%). However, opposite results were found for gay men in the United States (-16%), Germany (-9%), Canada (-12%), and England (-8%). For the United Kingdom, Arabsheibani, Marin and Wadsworth (2004) estimated the Mincerian equations with Labor Force Survey (LFS) data and indicated that gay men suffer from a wage disadvantage compared to heterosexuals, while lesbians have a clear income advantage.

Using income equations and General Social Survey data from 1989 to 1996, Blandford (2003) detected that gay and bisexual men earned 30-32% less than their counterparts, while lesbian and bisexual women earned a 17-23% wage premium compared to heterosexual women in the United States. Suliano, Irffi, and Barreto (2022) conducted a systematic literature review between 1995 and 2016 covering several countries and, although the impacts of sexual orientation on income were not consensual, the result was quite similar, with a 3% to 32% penalty for gay men, and`a 3% to 30% premium for lesbians.

Conversely, in a Canadian health research from 2008 to 2012, Dilmaghani (2017) found that lesbians earn more than heterosexual women, while homosexual and heterosexual men had no differences in earnings. Considering the 2000 *United States Decennial Census*, Badgett et al. (2009) concluded that gay men earn less than heterosexual men, but the effects for lesbians were not evident. Jepsen and Jepsen (2022), using *American Community Survey* data from 2000 to 2019 on same-sex and opposite-sex couples, found the persistence of wage penalty for gay men and mixed evidence of convergence for lesbians, when compared to heterosexual women.

Drydakis (2015) performed field research with 144 students from 12 universities and 5,549 companies in the United Kingdom. The author showed that homosexual orientation negatively affected the chances of being hired in the first job (-5.1% on average, compared to heterosexuals) and first salary prospects (gays and lesbians received invitations from companies paying 1.9% less). According to the American Community Survey, Martell (2020) found that cohabiting lesbians earn less than married heterosexual women, and the penalty is a result of the low work experience of young lesbians. Using the Canadian Community Health Survey (CCHS) and the Coarsened Exact Matching (CEM), Waite, Pajovic and Denier (2020) showed that married gay men earn significantly less than married heterosexual men. Opposite results were found for single gay men. Lesbians, both married and single, earn more than heterosexual women.

In Brazil, Suliano et al. (2016) stated that homosexual couples earn more than heterosexual couples, but the wage gap is larger for gay male couples than for lesbians couples. In the Greater São Paulo, Casari, Monsueto, and Duarte (2016) also found that being gay has a positive effect on earnings for both sexes and that, the higher the quantile in the wage distribution, the greater these benefits are. Suliano, Jesus Filho, and Irffi (2021) did not find statistical differences between gay and heterosexual men but pointed out that lesbians earn more than heterosexual women.

In the Brazilian Northeastern region, Sousa and Bessaria (2018) indicated that most of the wage gap favoring homosexuals is due to observable characteristics (education, for example), and factors arising from sexual orientation discrimination were not found. Oliveira, Monteiro and Irffi (2019) designed exploratory research from a sample composed of siblings with distinct sexual orientation in Fortaleza, Brazil. The authors found favorable educational differences for homosexuals, but such differences did not reflect in wage differences.

Recently, Barbosa et al. (2020), using Continuous National Household Sample Survey (PNADC) data from 2012 to 2018 and the cohabitation criterion, showed that, on average, homosexuals have higher levels of education and higher wages in Brazil. Nevertheless, using the Oaxaca-Blinder decomposition, they identified that education and other productive attributes only partially explain homosexuals'˜higher earnings. Moreover, the number of observations of this study is considered low and the identification of homosexuality by the cohabitation criterion may represent a very specific group of people, who might have already overcome several barriers, leading to more favorable results. Therefore, these results require caution.

International studies tend to report wage disadvantage for gays in comparison to heterosexual men, and contradictory results for lesbians, with a tendency toward beneficial effects in comparison to heterosexual women. In Brazilian studies, the results are also contradictory, but they generally state higher wages for gay men and inconclusive data for lesbians. In view of these differences, the present study aims to pursue the investigation on the causes of wage inequality among gays and lesbians in Brazil, its endowment and economic discrimination components, and the observation of the wage distribution considering these factors, using the broadest database available in the country.

2 Empirical strategy

Database and operationalization of the variables

We used microdata from the 2010 IBGE Population Census due to its relevant number of observations, which allows explicit identification of sexual orientation in Brazil.[4] By the cohabitation criterion, homosexuals were characterized as people who live with a same-sex partner and heterosexuals as individuals who live with an opposite-sex partner.

White and non-white (black and multiracial) workers were analyzed. Indigenous and yellow workers were excluded from the sample due to their low statistical representativeness. Education was characterized as: i) low education: up to elementary school completion; ii) medium education: complete secondary education; iii) high education: complete post-secondary education, graduate professional, master, or doctoral degree.

4 The PNADC incorporated a question about same-sex spouses in its questionnaire and has more up-to-date data, however, the number of observations is low, which justifies the use of the population census.

The sectors were grouped into agriculture, manufacturing, trade, and services; while the occupations were grouped into directors and managers, science professionals and intellectuals (SPI), technicians and professionals with secondary education, and operatives (other occupations), which represent clerical support workers, service and sales workers, elementary occupations, among others. Not well-defined occupations were excluded from the sample. Formal workers are employees with signed contracts, self-employed workers and employers who contribute to social security. Informal workers are`non-registered employees, self-employed workers and employers who do not contribute to social security.

Method for wage decomposition with sample bias correction

In this research, wage determinants are estimated with sample bias correction and counterfactual wage decomposition is performed along the wage distribution. For Oaxaca (1973) and Blinder (1973), by decomposing the wage differentials it is possible to verify the portion arising from the worker's productive characteristics, particularly their endowments, and the unexplained portion, characterized by wage discrimination. Mincer's (1958) wage equation has been extended as follows:

$$Ln(W_{hiq})^g = \beta_{0iq}{}^g + \beta_i CH_{iq}{}^g + Set'_{iq}{}^g\beta + Ocup_{iq}{}^g\beta + \beta_i Formal_{iq}{}^g + \beta_i Public_{iq}{}^g + \beta_i Urban_{iq}{}^g + Cinat'_{iq}{}^g\beta + Reg'_{iq}{}^g\beta + \lambda_{iq}{}^g(\alpha_u) + \mu_{iq}{}^g$$

$$Ln(W_{hiq})^g = \beta_{0iq}{}^g + \beta_i CH_{iq}{}^g + Set'_{iq}{}^g\beta + Ocup_{iq}{}^g\beta + \beta_i Formal_{iq}{}^g + \beta_i Public_{iq}{}^g + \beta_i Urban_{iq}{}^g + Cinat'_{iq}{}^g\beta + Reg'_{iq}{}^g\beta + \lambda_{iq}{}^g(\alpha_u) + \mu_{iq}{}^g$$

(1)

$$\forall i \in N : i \geq 1$$

Where $Ln(W_{hiq})^g Ln(W_{hiq})^g$ is the Neperian logarithm of the workers' hourly wage; $CH_i\, CH_i$ is the vector of components of human capital, level of education (low education - base, medium education, undergraduate, and graduate) and age; $Set_i\, Set_i$ is the vector of dummies variables for the sectors (agriculture - base, trade, services, and manufacturing); $Ocup_i$ $Ocup_i$ is composed of the occupation dummies (managers, SPI, technicians, and operatives - base); $Formal\, Formal$ is the formality in the labor market; *Public* is the dummy variable for public occupation, being 1 for the public sector and 0 for the private sector. $Urban_i Urban_i$ is the region of

residence; $Cinat_i Cinat_i$ is the sex (male, female), skin color (white, non-white) and sexual orientation (homosexuals, heterosexuals) characteristics; and $Reg_i Reg_i$ is the Brazilian macro-regions (North, South, Northeast - base, Southeast, and Central West). The subscript "*q*" can take the quantiles 25, 50 and 75 of the wage distribution, and the superscript "*g*" are the groups studied.

Heckman's (1979) sample selection bias was performed. In general, the sample selection bias (λ) may be due to the selectivity of the individuals' information or the sampling design of the survey when using 2010 Population Census data. A wage equation is estimated for each group (A and B) to be analyzed:

$$LnW_A = \beta_A X'_A + u_A LnW_A = \beta_A X'_A + u_A \quad (2)$$

$$LnW_B = \beta_B X'_B + u_B LnW_B = \beta_B X'_B + u_B \quad (3)$$

Where W is the yield, X is the set of explanatory variables and is the random error term. Decomposing we obtain:

$$\mathrm{Ln}\overline{W}_A - \mathrm{Ln}\overline{W}_B = \underbrace{(\overline{X}_A - \overline{X}_B)\hat{\beta}_B}_{Endowment\ Effec} + \underbrace{\overline{X}_A(\hat{\beta}_A - \hat{\beta}_B)}_{Discrimination\ Effect}$$

$$\mathrm{Ln}\overline{W}_A - \mathrm{Ln}\overline{W}_B = \underbrace{(\overline{X}_A - \overline{X}_B)\hat{\beta}_B}_{Endowment\ Effec} + \underbrace{\overline{X}_A(\hat{\beta}_A - \hat{\beta}_B)}_{Discrimination\ Effect}$$

(4)

On the right side of the equation (4) it is possible to detect the effects arising from specific endowments of the group, and to obtain the effect of wage discrimination.

While the traditional Oaxaca-Blinder (1973) decomposition provides the average wage estimation, the quantile regression technique allows estimation along the wage distribution. In this study, the quantile regression method of Koeker and Basset (1978) is used. Considering *Wi* as the dependent variable, and *x* as the vector of all explanatory variables, we have the following relationship:

$$W_{I=} X_I, B(\theta) + E_I \quad COM \quad F_\varepsilon^{-1}(X) = 0$$

$$W_{I=} X_I, B(\theta) + E_I \quad COM \quad F_\varepsilon^{-1}(X) = 0$$

(5)

Where $F_{\varepsilon}^{-1}(X)F_{\varepsilon}^{-1}(X)$ represents the $\theta_{th}\theta_{th}$ conditional ε_i ε_i quantile at x. The quantile is obtained by the following equation:

$$\min\beta(\theta)\left\{\sum_{(i:W_i\geq x_i\beta(\theta))}^{N}\theta|W_i = x_i\beta(\theta)| + \sum_{(i:W_i\leq x_i\beta(\theta))}^{N}(1-\theta)|W_i = x_i\beta(\theta)|\right\}$$

$$\min\beta(\theta)\left\{\sum_{(i:W_i\geq x_i\beta(\theta))}^{N}\theta|W_i = x_i\beta(\theta)| + \sum_{(i:W_i\leq x_i\beta(\theta))}^{N}(1-\theta)|W_i = x_i\beta(\theta)|\right\}$$

(6)

$\beta(\theta)\beta(\theta)$ is chosen to minimize the weighted sum of the absolute value of the residuals. And, once we estimate the quantile regression for the studied group, the counterfactual decomposition can be performed.

$$q(\theta,x^A,\beta^A) - q(\theta,x^B,\beta^B) = \underbrace{[q(\theta,x^A,\beta^A) - q(\theta,x^A,\beta^B)]}_{Endowment\ Effect} + \underbrace{[q(\theta,x^A,\beta^B) - q(\theta,x^B,\beta^B)]}_{Discrimination\ Effect}$$

$$q(\theta,x^A,\beta^A) - q(\theta,x^B,\beta^B) = \underbrace{[q(\theta,x^A,\beta^A) - q(\theta,x^A,\beta^B)]}_{Endowment\ Effect} + \underbrace{[q(\theta,x^A,\beta^B) - q(\theta,x^B,\beta^B)]}_{Discrimination\ Effect}$$

(7)

The terms located on the right side of the equation, in brackets, represent the difference in income caused by productive characteristics (endowment effect) and by the different valuations performed by the market (discrimination effect).

The sample

The sample consisted of people occupied in the main job aged 14 years or older, 7,485 of them being homosexuals and about 5 million heterosexuals. Table 1 shows that heterosexual women have higher educational levels than heterosexual men, while homosexuals are more educated than heterosexuals in general, with gay men having higher instructional levels than lesbians. Gay and heterosexual men are older and there are proportionally fewer non-white gay men and more non-white lesbians than whites.

Table 1 - Socioeconomic, educational, and personal data of the occupied population by sexual orientation in Brazil

Variables	Heterosexual			Homosexual		
	Man	Woman	General	Man	Woman	General
Low Education (%)	58.5	47.39	54.2	21.78	27.53	24.88
Medium Education (%)	29.39	33.65	31.04	39	43.38	41.37
Undergraduate (%)	11.35	18.11	13.97	33.84	26.41	29.83
Graduate (%)	0.76	0.86	0.8	5.38	2.68	3.93
Agriculture (%)	21.77	14.69	18.23	5.03	3.03	4.03
Manufacturing (%)	28.6	11.75	20.18	13.95	12.91	13.43
Trade (%)	17.19	17.02	17.105	14.66	18.54	16.6
Services (%)	32.44	56.54	44.49	66.36	65.52	65.94
Manager (%)	5.43	4.18	4.81	8.69	5.71	7.2
SPI (%)	6.88	15.03	10.96	24.14	18.45	21.3
Technician (%)	7.11	5.74	6.43	11.4	11.43	11.42
Operative (%)	80.59	75.05	77.82	55.76	64.41	60.09
White (%)	49.51	53.56	48.93	57.3	54.95	56.06
Non-white (%)	50.49	46.44	51.07	42.7	45.05	43.94
Urban (%)	85.51	83.61	82.86	96.12	97.67	96.94
Informal Workers (%)	38.1	40.2	38.91	28.57	37.24	33.16
Formal Workers (%)	61.9	59.8	61.09	71.43	62.76	66.84
Age	42	39	41	35	34	35
Hours Worked Weekly	46.76	40.11	43.43	44.13	43.63	43.88
Hourly Wage (R$)	10.35	8.28	9.56	17.23	11.56	14.23

Source: Own elaboration, data from the 2010 Population Census (IBGE).

Activities developed by gay men, lesbians, and heterosexual women are mostly in services and trade, and by heterosexual men in services and manufacturing. Homosexuals are more formalized compared to heterosexuals, and gay men are more formalized than lesbians. Gay men work fewer hours per week, while lesbians work more than their heterosexual counterparts. In terms of income, homosexuals earn more than heterosexuals: a heterosexual man earns 60% of the gay man's salary and a heterosexual woman, 72% of the lesbian's, indicating that wage gap by sexual orientation is greater for gay men.

3 Results and discussion

Gay and lesbian income in Brazil

The wage determination equations are used to estimate the monetary returns to the individual's productive and non-productive characteristics for the groups of interest, incorporating the correction for sample selection bias. After controlling for selected variables, the results show that lesbians earn 6.08% more than their sexual counterparts and their wage is higher at the highest quantiles (Table 2). On average, these data are not significant for gay men, but are in the same direction, that is, gay men have higher wage returns than heterosexual men. Wage returns for gay men are similar along the quantiles.

Overall, the results are consistent with studies on the subject. White workers have higher wages than non-white workers, with higher percentages for men. This association can be supported by Becker's (1971) discrimination theory. Higher levels of education lead to higher wages, in line with the human capital theory (Schultz, 1961 and Becker, 1975), in which education levels rise at the highest quantiles. The age squared sign indicates a u-shaped inverted

curve return for men and women, that is, wages rise, reach a maximum, and decline (Table 2).

Table 2 - Wage Determinants for women and men in Brazil

	Man				Woman			
Variable	**OLS**	**Q 25**	**Q 50**	**Q 75**	**OLS**	**Q 25**	**Q 50**	**Q 75**
Medium Education	0.2264***	0.136***	0.312***	0.383***	0.149***	0.166***	0.289***	0.279***
	(-0.0021)	(0.00115)	(0.00185)	(0.0033)	(-0.0044)	(0.00297)	(0.00392)	(0.00823)
Undergraduate	0.7633***	0.164***	0.603***	1.373***	0.6146***	0.251***	0.732***	1.654***
	(-0.004)	(0.00175)	(0.00287)	(0.00623)	(-0.0091)	(0.00574)	(0.00757)	(0.0171
Graduate	1.2574***	0.127***	0.596***	1.695***	1.1894***	0.21***	0.759***	2.382***
	(-0.0096)	(0.0026)	(0.00425)	(0.00988)	(-0.0143)	(0.00713)	(0.00942)	(0.0233)
Age^2	0.0002***	-9.04E-05***	-0.0004***	-0.0003***	0.0003***	-2.88E-05*	-0.00036**	-0.00031**
	(0.00001)	(4.98E-06)	(7.40E-06)	(1.40E-05)	(0.00001)	(1.25E-05)	(1.65E-05)	(3.69E-05)
Age	-0.0006***	0.0114***	0.0455***	0.045***	-0.0144***	0.00604***	0.0352***	0.0397***
	(-0.0008)	(0.000391)	(0.000573)	(0.00106)	(-0.0015)	(0.000931)	(0.00122)	(0.00271)
Manufacturing	0.2444***	0.23***	0.174***	0.0298***	0.178***	0.239***	0.0676***	-0.166***
	(-0.002)	(0.00132)	(0.00176)	(0.00276)	(-0.0038)	(0.0028)	(0.00321)	(0.00575)
Trade Sector	0.2119***	0.178***	0.151***	0.0703***	0.2662***	0.245***	0.156***	0.0263***
	(-0.0023)	(0.0015)	(0.00204)	(0.00339)	(-0.0039)	(0.00277)	(0.0032)	(0.00608)
Services Sector	0.2439***	0.221***	0.174***	0.0498***	0.2333***	0.256***	0.127***	-0.0887***
	(-0.0021)	(0.00137)	(0.00188)	(0.00307)	(-0.0034)	(0.00248)	(0.00272)	(0.0049)
Manager Occupation	0.5592***	0.106***	0.367***	0.871***	0.5287***	0.134***	0.409***	1.087***
	(-0.0033)	(0.00128)	(0.00228)	(0.00532)	(-0.0048)	(0.0022)	(0.00335)	(0.00953)
SPI Occupation	0.539***	0.0927***	0.327***	0.831***	0.4266***	0.135***	0.375***	0.955***
	(-0.0036)	(0.00126)	(0.00235)	(0.00564)	(-0.0032)	(0.00157)	(0.00252)	(0.00691)
Technician Occupation	0.3486***	0.11***	0.319***	0.631***	0.3097***	0.165***	0.285***	0.54***
	(-0.0026)	(0.00116)	(0.00228)	(0.00501)	(-0.0035)	(0.00183)	(0.0033)	(0.00808)
Formal Workers	0.1958***	0.166***	0.109***	0.0316***	0.1746***	0.209***	0.0565***	-0.0518***
	(-0.0013)	(0.000889)	(0.0013)	(0.00217)	(-0.0017)	(0.00135)	(0.00172)	(0.00338)
Public	0.1106***	0.0251***	0.0505***	0.243***	0.0783***	0.056***	0.116***	0.252***
	(-0.0035)	(0.00128)	(0.00259)	(0.00575)	(-0.0029)	(0.00119)	(0.00222)	(0.00633)
Urban	0.1358***	0.107***	0.152***	0.141***	0.1073***	0.0617***	0.116***	0.215***
	(-0.0024)	(0.00148)	(0.00195)	(0.00319)	(-0.0044)	(0.00302)	(0.00378)	(0.00795)
North	0.2212***	0.149***	0.194***	0.176***	0.1736***	0.111***	0.158***	0.228***
	(-0.0028)	(0.00183)	(0.00247)	(0.00406)	(-0.0041)	(0.00288)	(0.00351)	(0.0074)
Southeast	0.2584***	0.231***	0.301***	0.19***	0.1554***	0.173***	0.196***	0.189***
	(-0.0024)	(0.00134)	(0.00194)	(0.00345)	(-0.0045)	(0.00287)	(0.00372)	(0.00841)
South	0.2286***	0.256***	0.346***	0.169***	0.1186***	0.215***	0.267***	0.171***
	(-0.0031)	(0.00161)	(0.00243)	(0.00451)	(-0.0066)	(0.00407)	(0.00536)	(0.0123)
Central West	0.3205***	0.276***	0.339***	0.219***	0.1547***	0.169***	0.206***	0.195***
	(-0.0032)	(0.00178)	(0.00276)	(0.00485)	(-0.0055)	(0.0036)	(0.00474)	(0.0105)
Federal District (DF)	0.4965***	0.245***	0.378***	0.468***	0.506***	0.236***	0.346***	0.696***
	(-0.0076)	(0.0039)	(0.00669)	(0.0122)	(-0.0098)	(0.00582)	(0.0083)	(0,0186)
White	0.1327***	0.0511***	0.133***	0.194***	0.1057***	0.0523***	0.105***	0.182***
	(-0.0013)	(0.000842)	(0.00131)	(0.00223)	(-0.0018)	(0.00134)	(0.00177)	(0.00363)
Homosexual	0.0253***	0.0412***	0.0492***	0.0554***	0.0608***	0.0301***	0.124***	0.207***
	(-0.0185)	(0.00847)	(0.0152)	(0.0308)	(-0.0169)	(0.0101)	(0.0144)	(0.0324)
λ	-0.441***	-0.038***	0.25***	0.138***	-0.3827***	-0.0486***	0.224***	0.228***
	(-0.0135)	(0.00631)	(0.00912)	(0.0174)	(-0.0198)	(0.0125)	(0.0161)	(0.0357)
Constant	0.7918***	0.156***	-0.427***	0.109***	1.1457***	0.112***	-0.421***	-0.245***
`	(-0.0204)	(0.0102)	(0.0148)	(0.0274)	(-0.0489)	(0.031)	(0.0404)	(0.0898)

Source: Own elaboration, 2010 Population Census data (IBGE)

Notes: $e^{\beta-1}e^{\beta-1}$values with compound effects; *significance at 1%; **significance at 5%; ***significance at 10%

When compared to agricultural workers, the highest paying sector for men is manufacturing, and for women is trade. Managers and SPI are the highest paying occupations for men and women, when compared to operatives. Formal jobs pay more than informal jobs with advantages for men. In Brazil, when compared to the Northeast region, the Federal District (DF) and the Central West region present the highest earnings for men, and, for women, the DF and the North region. In all cases, λ was representative, which shows the existence of unobservable factors that interfere with wages.

Wage gaps between gays and lesbians in Brazil

Initially, the Oaxaca-Blinder decomposition (Table 3) is the basis for further comparisons. It shows that homosexuals earn more than heterosexuals, and that, from the total wage gap, 74.31% of this difference is explained by their endowments and 29.64% by positive wage discrimination. The data reveal the wage impacts, that is, for equivalence between the wages of homosexuals and heterosexuals, it would be necessary to reduce the wages of homosexuals by 28.17%. If the productive characteristics of homosexuals were the same as those of heterosexuals, their wages would decrease by 21.80%. That is, homosexuals have better market attributes than heterosexuals, especially education (17.51%). In the absence of homosexual orientation, the wage of these individuals would drop by 8.15%.

Table 3 - Wage Decomposition for Homosexuals and Heterosexuals

Oaxaca-Blinder decomposition									
	Coefficient		**Part. %**				**Impact on wages %**		
Heterosexuals	1.605*		-				R$ 4.98		
Homosexuals	1.936*		-				R$ 6.93		
Wage Gap	-0.331*		100				-28.17		
Explained	-0.246*		74.31				-21.80		
Unexplained	-0.085*		25.69				-8.15		
Quantile Decompositions									
`	**Quantile 25**			**Quantile 50**			**Quantile 75**		
	Coef.	**Part. %**	**Impact %**	**Coef.**	**Part. %**	**Impact %**	**Coef.**	**Part. %**	**Impact %**
Heterosexuals	1.074*	---	R$ 2.92	1.480*	---	R$4.39	2.107*	---	R$8.22
Homosexuals	1.227*	---	R$3.39	1.772*	---	R$5.88	2.552*	---	R$12.83
Wage Gap	-0.142*	100	-13.77	-0.293*	100	-25.38	-0.445*	100	-35.92
Explained	-0.067*	47.03	-6.73	0.174*	-59.43	19.01	-0.338*	76.01	-28.69
Unexplained	-0.075*	52.97	-7.55	-0.119*	40.58	-11.20	-0.106*	23.98	-10.12

Source: Own elaboration, 2010 Population Census data (IBGE)

Notes: $e^{\beta-1}e^{\beta-1}$values with compound effects; *significance at 1%; **significance at 5%; ***significance at 10%

The results are similar to those found by Souza and Bessaria (2018), based on the Brazilian Population Census, and those of Barbosa et al. (2020), who used the PNADC, but partially contrast with the findings of Suliano, Jesus Filho, and Irffi (2021) who used the Brazilian National Health Survey. Palmieri Jr and Gibb (2019) point out the importance of studying homosexuals wage inequality and warn about the failure to incorporate qualitative aspects in such a diverse group, permeated by prejudice in labor relations in Brazil. It should also be noted that in a scenario of greater information asymmetry, being associated or identified as homosexual has a negative effect on the chance of being hired, and greater difficulty in accessing the labor market, especially for gay men (Garcia, 2017; Frio et al., 2016).

Moreover, there is less positive discrimination against homosexuals at the lower quantiles than at the higher quantiles. Overall, the wage discrimination results along the income distribution are consistent with those of Casari, Monsueto, and Duarte (2016), for example. However, there is no prior evidence on these findings in the literature on sexual orientation.

Table 4 gathers, in its upper portion, data on the traditional Oaxaca-Blinder decomposition for homosexual and heterosexual women. It expresses that lesbians earn R$1.24 more per hour of work, 60.54% explained by endowments. This is mostly related to education (35.12%) and occupation (12.07%), lower values than those found for homosexuals and heterosexuals in general. Another 39.46% of the wage gap is not explained by observable characteristics, thus showing that even among women, who are the gender disadvantaged group, there is positive discrimination by homosexuality, and in higher magnitude than heterosexuals and homosexuals in general.

Additionally, to match their wages to those of heterosexual women, it would be necessary to reduce lesbians' wages by 21.74%. If the productive characteristics of lesbians were the same as those of heterosexual women, their wages would decrease by 13.79%, showing that lesbians have better market attributes than heterosexuals (especially education, 8.25% and occupation, 25.61%). The sex characteristic makes the impact of homosexuality greater and favorable to lesbians. That is, in the absence of homosexuality, their wage would be reduced by 9.22%.

Table 4 - Wage Decomposition for Lesbians and Heterosexual Women

Oaxaca-Blinder decomposition												
	Coefficient			Part. %			Impact (%)					
Heterosexual Women	1.4998		***	-			R$4.48					
Lesbians	1.7450		***	-			R$5.72					
Wage Gap	-0.2452		***	100			-21.74					
Explained	-0.1484		***	60.54			-13.79					
Unexplained	-0.0968		***	39.46			-9.22					
Quantile Decompositions												
	Quantile 25				**Quantile 50**				**Quantile 75**			
	Coefficient		Part. %	Impact (%)	Coefficient		Part. %	Impact (%)	Coefficient		Part. %	Impact (%)
Heterosexual women	0.9927	***		R$2.69	1.3450	***		R$3.83	1.9801	***		R$7.24
Lesbians	1.1123	***		R$3.04	1.5504	***		R$4.71	2.3097	***		R$10.07
Wage Gap	-0.1195	***	100	-11.27	-0.2054	***	100	-18.57	-0.3295	***	100	-28.08
Explained	-0.0660	***	55.21	-6.39	-0.0758	***	36.90	-7.30	-0.1626	***	49.35	-15.01
Unexplained	-0.0536	***	44.83	-5.51	-0.1296	***	63.11	-12.16	-0.1669	***	50.65	-15.37

Source: Own elaboration, 2010 Population Census data (IBGE).

Notes: $e^{\beta-1}{}_{e^{\beta-1}}$values with compound effects; *significance at 1%; **significance at 5%; ***significance at 10%.

These results are explained, at least in part, by the literature. The positive wage impact for lesbians may occur because they have a more positive attitude toward the job market and tend to prioritize their careers. Ozeren (2014) shows that heterosexual women opt for part-time jobs more frequently, to balance`domestic responsibilities with work activities, while lesbians opt for full-time jobs.

According to Dilmaghani (2017) and Aksoy, Carpenter, and Frank (2017), lesbians spend less time on domestic activities and childcare, and take less time off work for their reproductive role. Arabsheibani, Marin, and Wadsworth (2004) also confirm that there are fewer career interruptions associated with marriage and pregnancy for lesbians. In this case, the problem of labor depreciation in the labor market, one of the causes of wage inequalities predicted by the human capital theory, does not occur or is minimized. At the same time, all these aspects can signal a more advantageous relationship for wage positioning and being hired by the employer and nullify wage discrimination against lesbians.

In the lower quantile of the wage distribution, lesbians earn R$0.35 more per hour than heterosexuals,`55.21% being related to the job and the productive profile, with emphasis on education (53.30%), sector (20.93%) and occupation (19.60%). The wage gap portion coming from discrimination is 44.83%, which reaffirms the wage benefit of homosexuals, even at the bottom of the wage distribution. To match the earnings of heterosexual women, lesbians' wage would need to be reduced by 11.27%. If the productive characteristics of homosexual and heterosexual women were identical, there would be a 6.39% drop in lesbians' earnings. Also, homosexual orientation causes lesbians to receive premiums, otherwise they would have a 5.51% reduction in earnings.

At the top portion of the wage distribution, lesbians earn a R$3.03 differential compared to heterosexuals, 49.35% stemming from the productive and market profiles, especially education (109.88%) and occupation (34.64%), and 50.65% coming from positive wage discrimination. When compared to the bottom part of the distribution, the differences in values are higher, demonstrating that positive wage discrimination is more robust at higher quantiles. For a lesbian in the 75th quantile to match earnings with a heterosexual woman, her wage would need to be 28.08% lower. In this case, it stands out that lesbians have better productive attributes. Thus, if lesbians had the same productive attributes as heterosexual women, their wages would drop by 15.01% at this quantile. In the absence of homosexuality, lesbians would earn 15.37% less, a higher amount than that found in other

levels of the wage distribution. That is, the most beneficial wage impact for lesbians is at the 75th quantile.

For men, the Oaxaca-Blinder decomposition (Table 5) indicates that gay men earn a R$3.39 differential per working hour compared to heterosexual men, a greater wage advantage than that found for women. Productive characteristics explain 91.45% of this inequality (education, 55.33%, and occupation, 3.42%). Possibly, this is because gay men have higher educational levels. In addition, for cultural reasons, heterosexual men are offered jobs at an early age, which makes them less prepared for the job market.

Wage equivalence between homosexual and heterosexual` men would be achieved if gay men's wages were reduced by 38.94%. If the productive characteristics of gays were the same as those of heterosexuals, their wages would be reduced by 36.31%, which shows that gay men have better market attributes than heterosexuals, especially education (23.88%) and occupation (10.91%). Male homosexuality, specifically, positively affects their wages (4.13%).

For males, the large favorable impact of the labor market and productive characteristics, as well as the lower positive wage discrimination stand out, when compared to the results for lesbians. In terms of education, Ozturk (2011) and Gois and Soliva (2011) strengthen the idea that, even though homosexual boys may suffer greater embarrassment and violence in school environments - a likely reason for dropping out, education is a favorable element for them in the labor market. In contrast to international findings for gay men (Badgett et al., 2009; Arabsheibani, Marin and Wadsworth, 2004; Jepsen and Jepsen, 2022), the results of the present study are consistent with some research published so far in Brazil (Suliano et al.,2016; Barbosa et al., 2020).

The quantile wage decomposition for homosexual and heterosexual men shows that, at the lower quantile, gay men earn a premium and 40.88% of this difference is explained by productive and market characteristics. Again, emphasis is placed on education (41.81%), while sector (21.73%), occupation (16.72%), and area of residence (17.13%) also represent important impacts. The unexplained portion of the wage composition is 59.12%, which means that positive discrimination is more present than the endowment effect, in the lower quantiles. The counterfactual analysis is that, for a gay man from lower income levels to earn the same as a straight man his wages should decrease by 27.72%. If gay men had the same productive characteristics as heterosexuals, their wages would decrease by 12.43%, that is, gays have better productive attributes. Moreover, gay men receive higher wages due

Table 5 - Wage Decomposition for gay and heterosexual men

Oaxaca-Blinder decomposition												
	Coefficient			Part. %			Impact (%)					
Heterosexual Men	1.6707		***	-			R$5.31					
Gay Men	2.1639		***	-			R$8.70					
Wage Gap	-0.4932		***	100			-38.94					
Explained	-0.4511		***	91.45			-36.31					
Unexplained	-0.0422		***	8.55			-4.13					
Quantile Decompositions												
`	Quantile 25				Quantile 50				Quantile 75			
	Coefficient		Part. %	Impact (%)	Coefficient		Part. %	Impact (%)	Coefficient		Part. %	**Impact (%)**
Heterosexual Men	1.0973	***		R$2.99	1.5382	***		R$4.65	2.1925	***		R$8.95
Gay Men	1.4220	***		R$4.14	1.9901	***		R$7.31	2.8602	***		R$17.46
Wage Gap	-0.3246	***	100	-27.72	-0.4518	***	100	-36.36	-0.6676	***	100	-48.71
Explained	-0.1327	***	40.88	-12.43	-0.2719	***	60.18	-23.81	-0.5760	***	86.28	-43.79
Unexplained	-0.1919	***	59.12	-17.46	-0.1799	***	39.82	-16.47	-0.9161	***	13.72	-59.99

Source: Own elaboration, 2010 Population Census data (IBGE)

Notes: $e^{\beta-1}e^{\beta-1}$values with compound effects; *significance at 1%; **significance at 5%; ***significance at 10%

to their sexual orientation, since in the absence of homosexuality they would earn 17.46% less.

In the upper quantile of the wage distribution, gay men earn a R$8.51 premium compared to straight men, whose endowments account for 86.28% (education, 74.65% and occupation, 31.62%). The unexplained portion, 13.72%, is the *proxy* for positive discrimination. To match wages with heterosexuals, gay men's earnings would decrease by 48.71%, and if gay men had the same productive characteristics as heterosexual men of their quantile, their earnings would fall by 43.79%, a much higher impact compared to the other segments analyzed. If the individual were not homosexual, he or she would earn 59.99% less. Despite the development in gay earnings at the higher quantiles produced by both attributes and positive discrimination, lower-wage homosexuals have lower benefits caused by endowments and their sexual orientation, particularly.

4 Conclusion

This paper investigated the causes of wage inequality and the effect of sexual orientation on individuals' wages, as well as its path along the income distribution in Brazil. In general, gays and lesbians are paid more than their heterosexual counterparts in Brazil. However, the wage advantage for gay men is higher than that of lesbians. These results are confirmed in the wage estimation equations with the control of selected variables for lesbians, and although they show statistically non-significant values for gay men, they point in the same direction.

The application of the wage decomposition technique confirms a larger wage gap for gay men than that found for lesbians, compared to their heterosexual counterparts, and finds the causes for these inequalities. The factors explained by the endowments are the essence of the income disparities for gay men that, despite violence and prejudice and their perverse consequences on school performance, those who overcome them eventually feel their positive reflections in the labor market. In this sense, curbing prejudiced and violent actions in schools and universities is imperative.

In Brazil, there is a large impact of productive and labor market characteristics, especially education and occupation, but less favorable effect of sexual orientation on the wages of gay men, compared to both lesbians and homosexual and heterosexuals in general. This study indicates a possibility of greater wage restriction by employers on gay men, leading to lower advantages for them compared to lesbians. More friendly attitudes by

employers and increased awareness could leverage these beneficial effects for gays in Brazil.

Otherwise, the positive discrimination against lesbians explains why lesbian women have a more positive attitude toward the labor market. Literature has shown that lesbians spend less time on household and child-care and take less time off work for their reproductive role, which reduces their depreciation in the labor market. Additionally, there is a specific sexual orientation benefit for lesbians, greater than the one presented for gays and homosexuals and heterosexuals in general, showing that the Brazilian job market values homosexual women more, due to their sexual orientation.

Furthermore, the higher the wage range, the greater the positive discrimination premiums received by lesbians and gays, although they are more intense for gay men. In contrast, gays and lesbians at lower income levels are less affected by these benefits in the labor market.

Despite the achievement in legislation, as the regularization of same-sex marriage in Brazil occurred by resolution No. 175/2013-CNJ, and in the statistical record of homosexuals in Brazil, the definition of homosexuals by the criterion of cohabitation is a recognized limitation, but one that prevails in national and international studies. It is recommended to modernize direct questions about sexual orientation in the annual national surveys, and to update the data to reduce time lag in empirical scientific investigations. It is also important to register that, despite the advantageous wage results for gays and lesbians in Brazil, the incorporation of qualitative aspects can leverage broader discussions on the subject in the country.

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