https://doi.org/10.19052/eq.vol1.iss44.1

Income Differentials among Migrants by Race/Color in Brazil-2000/2010*

Joice Pereira de Souza**
Luís Abel da Silva Filho***

Abstract

Individuals' socioeconomic and demographic characteristics influence salary discrepancies arising from work. Given this, this article aims to investigate income differentials between inter-municipal migrants, dividing them into two specific groups: non-whites and whites, based on microdata from the Demographic Censuses of the years 2000 and 2010. Initially, the empirical literature on labor income differentials is reviewed. Then, a Mincerian income equation is used, estimated by Ordinary Least Squares, in order to analyze wage inequalities among migrants. The results showed that white migrants earned significantly higher incomes than non-whites and that the characteristics of those employed had a different influence between the groups. However, it was found that these inequalities have reduced over time.

Keywords

Job market, income differentials, migrants, Brazil

JEL Classification codes

D31, E24, I32

Cómo citar este artículo: de Souza, J., & da Silva, L. (2024). Income differentials among migrants by race/color in Brazil-2000/2010. *Equidad y Desarrollo*, (44), e1655. https://doi.org/10.19052/eq.vol1.iss44.1

Recibido: 30 de agosto de 2023. **Aprobado:** 17 de octubre de 2023
Versión Online First: 21 de julio de 2024

* This paper is result of the authors' personal research interest.

** Bachelor in Economics at Regional University of Cariri (URCA). Correo electrónico: joiceeconomia@outlook.com ORCID: https://orcid.org/0009-0001-9307-8450

*** Post-Doctorate in Economics from the University of São Paulo (USP), Ph. D. in Economics from the State University of Campinas-Unicamp, professor at the Department of Economics at the Regional University of Cariri (URCA). Correo electrónico: abeleconomia@hotmail.com ORCID: https://orcid.org/0000-0002-7453-1678

Palabras clave

Mercado laboral, diferenciales de ingresos, migrantes, Brasil

Resumen

Las características socioeconómicas y demográficas de las personas influyen en las discrepancias salariales derivadas del trabajo. Ante esto, este artículo tiene como objetivo investigar los diferenciales de ingresos entre los migrantes intermunicipales, dividiéndolos en dos grupos específicos, no blancos y blancos, a partir de los microdatos del Censo Demográfico de los años 2000 y 2010. Inicialmente, se revisa la literatura empírica sobre las diferencias de ingresos laborales; luego, se utiliza una ecuación de ingresos minceriana, estimada por mínimos cuadrados ordinarios, con el fin de analizar las desigualdades salariales entre los migrantes. Los resultados mostraron que los inmigrantes blancos obtuvieron ingresos significativamente más altos en comparación con los no blancos, y que las características de las personas empleadas influyeron de manera diferente entre los grupos. Sin embargo, se encontró que estas desigualdades se han ido reduciendo con el tiempo.

Initial Considerations

Theoretical discussions about salary discrepancies in the labor market are addressed in both national and international literature (Almeida & Almeida, 2014; Augusto et al., 2015; Batista & Cacciamali, 2009; Borjas, 1987; Campante et al., 2004; Cavalieri & Fernandes, 1998; Lee, 1980; Matos & Machado, 2006; Soares, 2000). There is a consensus that socioeconomic and demographic characteristics influence income differentials, varying in intensity depending on the country or region under analysis. Personal characteristics (especially race/color and gender), and regional aspects of individuals also determine salary disparities (Batista & Cacciamali, 2009; Fregúglia & Procópio, 2013; Matos & Machado, 2006).

Due to these wage inequalities arising from work, and considering that the regions, states, or municipalities that expel individuals usually find themselves in unstable economic conditions, which results in low capacity for absorption and insertion of labor, people are motivated to leave their place of origin in search of a better insertion and socioeconomic condition in the place of destination (Maciel & Cunha, 2013; Matos & Machado, 2006; Freguglia, 2007; Freguglia & Procópio,

2013; Silva Filho, 2017; Soares, 2000), accentuating the migratory movement, especially from economically poor regions to economically developed regions.

Thus, economic issues in Brazil constitute one of the main reasons for population mobility internally. Furthermore, these issues are also crucial in countries with high economic heterogeneity within their geographic borders. For this reason, economic dynamics begin to directly influence migratory flows when the region presents low economic growth (Cambota & Pontes, 2012; Freguglia, 2007; Vale & Lima, 2001; Queiroz & Santos, 2011; Silva Filho, 2017).

Given this context, the objective is to analyze the differences in labor income between non-white and white migrants employed in the Brazilian labor market in the intercensal period from 2000 to 2010, considering socioeconomic and demographic factors. In the national economic literature, internal migration analyzed by demographic census data is consensually presented as a phenomenon consolidated by positive migratory selection (Silva et al., 2020; Silva Filho, 2017). In other words, unobservable characteristics of individuals affect the migration decision, such as labor income differentials (Gama & Hermeto, 2017; Silva et al., 2021; Silva Filho & Resende, 2021; Silva Filho & Siqueira, 2021).

From this perspective, if migrants are already a positively selected group, working with Mincerian income equations through Ordinary Least Squares with a positively selected group in itself is already a way to analyze a group with reduced heterogeneity of unobservable characteristics, since the literature cited above already considers that, based on data from the 2000 and 2010 Censuses, and the evidence already found, this group is relatively more homogeneous than the country's population in terms of its unobservable characteristics, above all, such as motivation, effort, boldness and persistence in the pursuit of your goals.

Therefore, as this group (Brazilian migrants) is already relatively less heterogeneous (in unobservable characteristics) than the entire sample population, the use of OLS regressions may not bias the estimator parameters since there is low heterogeneity of characteristics unobservable, above all, inherent to the nature of the data.

To achieve the proposed objective, the article will consist of five sections. In addition to these initial considerations, there is a section on the methodological procedures adopted. Afterward, a review of the empirical literature on labor income differentials in Brazil is presented; then, estimates of migrants' salary discrepancies are discussed. To conclude, final considerations are made.

Methodological Procedures

Temporal and Spatial Section

For the approach given in this article, data from the Brazilian Demographic Census of the years 2000 and 2010 were used, considering the category of fixed-date migrants. Therefore, it refers to migrants who responded that they lived on 07/31/1995 and 08/01/2005 in municipalities other than those who lived in 2000 and 2010, respectively. Fixed date migration, according to international literature (Chiswick, 1999), and proven by national literature (Silva et al., 2020; Silva et al., 2021), allows us to observe the effect of the migrant's selectivity in the place of destination. In other words, it analyzes the migrant before he acquires the characteristics of the natives based on social interactions with them over many years. In this way, it is possible to capture the effect of selectivity in the labor market and the effects of non-productive attributes that differentiate migrants from natives.

In this study, the selected sample is made up only of the Brazilian fixed-date migrant population that answered all questions from the Demographic Censuses of the years 2000 and 2010; who declared to be busy (working), with a positive income and less than R$ 300 000.00 given that, as they refer to Outliers, they can increase the average of a given group, resulting in incoherent and inconsistent results; and, individuals aged between eighteen and sixty were selected. The objective of the age cut-off aims to cover only individuals who are of legal majority to be inserted into the job market via a signed work card (guarantees of labor rights by Brazilian laws), as well as eliminating from the sample people who have, in the majority, legal retirement age, according to the legislation in force at the time of application of the questionnaires. In other words, the objective is to remove from the sample individuals who cannot, by their own decision, and for economic reasons, be included in the economically active population in the Brazilian labor market.

In addition to this cut-off (fixed-date migrants), based on race/color, only people who declared to be white and non-white were selected in the sample. The non-white people considered in this study are those who claimed to be black and brown, following a convention already commonly used in Brazilian economic literature (Almeida & Almeida, 2014; Cavalieri & Fernandes, 1998; Gama & Hermeto, 2017; Ribeiro, 2006;). Yellow and indigenous people were eliminated from the sample,

given the low sample representation, and the central core of this analysis is a comparative focus between white and non-white people exclusively.

Ordinary Least Squares Method

To carry out this work, a sample was selected covering 204 803 migrants in the year 2000, and 87 164 in the year 2010, and the Ordinary Least Squares method was used, which was developed based on the simplified mincerian income equation proposed by Mincer (1974). The use of this method is pertinent to the objective proposed in this study since the sample heterogeneity has already been reduced, as it only concerns Brazilian migrants and because they are already a positively selected group of the population, according to national literature, when analyzed using data from the Demographic Census and in the years of the Census used in this study, that is, they are individuals with unobservable characteristics (courage, determination, perseverance, ambition, among others) that differentiate them from other individuals (Gama & Hermeto, 2017; Silva Filho, 2017; Lima et al., 2019; Silva Filho & Resende, 2021; Silva & Siqueira, 2021).

It is pertinent to highlight that the OLS method presents limitations regarding heterogeneity in population data in Brazil when considering other characteristics of the sample since a set of unobservable characteristics can also affect labor income, and these are not considered here. Furthermore, the estimation considers the average of the data, and even with the selection of possible outliers, as well as others may occur that were not controlled, which does not make the results of this research unfeasible, given all the measures taken to reduce sample heterogeneity.

Considering the above, the mathematical description is as follows:

$$lnW_i = \beta X_i + \varepsilon_i \quad (1)$$

Where lnW_i represents the logarithm of the hourly wage of the employed workforce; X_i refers to the set of observable socioeconomic and demographic characteristics that influence the income earned by employed individuals; ε_i is the stochastic error term.

Thus, based on the model described by Mincer (1974), the Ordinary Least Squares method is used to estimate the logarithm of the migrant's labor income (white and non-white) as the dependent variable and, using as explanatory variables the observable characteristics of individuals, such as race/color, gender, age and

education, marital status, occupations in the industry, commerce and services sector, Brazilian region, occupation with guaranteed labor rights and place of employment residence (urban or rural).

The empirical model is estimated as follows:

$$lnW_i = \beta_0 + \beta_1\, Racecolor + \beta_2\, Gender + \beta_3\, Age + \beta_4\, Age^2 + \beta_5\, Urban + \beta_6\, head\_household + \beta_7\, Marital\_status + \beta_8\, Com\_pri\_incom\_sec\_edu + \beta_9\, Com\_sec\_incomp\_hig\_edu + \beta_{10}\, Com\_hig\_edu + \beta_{11}\, Soc\_sec + \beta_{12}\, ICS + \beta_{13}\, NO + \beta_{14}\, SE + \beta_{15}\, SU + \beta_{16}\, CO + \varepsilon_{\theta i} \quad (2)$$

Where, lnW_i represents the natural logarithm of labor income; and β the parameters to be estimated for migrants. Furthermore, the following *Dummy variables were used*: race/color (non-white = 1), gender (male = 1), age (in years), age² (proxy to capture decreasing salary returns about the age of individuals), if they reside in an urban area (urban = 1), if you are head of household (head_household = 1), marital status (Married = 1). Regarding education, the reference category (omitted) was migrants without education or with incomplete primary education (without_education_incm_pri_edu). The other categories are Complete elementary and incomplete secondary (Com_pri_incom_sec_edu); complete high school and incomplete higher education (Com_sec_incom_hig_edu); and complete higher education (Com_hig_edu). Workers contribute to social security (soc_sec = 1); workers in industry, commerce, or services (ICS = 1). About the region, the reference category was the Northeast region (NE); the others are North (NO), Southeast (SE), South (SU), and Central-West (CO), and finally, $\varepsilon\theta i$ represents the residual model errors.

Work Income Differentials in Brazil: A Review of the Empirical Literature

Brazilian society is historically characterized by a social hierarchy, so that most non-white people are clustered at the base of the social pyramid. One main characteristic that marks this structural character is the selectivity that occurs in the job market. It constitutes one of the dimensions of social exclusion in the capitalist development model (Augusto et al., 2015).

In recent studies on income differentials, one of the main issues that have drawn researchers' attention is the context in which equally productive people

are evaluated differently based on non-productive attributes, such as race/color and gender. Therefore, it is essential to highlight some studies that identify this convergence trend between salary income in Brazil.

Soares (2000) analyzed the profile of selectivity in the labor market between whites and non-whites in Brazil, based on microdata from the National Household Sample Survey-PNAD of 1987 and 1988, using the Oaxaca and Blinder decomposition (1973). The results indicated that between this period, the income earned by non-white and non-white women was considerably lower than that of white men. However, the situation of non-white women was presented at a higher level, as, according to the author, they suffer double selectivity: for being women and for being non-white. It was found that, in 1987, the income of non-white women corresponded to around 33% of the salaries of white men, increasing to 40% in 1988. For non-white men, salaries represented around 5% of 20% of income earned by white men. For Soares (2000), this difference between non-white and white men was explained by the gap in terms of qualifications, given that white individuals had a higher level of education.

Cavalieri and Fernandes (1998) confirm selectivity in the Brazilian labor market in Brazilian metropolitan regions. These authors used microdata from the 1989 PNAD and the salary or Mincerian equation that allows estimating returns to experience, education, and gender, among other variables. They found that, on average, men's income is higher than that of women, just as the salaries of non-white people are lower than those of white individuals. This result was found for the metropolitan regions and the regions analyzed separately. Thus, about the gender differential, it was found that analyzing the set of metropolitan regions, men earned, on average, a salary of 58.38% more than women with the same education level, race/color, age, and region of residence. White people earned, on average, 143.72% more than non-white individuals and 102.70% more than brown people. Regarding selectivity by race/color, the most significant difference was between white and brown individuals, found in the metropolitan region of Salvador (around 51.13%), and the smallest for the State of São Paulo (9.97%).

In studies by Campante et al. (2004), selectivity in the Brazilian labor market was also found. The authors investigated income differentials between races in the urban labor market, considering only workers with a formal contract, those without a formal contract, and public employees, using microdata from the 1996 PNAD, as well as the Oaxaca and Blinder decomposition (1973). The results showed that whites earned around 70% more than non-whites. They also established a com-

parison of selectivity between the Southeast and Northeast regions. Selectivity was higher in the Southeast, ranging from 11% to 26%, and less pronounced in the Northeast, from 4% to 11%. Analyzing Brazil throughout its territorial extension, the selectivity component of the wage difference was 25% in 1996.

Salvato *et al.* (2008) analyzed the selectivity of race/color and gender in the Minas Gerais and Bahia labor market based on microdata from the 2005 PNAD. They used the Oaxaca and Blinder decomposition (1973) to analyze the selectivity effect. The results showed that 31% of the difference between the income of white and non-white men in Bahia, and 27% in Minas Gerais was explained by the selectivity factor by race/color. On the other hand, selectivity about non-white women compared to white men was higher, 67% in Bahia and 66% in Minas Gerais, confirming the results of Soares (2000), in which it was found that selectivity becomes even more significant if the individual is a non-white woman.

Almeida and Almeida (2014) studied wage differentials and selectivity by gender and race/color in the labor market in the state of Rio Grande do Norte based on microdata from the 2012 PNAD and the decomposition of Oaxaca and Blinder (1973). The results demonstrated that around 139% of the average salary differential between men and women is not explained by productive attributes, but by the selectivity effect. Moreover, regarding the decomposition of income related to race/color, it was found that the selectivity component determined 81% of the salary gap between whites and non-whites.

Thus, income in the Brazilian labor market appears to differ between men and women, as it does between whites and non-whites, favoring white men and women.

Differences in Labor Income between Migrants and Non-Migrants in Brazil

Trivariate analyses and Mincerian regressions of wages with migration *Dummy*. The results found, considering the bivariate analysis revealed that considering Brazil in its territorial extension, migrants earned more than non-migrants at a level of 5%. While migrants earned R$18.62 per hour as a salary for all jobs carried out according to the Cost-of-Living Index (ICV), non-migrants received only R$15.18 per hour. In the trivariate analyses, when comparing the average income of migrants and non-migrants, they found that the salary/hour of an individual who had migrated less than nine years ago was R$ 19.61, and that of a non-migrant

was R$ 15.18, being this significant difference at 1%. On the other hand, when comparing the average income of non-migrants (R$ 15.18) with individuals who had migrated more than nine years ago (R$ 18.28), they found that migrants continued to earn higher incomes compared to non-migrants (migrants regardless of the time of migration). In the regression analyses, it was also found that migrants earned higher incomes than non-migrants.

Confirming these results, Maciel and Oliveira (2011) investigated migration and selectivity in the Brazilian labor market based on Heckman's (1979) two-stage model and microdata from the 2008 PNAD. Furthermore, they estimated the return to migration based on the OLS method and Quantile Regressions. Based on the first method, the results found that migrants earned, on average, 6.4% more than non-migrants. On the other hand, when analyzing using the second method, the income differentials between migrants and non-migrants increased according to the salary distribution. The difference between them was 5.4% in the 25th percentile, 10.1% in the median, and 18.3% in the 75th percentile, in favor of migrants. For the authors, these salary disparities between migrants and non-migrants were associated with the return on investment from migration, corroborating the human capital theory.

In turn, Maciel and Da Cunha (2013) verified the income differentials between migrants and non-migrants in Brazil, estimating a Mincerian regression for the logarithm of income based on PNAD data from 2009. They found that migrants' income was higher than that of non-migrants, especially those who migrated less than ten years ago. They found that after the migrant arrived at the destination, his salary was, on average, 17% higher than the income earned by non-migrants. However, this difference tended to reduce over time, on average by 1.2%, without being eliminated. For the authors, this result was also associated with a more significant investment in human capital, where migrants seek to qualify for the job market.

Rodrigues et al. (2015) analyzed the salary difference according to migration status and gender in the State of Bahia, based on PNAD microdata from 2013, estimating salary equations with the correction of Heckman's selection bias (1979), and the decomposition of salaries of Oaxaca (1973) and Blinder (1973). The results revealed that migrant workers in Bahia received higher incomes than non-migrants, regardless of gender. They found that migrant men received an hourly wage of R$22.92 compared to non-migrant men who earned R$15.66. Concerning migrant women, the hourly wage was R$12.97, and that of non-migrants was

R$11.03. Thus, the migration wage differential was R$7.26 among men and R$1.94 among women.

On the other hand, Machado et al. (2018) investigated the income differentials between migrants and non-migrants in the formal labor market in the State of Rio de Janeiro over ten years (2000-2009), taking as a reference the year 2009, and using the OLS method and the Fixed Effect Panel, based on data from the Annual Social Information Report-Migration (RAIS-MIGRA) of those respective years. The results demonstrated that migrant workers in the State of Rio de Janeiro earned, on average, 6.1% less than non-migrants. For migrants from Rio de Janeiro, they earned, on average, 8.4% less than non-migrants.

In this way, the studies above converge with the national literature by demonstrating that labor income in Brazil differs between migrants and non-migrants, and in most cases, migrants are positively selected, earning higher incomes than non-migrants.

Migration and Work Income: An Approach in the 2000 and 2010 Demographic Census

In the economic literature, there are several studies (Freguglia, 2007; Freguglia & Procópio, 2013; Matos & Machado, 2006; Santos Junior et al., 2005; Soares, 2000) demonstrate that personal characteristics, such as gender, education, and race/color, directly influence income differentials, employment status, and job retention when the individual moves from their region of origin to another region of destination. This section examines the income differentials between non-white migrants and white migrants employed in the Brazilian labor market in 2000 and 2010.

Table 1 presents the socioeconomic and demographic characteristics of white and non-white migrant individuals employed in the Brazilian labor market using the simple arithmetic average. From the results plotted in Table 1, there is a greater participation of men (white and non-white migrants) in the Brazilian labor market, aged between eighteen and sixty years, compared to employed migrant women in both years. However, when comparing the last year with the first, it appears that there was a reduction in the relative participation of migrant men to the detriment of the increase in the participation of migrant women. This record corroborates that found by Silva Filho et al. (2018), who found greater participation of migrant and non-migrant men employed in the state of Ceará in the 2000s and 2010s, but

with an increase in the participation of migrant women between the two Censuses analyzed. Furthermore, the participation of married white migrants was relatively higher compared to non-white married migrants. However, the participation of both groups reduces, albeit slightly, when comparing the year 2010 to the year 2000.

Table 1. Average Values of Socioeconomic and Demographic Variables for Non-White Migrants and White Migrants in Brazil-2000/2010

Variables	2000		2010	
	Migrant Not White	White Migrant	Migrant Not White	White Migrant
Male (gender)	67.75	64.51	61.60	58.32
Age	32.60	33.74	34.13	35.42
Age2	1172.60	1246.98	1282.19	1374.60
Marital status (married)	37.13	47.96	32.77	42.08
Head of household	53.91	54.39	51.89	51.84
No education and incomplete primary education	73.54	53.15	52.41	34.84
Complete primary education and incomplete secondary education	13.33	17.28	19.32	18.28
Complete high school and incomplete higher education	11.16	24.82	22.92	30.47
Complete higher education	0.72	3.93	5.18	16.23
Social security	8.56	19.78	13.88	26.52
ICS	38.64	49.88	31.47	39.96
North	14.76	6.17	15.52	66.08
Northeast	36.49	17.57	33.37	17.28
Southeast	26.62	34.07	28.58	37.21
South	7.12	29.33	76.66	27.04
Midwest	15.01	12.85	14.86	11.86
Per capita income	447.62	974.02	736.41	1361.79
Income from work	719.81	1534.24	893.77	1625.20

Source: prepared by the authors based on data from the 2000/2010 Demographic Census.

Regarding the educational level of the workforce, there is an improvement in participation, both among non-white migrants and white migrants. The reduction in the participation of individuals without education or with incomplete primary

education is noteworthy, given that in 2000 non-white migrants accounted for 74% of this educational range, reducing to 53% in 2010, despite being relatively high. White migrants went from 53% to 35% in the first and last year. Furthermore, the participation of both groups in other educational levels increases. It is worth highlighting the increase in the relative participation of white migrants with higher education who left from 4% in 2000 to 16% in 2010, while non-white migrants left from approximately 1% to 5%, respectively.

Given this, it appears that despite both groups improving their level of education, white migrants were relatively more educated than non-white migrants. These results converge with those found by Almeida et al. (2014), who, when analyzing income differentials by gender and race in the formal and informal labor market in the state of Bahia, based on PNAD data from 2012, found that White men and women had, on average, higher levels of education compared to non-whites.

Furthermore, the average income of non-white migrants was R$ 719.81 in 2000, rising to R$ 893.77 in 2010. White migrants earned R$ 1,534.24 in the first year, increasing to R$ 1,625.20 in the second year. Thus, when comparing incomes between them, it appears that white migrants earned R$814.43 more than non-white migrants in 2000, reducing the gap *to* R$731.43 in 2010. However, although the discrepancy between the income earned by non-white and white migrants has decreased, a higher average income from work for white migrants can be confirmed.

"white migrants are more educated, and the majority have formal ties. Therefore, wage differentials can be attributed to these observable productive characteristics of white migrants compared to non-white migrants".

It is essential to highlight that white migrants are more educated, and the majority have formal ties. Therefore, wage differentials can be attributed to these observable productive characteristics of white migrants compared to non-white migrants. However, it is also important to highlight that it is not only socioeconomic and demographic characteristics that enable better income for migrants, but also unobservable attributes that directly affect salary discrepancies, as suggested by studies by Santos Júnior (2002), Santos Júnior et al. (2005), Freguglia, (2007), Gama and Machado (2014).

In Table 2, income differentials between migrants are analyzed using the Ordinary Least Squares Method. This table presents the variation in income per hour of work based on variations

in the selected explanatory variables. In 2000, a non-white migrant earned 18% less than a white migrant (omitted variable). By 2010, the *gap* was reduced, but non-white migrants still earned 14% less than white migrants. Thus, there is a difference between the average salary of non-white and white migrants in Brazil in both years, being higher for the latter than for the former. Furthermore, it is observed that a male migrant earns a higher income than a female migrant, and these differences increase when comparing the first to the last year under analysis.

These analyses corroborate those found by Cavalieri and Fernandes (1998) when analyzing migration in Brazilian metropolitan regions based on microdata from the 1989 PNAD, and using the OLS method, they found that migrant men earned higher incomes than women. Migrant women, as well as white individuals, earned, on average, higher incomes than non-whites.

Table 2. Differential Income from Work according to the Socioeconomic and Demographic Characteristics of Migrants: Estimates by OLS-2000/2010

Coefficients	2000 I estimated	2010 I estimated
(Intercept)	4.109*** (0.021)	4,189*** (0.031)
Race/color (not white)	-0.178*** (0.004)	-0.135*** (0.006)
Male (gender)	0.394*** (0.004)	0.483*** (0.006)
Age	0.050*** (0.001)	0.056*** (0.002)
Age2	-0.001*** (0.000)	-0.001*** (0.000)
Urban	0.290*** (0.005)	0.259*** (0.007)
Head of household	0.227*** (0.004)	0.109*** (0.006)
Marital status (married)	0.103*** (0.004)	0.086*** (0.006)
Complete primary education and incomplete secondary education	0.301*** (0.005)	0.224*** (0.007)

Coefficients	2000 I estimated	2010 I estimated
Complete high school and incomplete higher education	0.739*** (0.005)	0.455*** (0.007)
Complete higher education	1,522*** (0.012)	1,177*** (0.010)
Social Security	0.596*** (0.006)	0.429*** (0.007)
ICS	0.254*** (0.004)	0.206*** (0.006)
North	0.372*** (0.007)	0.340*** (0.010)
Southeast	0.387*** (0.005)	0.369*** (0.007)
South	0.301*** (0.006)	0.342*** (0.009)
Midwest	0.440*** (0.006)	0.467*** (0.009)
Multiple R- squared	0.4173	0.3929
Adjusted R-squared	0.4173	0.3928
F- statistic	9169	3526
P- value	.0000	.0000
Number of observations	204,803	87,164

Significance: *** significant at 1%; ** significant at 5%; * significant at 10%.

Note 1: As suggested in the literature, the natural exponential function was used to calculate the values referring to Complete higher education and Social Security variables.

Note 2: Values in parentheses refer to the p-values of the estimated coefficients.

Source: prepared by the authors based on data from the 2000/2010 Demographic Census.

A migrant head of household, in the year 2000, received 23% more, to the detriment of the one who occupied any other position in the household, reducing this difference to 11% in the year 2010. Furthermore, it is observed that education corroborated highly on income differentials between migrants. It is worth highlighting that, in 2000, a migrant with higher education earned 358% more compared to a migrant without education or with incomplete primary education

(reference category). In 2010, there was a reduction in this difference, earning 224% more compared to that in the reference category, which contributes to the work carried out by Machado et al. (2018).

The authors above used RAIS data, the OLS method, and the fixed effect to examine the income differentials between migrants and non-migrants in Rio de Janeiro from 2000 to 2009. They found that employed individuals who had education completed higher education, those without education or with incomplete primary education, and other levels of education earned a higher hourly wage. Therefore, it can be said that education is a strong determinant of income differentials. In other words, the market responds positively to investment in formal education in Brazil.

It was also verified that being a social security contributor positively impacted income differential. In the first year, a migrant who contributed to social security received 81% more than a migrant not covered by social security. In the last year, it started receiving 54% more about its comparison. Furthermore, migrants employed in the ICS and those residing in the North, Southeast, South, and Central-West regions earned relatively higher incomes, to the detriment of migrants who were working in other sectors of activity and those residing in the Northeast region (reference category), in the 2000s and 2010s.

Final Considerations

This work aimed to investigate income differentials between non-white and white migrants in the Brazilian labor market based on those employer's socioeconomic and demographic characteristics. We used microdata from the Demographic Censuses of the years 2000 and 2010, and the Ordinary Least Squares Method, considering inter-municipal migration and in the fixed date category.

The most relevant results demonstrated a greater participation of migrant men (white and non-white) in the Brazilian labor market, compared to migrant women, in 2000 and 2010. Furthermore, there was a more incredible insertion of married white migrants —to the detriment of non-whites— in both years.

Furthermore, there was a significant increase in the level of education —both for white and non-white migrants, when comparing the year 2000 to the year 2010. However, it was found that white migrants were more educated, highlighting the

reduction of those who declared that they had no education or had only incomplete primary education and the increase in those with completed higher education.

Regarding labor income differentials analyzed using the OLS method, there was a high disparity in the average salary between white and non-white migrants, the latter being in favor of whites. It is worth highlighting here that education was a vital condition for higher income; that is, the higher the migrant's level of education, the higher the work income.

Furthermore, those with more education, those who contributed to social security, those employed in some sector of industry, commerce, or service, and those who lived in the North, Southeast, South, and Central-West regions earned higher incomes compared to those who did not had education or had only incomplete primary education, those who did not contribute to social security, those who were employed outside the ICS and those who lived in a municipality in the Northeast.

Thus, the results found in this work showed that white migrants earned higher incomes than non-white migrants in the Brazilian labor market in 2000 and 2010, and that socioeconomic as well as demographic characteristics had a different influence on the salary returns of the force of work. However, it was found that salary discrepancies between migrants reduced over time.

These results show selectivity in the labor market for Brazilian migrants by race/color, gender, and education. The approach presented here highlights the need for migration policies that aim to promote wage equality for the population, considering their productive attributes, so that income inequality arises only from product attributes and not from the selectivity of individual characteristics of the population. In other words, it is necessary to promote equal pay for individuals with the same productive attributes, regardless of race/color, gender, region of origin, age, teeth, etc.

Some limitations can be highlighted in this study, among them the limitations of the OLS method already addressed previously and the inability to capture the effects of unobservable characteristics of migrant individuals using the technique addressed. Furthermore, the heterogeneity of the labor market in Brazilian macro-regions does not simply involve a simplification of the regional Dummy, therefore requiring a more in-depth analysis from this analytical perspective.

Given the limitations presented, it should be noted that no study to date has analyzed salary differentials among migrants in Brazil, considering only this selective group of the country's population, emphasizing differences by race/color. From this perspective, although the results are incipient for a generalized view of

the phenomenon, they already indicate the need for future studies to analyze this selective group of the Brazilian population, considering new analytical methods —as well as new socioeconomic and demographic approaches to this sample of the Brazilian population.

References

Almeida, W. D. S. de, & De Almeida, P. M. (2014). Diferenciais salariais e discriminação por gênero e raça no mercado de trabalho potiguar (2012). *Revista de Economia Regional, Urbana e do Trabalho*, 3(2). https://periodicos.ufrn.br/rerut/article/view/16693

Almeida, P. D., Almeida, W. D. S., & Besarria, C. (2014). Desigualdades salariais: uma análise sobre o segmento formal e informal do mercado de trabalho baiano (2012). XIX Encontro regional de economia (ANPEC/NE). Anais, Fortaleza.

Augusto, N., Roselino, J. E., & Ferro, A. R. (2015). A evolução recente da desigualdade entre negros e brancos no mercado de trabalho das regiões metropolitanas do Brasil. *Pesquisa & Debate. Revista do Programa de Estudos Pós-Graduados em Economia Política*, *26*(2 (48). 105 - 127. https://revistas.pucsp.br/index.php/rpe/article/view/23066

Batista, N. N. F., & Cacciamali, M. C. (2009). Diferencial de salários entre homens e mulheres segundo a condição de migração. *Revista Brasileira de Estudos de População*, *26*, 97-115. https://doi.org/10.1590/S0102-30982009000100008

Blinder, A. S. (1973). Wage discrimination: reduced form and structural estimates. *Journal of Human Resources*, *8*(4), 436-455. https://doi.org/10.2307/144855

Borjas, G. J. (1987). Self-Selection and the Earnings of Immigrants. *The American Economic Review*, 77(4) 531-553. https://doi.org/10.3386/w2248

Cambota, J. N., & Pontes, P. A. (2012). O Papel da Migração Interna na Convergência de Rendimentos do Trabalho no Brasil, no Período de 1994 a 2009. *Revista Economia*, *13*(1), 131-147. https://www.anpec.org.br/revista/vol13/vol13n1p131_147.pdf

Campante, F. R., Crespo, A. R., & Leite, P. G. (2004). Desigualdade salarial entre raças no mercado de trabalho urbano brasileiro: aspectos regionais. *Revista Brasileira de economia*, *58*(2), 185-210. https://doi.org/10.1590/S0034-71402004000200003

Cavalieri, C. H., & Fernandes, R. (1998). Diferenciais de salários por gênero e cor: uma comparação entre as regiões metropolitanas brasileiras. *Brazilian Journal of Political Economy*, *18*, 162-180. https://doi.org/10.1590/0101-31572000-1295

Chiswick, B. R. (1999). Are Immigrants Favorably Self-Selected? *American Economic Review*, *89*(2), 181-185. https://doi.org/10.1257/aer.89.2.181

Freguglia, R. D. S. (2007). *Efeitos da migração sobre os salários no Brasil* (tesis doctoral). Universidade de São Paulo.

Freguglia, R. D. S., & Procópio, T. S. (2013). Efeitos da mudança de emprego e da migração interestadual sobre os salários no Brasil formal: evidências a partir de dados em

painel. *Pesquisa e Planejamento Econômico*, *43*(2), 255-278. https://repositorio.ipea.gov.br/bitstream/11058/4862/1/PPE_v%2043_n.02_Efeitos.pdf

Gama, L. C. D., & Hermeto, A. M. (2017). Diferencial de ganhos entre migrantes e não migrantes em Minas Gerais. *Revista Brasileira de Estudos de População*, *34*, 341-366. https://doi.org/10.20947/S0102-3098a0014

Gama, L. C. D., & Machado, A. F. (2014). Migração e rendimentos no Brasil: análise dos fatores associados no período intercensitário 2000-2010. *Estudos Avançados*, *28*(81), 155-174. https://doi.org/10.1590/S0103-40142014000200011

Heckman, J. J. (1979). Sample Selection Bias as a Specification Error. *Econometrica*, *47*(1), 153-161. https://doi.org/10.2307/1912352

Lee, E. S. (1980) Uma teoria sobre a migração. En H. Moura (org.), *Migração interna: textos selecionados*. Banco do Nordeste do Brasil.

Lima, Y. C. de, da Silva Filho da, L. A., & Cavalcanti, D. M. (2019). Migração, seleção e diferenciais de renda na região Norte do Brasil em 2010. *Revista Brasileira de Estudos Regionais e Urbanos*, *13*(1), 141-160.

Machado, D. C., Pero, V., & Nascimento, J. (2018). Diferenciais salariais e migração dos trabalhadores formais no Estado do Rio de Janeiro. *Ensaios FEE*, *38*(4), 797-822. https://www.zbw.eu/econis-archiv/bitstream/11159/4300/1/1693129876.pdf

Maciel, F. T., & Cunha, M. S. da. (2013). Migração e diferenciais de rendimento no Brasil: uma análise sobre o efeito do tempo de chegada ao local de destino. *Revista Econômica do Nordeste*, *44*(3), 627-650. https://doi.org/10.61673/ren.2013.81

Maciel, F. T., & Oliveira, A. (2011). *A migração interna e seletividade: uma aplicação para o Brasil*. Anais do Encontro Nacional de Economia da ANPEC.

Matos, R. S., & Machado, A. F. (2006). Diferencial de rendimento por cor e sexo no Brasil (1987-2001). *Econômica*, *8*(1), 5-27.

Mincer, J. A. (1974). The human capital earnings function. En *Schooling, experience, and earnings* (pp. 83-96). NBER.

Oaxaca, R. (1973). Male-female wage differentials in urban labor markets. *International Economic Review*, *14*(3), 693-709. http://dx.doi.org/10.2307/2525981

Queiroz, S. N. D., & Santos, J. M. D. (2011). Saldos migratórios: uma análise por Estados e Regiões do Brasil (1996-2006). *Revista Econômica do Nordeste*, 42(2), 309-332. https://doi.org/10.61673/ren.2011.154

Ribeiro, C. A. C. (2006). Classe, Raça e Mobilidade Social no Brasil. *Revista de Ciências Sociais*, *49*(4), 833-873. https://doi.org/10.1590/S0011-52582006000400006

Rodrigues, K., Moura, F. K. F., de Souza, S. D. C. I., & Maia, K. (2015). Diferença salarial segundo a condição de migração e sexo na Bahia. *Revista Economia e Desenvolvimento*, *14*(2), 181-195. https://periodicos.ufpb.br/ojs/index.php/economia/article/view/29945

Salvato, M. A., De Souza, T. M. F., Cardoso, M. B. R., & Moreira, S. A. (2008). *Mercado de trabalho em Minas Gerais e Bahia: Considerações sobre uma análise da discriminação de raça e gênero*. Seminário Sobre A Economia Mineira, 13, 2008.

Santos Junior, E. D. R. D. (2002). *Migração e seleção: o caso do Brasil* (tesis doctoral). Fundação Getulio Vargas.

Santos Júnior, E. D. R. D., Menezes-Filho, N. A., & Ferreira, P. C. (2005). *Migração, seleção e diferenças regionais de renda no Brasil*. Ipea.

Silva Filho, L. A. (2017). *Migração: inserção socieconômica, condição de atividade e diferenciais de rendimentos no Brasi* (tesis doctoral). Ibct.

Silva Filho da, L. A., & Dos Santos, R. A. H. V. (2021). Migração, seleção e diferenciais de rendimentos do trabalho em Pernambuco–2000/2010. *Nexos Econômicos*, 15(1), 54-81. https://doi.org/10.9771/rene.v15i1.48453

Silva Filho da, L. A., Dos Santos, J. M., & De Siqueira, R. M. (2020). Impactos das características socioeconômicas e demográficas sobre os diferenciais de rendimentos do trabalho entre migrantes e não migrantes no Ceará *Nexos Econômicos, 13*(1), 30-32. https://doi.org/10.9771/rene.v13i1.33784

Silva Filho, L. A. D., & Resende, G. M. (2021). Migração intermunicipal no nordeste brasileiro: há evidências de seleção migratória? *Revista Pesquisa e Planejamento Econômico, 51*(3), 187-2012. https://doi.org/10.38116/ppe51n3art6

Silva Filho da, L. A., & Siqueira, R. M. D. (2021). Impactos da seleção migratória sobre os diferenciais de rendimentos do trabalho no Ceará. *Revista Planejamento e Políticas Públicas*, 58(2), 145-176. https://doi.org/10.38116/ppp58art5

Soares, S. S. D. (2000). *O perfil da seletividade no mercado de trabalho: homens não brancos, mulheres brancas e mulheres não brancas* (texto para Discussão, n. 769). Ipea.

Vale, A. L. F., & Lima, L. C. (2001). Migração e mudança social: a influência do migrante do sertão nordestino no norte do Brasil. *Scripta Nova: Revista electrónica de Geografía y Ciencias Sociales*, 94(82). https://www.ub.edu/geocrit/sn-94-82.htm.