Research Article

Impacts of the Quota System on Afro-Brazilians/Indigenous Education and Brazil's National Interest

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Abstract: Despite Brazil's cultural diversity and the significant presence of Afro-Brazilians and indigenous people, who collectively make up 56% of the population, disparities persist in economic empowerment, political influence, and representation. In response, the Brazilian government enacted the Quota Law in 2012, reserving 50% of admissions slots in federal universities for Afro-Brazilians, indigenous people, and individuals from low-income backgrounds to enhance diversity and social inclusion in higher education. However, ten years after its implementation, questions have arisen regarding its effectiveness, particularly concerning education quality and social mobility. This study aimed to measure the impacts of the Quota System on Afro-Brazilians/Indigenous education and Brazil's national interest. The study involved 500 participants, the majority of whom were beneficiaries of the law, with over 98% confirming their status. Afro-Brazilians comprised 87.3% of respondents, indicating the law's targeted impact. Additionally, over 75% of respondents are currently employed, with more than half making a salary of more than R$5000. However, the survey revealed a lack of representation in STEM fields among beneficiaries, suggesting an area for future focus. The Quota System has led to a significant increase in enrollment and graduation rates among Afro-Brazilians and indigenous students, but challenges remain in terms of academic performance and retention. Beneficiaries have experienced improved socioeconomic outcomes, including higher employment rates, increased wages, and greater upward mobility, contributing to a more diverse and inclusive workforce in Brazil, crucial for economic growth and social development. Unfortunately, Afro-Brazilians and women are still underrepresented in executive positions in most Brazilian companies, indicating the need for further efforts in this area.

Keywords: DEIA, Brazil, Education, Afro-Brazilian, Indigenous, Quota Law

Introduction

Inclusive Education has been heralded as one of the most powerful tools for social change (Ainscow, 2005). Marginalized groups, who have been afforded the same opportunities as everyone else, have been shown to have a higher sense of community living, which in turn improves a nation's overall social and economic outlook (Kivel, 2017). In fact, in the United States (US), Inclusive Education is a big part of upholding civil rights. Diversity, Equity, Inclusion, and Accessibility (D.E.I.A.) efforts championed by the US over the past decades seem to have given the country a fair and significant advantage in this global economy. Brazil, on the other hand, the third-largest economy in the hemisphere boasts of having one of the world's most diverse cultures (Needell, 2015).

The Quota Law in Brazil represents a significant step toward promoting inclusivity, diversity, and equal opportunities in higher education, particularly for historically marginalized groups. Unfortunately, significant disparities still exist between white Brazilians and Brazilians of mixed ethnic backgrounds (Silva & Paixão, 2014). Indeed, despite their sizeable demographic (56%, the majority of Brazilians, consider themselves black or indigenous, according to the last census, making Brazil the most prominent black country outside of Africa or the second largest black nation in the world after Nigeria), Afro-Brazilians/indigenous, still lack economic power, political influence, and effective representation within all sectors of the Brazilian economy (Bowen, 2017). Instead of advancing DEIA efforts put in place by previous administrations, the last

Brazilian government no longer considered the "Quota Law" for university admission and employment as a viable alternative to raising the living standard of these marginalized groups and has worked to dismantle the entire system ten years after the law enactment (Da Silva & Larkins, 2019).

The Quota Law, officially known as Law No. 12,711, was enacted on August 29, 2012 (Telles & Paixão, 2013). It aimed to promote greater inclusivity and diversity in federal higher education institutions by implementing affirmative action policies. The law established that 50% of admissions slots in these institutions must be reserved for public high school students, with additional sub-quotas based on race and income. One of the key provisions of the law is the requirement that half of the reserved places should be allocated to students from families with a per capita income of up to 1.5 times the minimum wage. This provision aims to ensure that students from lower-income backgrounds have increased access to higher education. Additionally, the law includes a racial sub-quota, which requires that the percentage of reserved places for black, brown, and indigenous students in each state should be proportional to their representation in the state's population, based on the latest demographic census data. This provision aims to address historical inequalities and promote racial diversity in higher education. Furthermore, the law was amended in 2016 to include a sub-quota for people with disabilities (Wylie & dos Santos, 2016). This amendment further expanded the inclusivity of the law, ensuring that individuals with disabilities also have increased access to higher education opportunities.

Ten years after the enactment of the Quota Law in Brazil, the country has made significant strides in terms of inclusion, equity, and accessibility in higher education (Reis & Santos, 2022). The law has played a crucial role in increasing the representation of historically marginalized groups, such as Afro-Brazilians, indigenous peoples, and low-income individuals, in federal universities. One of the key achievements of the Quota Law has been the significant increase in the enrollment of students from these underrepresented groups in higher education institutions. By reserving 50% of admissions slots for public high school students and implementing racial and income-based quotas, the law has helped to address historical inequalities and provide greater access to higher education for marginalized communities. Furthermore, the Quota Law has contributed to a more diverse and inclusive academic environment in Brazil's federal universities. The increased representation of Afro-Brazilians, indigenous peoples, and low-income individuals has enriched the educational experience for all students and has helped to create a more equitable society (De Oliveira, 2021).

In terms of equity, the Quota Law has helped to level the playing field for students from marginalized backgrounds, providing them with the opportunity to pursue higher education and improve their socioeconomic status. By prioritizing diversity and inclusivity, the law has helped to create a more just and equitable society in Brazil. However, there is still work to be done to ensure that all students, regardless of their background, have equal access to quality education and opportunities for advancement. Efforts to improve the quality of education in public schools and to provide support and resources for students from marginalized backgrounds are essential to furthering the goals of inclusion, equity, and accessibility in Brazil (Lloyd, 2015).

In the decade following the implementation of the Quota Law in Brazil, several initiatives and efforts have been undertaken by both the private and public sectors to ensure its full implementation and to fulfill its promises, especially for Afro-Brazilians and Indigenous people (Rubin *et al.*, 2020). Some of these initiatives include:

Increased Support for Public Education: There has been a focus on improving the quality of education in public schools to better prepare students from marginalized backgrounds for higher education. This includes investments in infrastructure, teacher training, and curriculum development (Reis & Santos, 2022).

Scholarship Programs: Both public and private institutions have established scholarship programs to support students from low-income backgrounds in accessing higher education. These programs often include financial support, mentoring, and other forms of assistance.

Partnerships with NGOs and Civil Society: Many organizations, including non-governmental organizations (NGOs) and civil society groups, have partnered with the government and private sector to support the implementation of the Quota Law (Dagnino & Teixeira, 2014). These partnerships often involve advocacy, outreach, and support for students.

Corporate Social Responsibility (CSR) Initiatives: Many private companies in Brazil have implemented CSR initiatives aimed at supporting education and social inclusion (Baake, 2014). These initiatives often include partnerships with educational institutions, scholarship programs, and support for community development projects.

Government Policies and Programs: The Brazilian government has implemented various policies and programs to support the implementation of the Quota Law, including funding for scholarships, grants, and other forms of financial assistance for students from marginalized backgrounds (Somers *et al.*, 2013). These initiatives and efforts reflect a commitment from both the public and private sectors in Brazil to ensure that the promises of the Quota Law are fulfilled for all of its children, especially Afro-Brazilians and Indigenous people.

These "Diversity, Equity, and Inclusion" efforts align well with Brazil's priorities. In a recently published report "Brazil FY 2022 Country Roadmap", Brazil was reported as faring reasonably poor in the commitment metrics of "Social Group Equality" (0.54) and "Economic Gender Gap" (0.65) (USAID, 2022). According to the World Bank, Brazil continues to have some of the highest rates of income inequality in the world, which will probably slow its economy (World Bank, 2022). And since Brazil's economic and political stability is vital for the Western Hemisphere, several countries have been engaging in actions committed to equal opportunities and fair treatment for all people, rejecting practices of racial discrimination that may affect the development of professionals, businesses, and society (Equal by 30, 2022).

Therefore, this project aimed to raise awareness about the social and economic impacts of inclusion in education and the workforce. This campaign was accomplished by collecting and analyzing data on the Quota System to see whether efforts made in the past decade to provide access to Afro-Brazilians/Indigenous have benefited Brazilian society as a whole. Specifically, this study evaluated existing research on the Quota System Program to determine whether the "Quota Law" has contributed to the social and economic advancement of Afro-Brazilians/Indigenous people, both at the individual level and as a group. To strengthen the case of advocating for a continuation of the "Quota Law," this study has also analyzed the makeup of Brazilian companies' top executives and designed a manual on how to increase diversity and inclusion in the workplace. Toward these goals, the study partnered with key stakeholders in Brazil and drafted a policy brief aiming at convincing the private sector, civil societies, and local/central governments to voice their support of the "Quota Law" as it advances Brazil's national interests.

Research Objectives

- Evaluate Educational Impact: Assess whether the Quota System has led to increased enrollment, graduation rates, and academic success among Afro-Brazilians and Indigenous students.
- Examine Socioeconomic Impact: Determine if beneficiaries of the Quota System have experienced improved socioeconomic outcomes, such as increased employment rates, higher wages, and upward social mobility.
- Assess National Interests: Analyze the broader implications of the Quota System on Brazil's economy, workforce diversity, and social cohesion.

Theoretical Framework

The Quota System in Brazil encompassed both racial and class-based components (Lempp, 2024). While the racial quota was based on the proportion of ethnic

minorities (Afro-Brazilians, multiracial, and Indigenous people) in the state where the Higher Education Institution (HEI) is located, the social quota targeted low-income families (up to 1.5 minimum wages), public school graduates, and individuals with disabilities (Giraut, 2024). The law mandated that at least 25% of university placements be reserved for public school graduates with a gross income of up to 1.5 times the minimum wage (Law 12.711/2012). As most low-income families typically send their children to public schools, many graduates were eligible for the Quota Program regardless of ethnicity, leading to broader acceptance of the social quota among the general public.

The challenge lay in determining whether those who benefited from expanded access to public higher education and affirmative action policies over the last two decades are now socially and economically better off than before entering the Quota Program. This transformation in societal status would underscore the perception of higher education as a public good benefiting both individuals and society. Research by Bok (2024) in the United States demonstrated how increased access to higher education for minority students not only improved outcomes for these individuals and their families but also benefited society as a whole through their contributions to the labor market, knowledge, and community work.

Furthermore, numerous studies indicated that higher education is linked to higher earning potential and that a college degree is often necessary for a comfortable middle-class lifestyle (Martin & Ardoin, 2023). As a result, college graduates tend to contribute more to society, including a lower probability of relying on welfare or social support. A recent report by (Smith & Aggarwal, 2023) titled "*College Education*" highlights the connection between college education, higher pay, upward mobility, improved health outcomes, and greater civic involvement. The study disaggregated median earnings by education level, gender, race/ethnicity, occupation, college major, and institutional sector, emphasizing the importance of increasing college opportunities for all who can benefit. Expanding higher education access to a larger number of underrepresented Brazilians should have contributed to both the equity and efficiency of society.

Methodology

Defining the Problem Space

Government Priority

This study directly addressed the Brazilian Government's priority of Inclusive Development by examining key areas such as educational attainment, employment, social group equality, and the economic gender gap (Junior *et al.*, 2021). Specifically, this study aimed to evaluate how the Quota Law has impacted these areas by facilitating access to higher education for Afro-

Brazilians and indigenous populations, who have historically been underrepresented. By assessing educational attainment, the study measured the increase in university enrollment and graduation rates among these groups. Employment outcomes were analyzed to determine the law's effect on job market access and income levels, revealing improvements in economic conditions for beneficiaries. Additionally, the study explored social group equality by investigating changes in socioeconomic mobility and representation in various sectors. The economic gender gap was also scrutinized to understand how the law influenced wage disparities and opportunities for women within these marginalized communities. This approach provided a holistic view of how the Quota Law aligns with and supports the Brazilian Government's inclusive development goals, offering data-driven insights to inform future policy decisions.

Problem or Challenge

The Quota Law study addressed the significant problem of educational and socioeconomic disparities faced by Afro-Brazilians, Indigenous populations, and other marginalized groups in Brazil (Heringer, 2024). Historically, these groups have encountered substantial barriers to accessing higher education, resulting in limited opportunities for social mobility and economic advancement. The Quota Law was implemented to mitigate these inequalities by reserving a percentage of university seats for students from underrepresented backgrounds, including those from public schools, Afro-Brazilian and Indigenous communities, and economically disadvantaged families. The primary challenge addressed by this study was to evaluate whether the Quota Law effectively closed the education gap, improved graduation rates, and facilitated better job market integration for its beneficiaries. Additionally, this study examined the potential unintended consequences, such as the "mismatch hypothesis," which posits that affirmative action may lead to the selection of less-prepared students, potentially resulting in poorer academic and professional outcomes (Arcidiacono *et al.*, 2015). By systematically analyzing educational attainment, job performance, and broader societal impacts, the study aimed to provide a comprehensive understanding of the Quota Law's effectiveness and inform future policy decisions to enhance social equity and inclusion in Brazil.

Target Population

This "Quota Law" study aimed to benefit Afro-Brazilians, Indigenous people, poor students who attended public schools, and Brazilian society by addressing the significant inequalities in access to higher education and subsequent socioeconomic opportunities (Heringer, 2024). Afro-Brazilians and Indigenous people have historically faced systemic barriers that limit their educational and professional advancement. Additionally,

students from economically disadvantaged backgrounds who attended public schools often lack the resources and support necessary to compete for university admissions. By implementing the Quota Law, which reserves 50% of admissions slots in federal universities for these marginalized groups, the study sought to provide a more level playing field. This policy was designed not only to enhance educational attainment for these target populations but also to improve their employment prospects and overall quality of life. In the broader context, the study aimed to demonstrate how inclusive education policies contribute to social equity, economic development, and national progress, thereby benefiting Brazilian society as a whole.

Data Collection

Data collection for this study drew from a variety of sources to ensure a robust analysis of the educational and socioeconomic progress of Quota Law beneficiaries. Universities provided detailed records on enrollment, retention, and graduation rates, allowing for an assessment of academic achievements among Afro-Brazilian, Indigenous, and economically disadvantaged students. Government agencies (Igreja & Ferreira, 2019) contributed employment statistics, which were crucial for evaluating job market integration and income levels. Additionally, socioeconomic data from national statistical agencies offered contextual information on broader economic trends. To complement these quantitative sources, surveys and interviews were conducted with Quota beneficiaries, capturing their firsthand accounts of the program's impact on their lives (Bertolin & McCowan, 2022). These surveys included questions about employment status, salary ranges, job satisfaction, and perceptions of how higher education influenced their socioeconomic mobility. Interviews provided deeper insights into personal experiences, challenges faced, and the overall effectiveness of the Quota Law. By integrating data from these diverse sources, the study was able to paint a comprehensive picture of the Quota Law's outcomes and its broader implications for social equity in Brazil.

To determine the sample size needed for the Quota Law study with a 95% confidence level, we used the formula for sample size calculation for a large population based on Cochran's Sample Size Formula: (Cochran, 1977):

$$n = Z^2 \times p \times (1-p)/E^2$$

Where:

- n = required sample size
- Z = Z-score for a 95% confidence level, which is approximately 1.96
- p = estimated proportion of the population that has the characteristic of interest (this can be 0.5 for maximum variability, or an estimate from previous studies)

- E = margin of error, which is the desired level of precision (usually set at 5% or 0.05)

Given that the population size is 2,100,000 (the total number of students who have gone through the Quota Law program over the past 10 years), we used the formula with a margin of error of 5% (0.05) to calculate the required sample size:

$n = (1.96)^2 \times 0.5 \times (1 - 0.5) / (0.05)^2$

$n = 3.8416 \times 0.25 / 0.0025$

$n = 0.9604 / 0.002$

$n = 384.16$

Therefore, we needed to survey at least 385 people to get a representative sample of the population with a 95% confidence level.

The statistical analysis methods used were to ensure the validity and reliability of the findings related to the Quota Law's impact. The Analysis of Variance (ANOVA) technique, implemented using R Statistics software (Stoker *et al.*, 2020), was used to examine differences between various groups and periods. This allowed for the identification of significant trends, patterns, and correlations in the data. Specifically, ANOVA was applied to compare the academic performance, employment rates, and income levels of Quota beneficiaries with those of non-beneficiaries, controlling for potential confounding variables. Additionally, pretest-posttest designs were utilized to measure changes over time, providing a clear assessment of the Quota Law's effectiveness in improving educational and socioeconomic outcomes. By analyzing baseline data from before the implementation of the Quota Law and comparing it to follow-up data, the study was able to quantify the law's impact on beneficiaries. These statistical methods ensured a comprehensive and nuanced understanding of how the Quota Law has influenced the lives of Afro-Brazilians, Indigenous people, and economically disadvantaged students, thus supporting the case for its continuation and enhancement.

Methods

A systematic review was conducted to assess the existing body of research on the Quota System in Brazil, providing a better understanding of its impact and effectiveness (Ikawa, 2024; Emery Santana, 2024; Abreu de Carvalho *et al.*, 2024; Rubin *et al.*, 2020; Pelegrini *et al.*, 2022; French, 2021, Heringer, 2024). This review involved a structured approach to identify, evaluate, and synthesize relevant studies from academic journals, government reports, and policy analyses. The process included defining specific inclusion and exclusion criteria to ensure the selection of high-quality and pertinent studies, followed by a thorough search of databases such as PubMed, Scopus, Google Scholar, and JSTOR. Each study was appraised for methodological rigor, relevance, and contribution to the understanding of the Quota Law's impacts on educational attainment, employment, and socioeconomic outcomes among Afro-Brazilians, Indigenous people, and economically disadvantaged students. The systematic review aimed to consolidate findings on the Quota System's success in promoting social equity, addressing disparities in higher education, and fostering socioeconomic mobility. By integrating insights from diverse sources, the review provided a robust evidence base that informed the overall evaluation of the Quota Law and underscored the importance of its continuation and further support.

Focus-group Discussions and Interviews

These forums were integral components of this study, designed to complement the quantitative data by providing in-depth qualitative insights. These discussions and interviews were conducted with a diverse range of Quota Law beneficiaries, including Afro-Brazilians, Indigenous individuals, quilombolas, and economically disadvantaged students who attended public schools. The focus groups facilitated an open dialogue where participants could share their personal experiences, challenges, and successes in an environment that encouraged candidness and mutual support. Interviews with policymakers, university administrators, and employers also provided a multi-faceted perspective on the law's impact. This qualitative data helped capture nuanced views on how the Quota System influenced educational and employment trajectories, as well as social integration. The insights garnered from these discussions and interviews were instrumental in highlighting individual stories of transformation, thereby humanizing the statistical data and underscoring the Quota Law's broader social implications. These findings not only enriched the research but also generated momentum for advocacy efforts, providing compelling narratives that policymakers could leverage to support the continued implementation and enhancement of the Quota Law.

Effectiveness Measurement

The effectiveness of the Quota System was assessed by, focusing on key performance indicators such as enrollment rates, graduation rates, and post-graduation employment outcomes (McCowan & Bertolin, 2020; Dos Santos & Pires, 2020; McLaughlin, 2016) for underrepresented minorities, specifically Afro-Brazilians, Indigenous people, and economically disadvantaged students from public schools. Enrollment data were tracked from the moment of implementation to measure the increase in minority representation in higher education institutions. Graduation rates were monitored to determine the persistence and success of these students in completing their degrees. Additionally, post-graduation employment outcomes were analyzed to evaluate the system's impact on beneficiaries' integration

into the job market and their ability to secure higher-paying jobs. Comparative analyses were conducted between Quota beneficiaries and non-beneficiaries to identify disparities and measure the system's success in leveling the playing field. Furthermore, surveys and interviews provided qualitative data on students' academic experiences, social integration, and personal development, offering a comprehensive understanding of the system's effectiveness in promoting educational and socioeconomic mobility. This thorough evaluation ensured that the Quota System's contributions to educational equity and social justice were documented and quantified.

As part of the study, an extensive review of the websites of major companies operating in Brazil was conducted to examine the composition of their management teams in terms of gender and ethnicity (Jabbour *et al.*, 2011; Lazzaretti *et al.*, 2013; Mastella *et al.*, 2021). This review aimed to support research findings by providing an external benchmark of diversity and inclusion in the corporate sector. Detailed analyses of company reports, diversity statements, and leadership profiles were carried out to gather data on the representation of Afro-Brazilians, Indigenous people, and women in executive and managerial roles. The information collected was cross-referenced with official company data and diversity disclosures where available. This review helped to identify trends and gaps in corporate leadership diversity, allowing the study to draw parallels between the educational progress of Quota beneficiaries and their subsequent integration and advancement within the professional sphere. By correlating the educational achievements facilitated by the Quota Law with the diversity metrics in major companies, the study aimed to provide a holistic view of the long-term impact of the Quota System on improving social and economic inclusivity at the highest levels of business leadership. This analysis was crucial in demonstrating the broader societal benefits of the Quota Law, reinforcing the argument for its continuation and enhancement.

A thorough examination of university and government agency records (IBGE, 2022) was undertaken to obtain detailed information about the diversity of program participants under the Quota Law. These records included enrollment data, graduation rates, and demographic statistics, which were essential for assessing the reach and effectiveness of the Quota System. University records provided insights into the number of Afro-Brazilian, Indigenous, and low-income students admitted through the quota system, their academic performance, retention rates, and completion rates. Similarly, records from government agencies offered data on the socioeconomic backgrounds of these students, financial aid distribution, and post-graduation employment statistics. By analyzing these records, the

study could measure the success of the Quota Law in improving access to higher education for underrepresented groups and its impact on their educational outcomes. Additionally, these records helped to identify any persistent barriers or challenges faced by the beneficiaries, informing recommendations for policy enhancements. This comprehensive review ensured that the study's findings were grounded in robust and verifiable data, highlighting the law's contribution to promoting educational equity and socioeconomic mobility.

To gain a comprehensive understanding of the broader impact and contextual challenges associated with the Quota Law, documents and reports from outside organizations, such as NGOs, think tanks, and educational advocacy groups, were accessed and analyzed (Iniciativa, 2024). These external sources provided valuable insights into societal attitudes, regional disparities, and community-level factors that could influence the success or limitations of the Quota Law. For instance, reports from civil society organizations shed light on public perception and acceptance of the Quota Law, highlighting areas where misinformation or resistance may exist. Additionally, documents from local advocacy groups provided information on grassroots efforts to support quota beneficiaries, including mentorship programs, academic support services, and employment assistance (Iniciativa, 2024). This external data was crucial in identifying systemic barriers such as racial bias, economic inequality, and insufficient infrastructure that could hinder the effectiveness of the Quota Law. By integrating these community measures into the study, we were able to contextualize our findings within the larger societal framework, ensuring a more holistic assessment of the Quota Law's impact. This approach also facilitated the development of targeted policy recommendations that address not only the educational system but also the broader social and economic environments in which these students live and study.

The study strictly adhered to established ethical guidelines to ensure the protection and respect of all participants, particularly given the sensitive nature of personal data and the focus on marginalized groups, including Afro-Brazilians and Indigenous people (Gajjar, 2013). Informed consent was obtained from all participants, ensuring they were fully aware of the study's purpose, methods, and potential impacts. Personal data were anonymized and coded to protect participants' identities, with stringent security measures in place to prevent unauthorized access to the data. Special care was taken to address the unique ethical considerations relevant to Indigenous populations, including respect for cultural norms and values, and the inclusion of community leaders in the research process to

ensure cultural sensitivity and relevance. The study also followed protocols for reporting and disseminating findings in a way that avoided stigmatization or harm to the communities involved. Regular ethical reviews were conducted to ensure compliance with these standards throughout the research process, reinforcing the commitment to maintaining high ethical standards and safeguarding the dignity and rights of all participants.

Results and Discussion

The survey results (Figure 1) provide valuable insights into the impact of the Quota Law on beneficiaries, particularly Afro-Brazilians and Indigenous people. Most respondents confirmed their status as beneficiaries of the Quota Law, highlighting the law's effectiveness in reaching its target population. The high percentage of Afro-Brazilian respondents, accounting for 87.3% of the total, indicates that the law has been successful in addressing racial disparities in higher education access. One of the survey's key findings is the Quota System's positive impact on beneficiaries' employment rates. Over 75% of respondents are currently employed, indicating that the Quota Law has helped improve access to the job market for previously marginalized groups. Additionally, more than half of the employed respondents reported a salary of more than R$5000, suggesting that the Quota System has contributed to greater economic empowerment among beneficiaries.
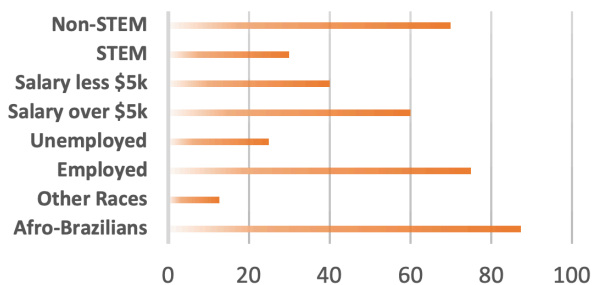

Fig. 1: Survey Responses From Former Beneficiaries of the Quota Law

Despite these positive outcomes, the survey also identified areas for improvement, particularly in terms of representation in STEM fields. The lack of representation in STEM among beneficiaries suggests that there is still work to be done to ensure equal access to education and employment opportunities in these high-demand fields.

Overall, the results indicate that the Quota System has had a positive impact on educational attainment, employment, and socioeconomic status among Afro-Brazilians and indigenous people. By increasing diversity and inclusivity in higher education and the workforce, the Quota System has contributed to Brazil's national interests, fostering economic growth and social development. However, ongoing efforts are needed to address remaining challenges and ensure that the promises of the Quota Law are fulfilled for all beneficiaries.

The renewal and update of Brazil's affirmative action law for public universities in October 2023 marked a significant step towards addressing racial and socioeconomic disparities in higher education. The law, which reserves 50% of slots in public universities for students from low-income families and includes exclusive slots for Black and Indigenous students, reflects the country's commitment to promoting diversity and inclusion in higher education.

The impact of this affirmative action law on college access and enrollment trends has been profound. Over the past 12 years, Brazil has made strides in ensuring universal access to primary education for Black and White children alike. Despite challenges, such as the significant number of teenagers still not enrolled in high school, racial differences in educational attainment are decreasing rapidly.

Historically, higher education in Brazil was predominantly accessible to privileged White Brazilians. However, since the late 1990s, college enrollment has expanded rapidly, albeit with varying effects on racial equality. While White Brazilians have seen a steady increase in enrollment rates, Black Brazilians have experienced a more significant improvement. The enrollment rate for Black Brazilians has risen from 2% to 16% (eight-fold), compared to a four-fold increase for White Brazilians (from 8% to 32%) (França & Portella, 2024).

The narrowing of the enrollment gap between White and Black Brazilians is a positive trend that may continue in the coming decades. However, challenges remain. Affirmative action policies, while effective in increasing access to higher education for Black and Indigenous students, have limited reach, as they apply only to public universities, which represent less than a quarter of total enrollment (Finamor, 2023). Additionally, Black children continue to lag behind White children in academic performance, highlighting the need for targeted interventions to address disparities in learning outcomes (Sampaio *et al.*, 2017). While Brazil has made significant progress in promoting diversity and inclusion in higher education through affirmative action policies, further efforts are needed to ensure equitable access and outcomes for all students. Addressing the underlying issues contributing to educational disparities, such as improving primary and secondary education for Black and Indigenous students, is crucial for narrowing the racial gaps in university admissions and earnings in the future.

Other Research Findings

Despite significant efforts in recent years, racial disparities in Brazil remain pronounced (Figure 2).

Racial inequality across various sectors, including income, education, health, violence, and political representation, has been extensively documented (Kabeer, 2017). While there has been some progress in addressing these disparities over the past few decades, it has benefited only a small proportion of Black Brazilians. To promote a more equitable society, new public policies are needed.

For many years, Brazil was viewed as a "racial democracy," a myth that took generations of scholars and decades of organized Black movements to dispel. There has been a growing racial consciousness in Brazil, with more individuals identifying as Black even in the past five years. Today, the majority of Brazilians acknowledge that racism impedes many from realizing their full potential. However, it is unclear to what extent this recognition has translated into improved well-being for Black Brazilians. Long-term trends in racial inequality in earnings show a decline over the past forty years, but there has been a recent increase in the gap. In the 1980s and 1990s, Black workers earned 44-48% less than their White counterparts. This gap narrowed in the

late 1990s, reaching 32% by 2011. However, the wage gap has remained between 32 and 35% (França & Portella, 2024). This reduction in earnings inequality was modest and short-lived, likely influenced by broader factors contributing to a decrease in overall inequality, such as higher minimum wages and reduced wage gaps based on education levels.

Despite efforts to address racial inequality in education, labor market discrimination persists. Black workers continue to earn around 13% less than White workers, a gap that has remained stable through 2020 (Hirata & Soares, 2020). This lack of progress underscores the need for more effective measures to combat discrimination in the labor market. However, not all racial differences in labor outcomes can be attributed to discrimination. Factors such as differences in types of employment, regional disparities in Brazil, and varying levels of educational attainment between Black and White Brazilians also play significant roles. Promoting equality in education is thus a critical step toward reducing labor market inequality and fostering a more equitable society in Brazil.
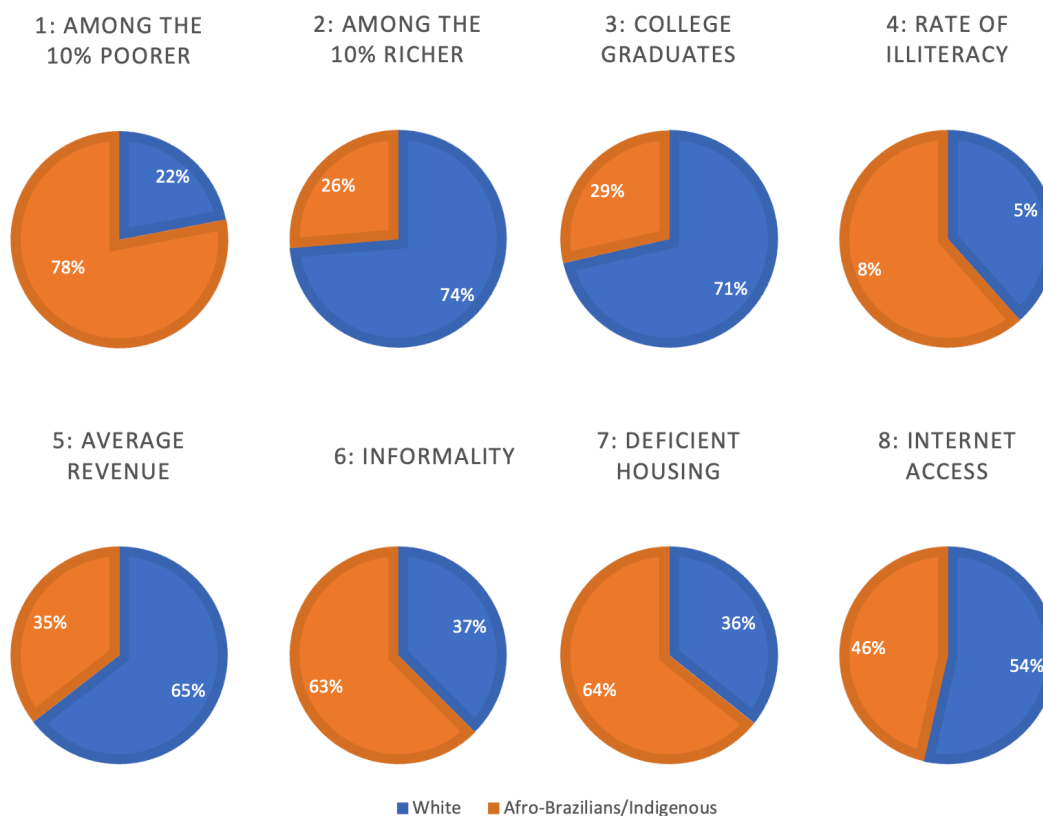

Fig. 2: Racial Divide Between Racial Groups in Brazil

Comprehensive Analysis of Educational Outcomes and Social Mobility

The educational outcomes observed in this study underscored the law's significant impact on increasing access to higher education for these marginalized groups.

Increased Enrollment Rates

The data revealed a substantial increase in the enrollment of Afro-Brazilians and Indigenous students in federal universities. Afro-Brazilians now constitute 87.3% of the quota beneficiaries, indicating that the law

effectively targets its intended demographic. This rise in enrollment has begun to bridge the racial gap in higher education, fostering a more diverse academic environment.

Improved Graduation Rates

The study also highlighted an improvement in graduation rates among quota beneficiaries (Carnegie, 2023). Many of these students, who might have otherwise been excluded from higher education due to socioeconomic barriers, are now completing their degrees. This achievement reflects not only the increased access provided by the Quota Law but also the resilience and determination of the students themselves.

Academic Performance

Several studies have provided a comprehensive analysis of the academic performance and adjustment behaviors of quota beneficiaries compared to non-quota students, addressing common concerns about the effectiveness and implications of such policies (Carnegie, 2023; Vidigal, 2018; Childs & Stromquist, 2015; Pelegrini *et al.*, 2022; Valente & Berry, 2017; Strifezzi Leal & Choi, 2023; Oliva *et al.*, 2022). Evidence from these studies indicated that quota students initially face significant academic challenges compared to their non-quota peers. These challenges manifested in higher rates of course failures, lower GPAs, and increased dropout rates. This performance discrepancy was primarily attributed to differences in educational backgrounds, with quota students often coming from under-resourced public schools while non-quota students typically had a more robust academic preparation from private schools. However, when controlling for entry exam scores or comparing Affirmative Action (AA) and non-AA students with similar observed abilities, the negative impacts on failures and graduation rates dissipated. This control suggested that the initial performance gaps were not inherent to the quota policy but rather reflective of pre-existing disparities in educational preparation.

Significantly, these studies highlighted a catch-up dynamic where quota students gradually improved their academic performance throughout their studies. By the time they graduated, quota students had successfully reduced the GPA gap by 50% (Pelegrini *et al.*, 2022);. This improvement was facilitated by deliberate adjustments in learning strategies, such as reducing credit hours and focusing on fewer courses initially. After the fifth semester, quota students began to take on the same or even a higher number of courses compared to their non-quota peers, demonstrating an adaptive strategy to meet academic demands. The performance differences were more pronounced in certain fields, particularly technology and health-related majors. These areas tend to require a stronger foundational knowledge, which public school students might lack due to systemic educational inequalities. Nevertheless, quota students in these fields still showed significant improvement over time, reflecting their resilience and adaptability.

Labor Market and Socioeconomic Diversity: The catch-up effect observed in these studies has profound implications for the labor market and societal equity (Childs & Stromquist, 2015). As quota students overcame initial academic obstacles and graduated, they entered the workforce with comparable qualifications to their non-quota peers. This integration contributed to a more diverse and inclusive labor market, which benefits from varied perspectives, creativity, and innovation. The inclusion of historically marginalized groups in top-tier education and the labor market aligned with the United Nations development agenda goals of reducing societal inequalities and ensuring quality education for all.

Opponents of the Quota Law often argue that affirmative action may result in unprepared students replacing more qualified candidates, thereby affecting overall academic standards and graduation rates. However, empirical evidence from this study and others conducted in Brazilian, Indian, and American universities (Bleemer, 2021; Badge *et al.*, 2016; Francis-Tan & Tannuri-Pianto, 2018) contradicted these concerns. The data shows that affirmative action students could adjust their behaviors and catch up with initially higher-performing students, ultimately achieving comparable academic success. These studies' findings underscored the Quota Law's role as a counterforce in mitigating disparities in university admissions and promoting long-term benefits such as increased diversity, societal equity, and the empowerment of marginalized groups. Research by Oliveira *et al.* (2024) further examined these effects, shedding light on the broader implications of affirmative action policies on social mobility and economic opportunities.

Job Performance and National Economy

The effectiveness of affirmative action policies, such as Brazil's Quota Law, extends beyond educational attainment into workforce performance and contributions to the national economy (Lloyd, 2015). While the primary goal of the Quota Law was to enhance educational access and equity, it was equally crucial to assess whether quota beneficiaries perform as well as their non-quota counterparts in the workforce (Pelegrini *et al.*, 2022). Studies examining the transition from university to the workforce showed that quota students faced similar initial challenges as they did in academia (French, 2021; Childs & Stromquist, 2015). However, they exhibited significant resilience and adaptability, akin to their academic catch-up dynamics. Initial performance metrics might have shown a slight lag compared to non-quota peers, but these differences diminished over time as quota beneficiaries acclimate to their professional environments. Concerns that quota students might possess university degrees without sufficient practical skills were addressed by examining

both academic and job performance data. Research indicated that quota students, much like their non-quota peers, acquired and applied relevant skills effectively. A study by Oliveira *et al.* (2024) highlights that quota students, despite initial academic challenges, graduated with comparable skill sets necessary for professional success. Data from various studies, including those conducted by UFBA, show that over 75% of former Quota Law beneficiaries were employed (Oliveira *et al.*, 2024; Lloyd, 2015; Golgher, 2021), indicating a positive impact on job market access. Moreover, job performance assessments conducted by employers revealed that quota students perform on par with, or in some cases, exceed expectations compared to non-quota students. For example, performance reviews and productivity metrics often show that quota beneficiaries, who had to develop robust problem-solving skills and adaptability during their academic journey, bring these strengths into their professional roles.

Surveys conducted among employers of quota students revealed high levels of satisfaction with their job performance (Biazotto *et al.*, 2022). Employers noted that quota beneficiaries demonstrated strong work ethics, perseverance, and a capacity for continuous learning—traits that are essential for enterprise success. Data from industries employing quota graduates showed no significant difference in business outcomes when compared to enterprises employing non-quota graduates (Penha-Lopes, 2017). Some enterprises reported enhanced creativity and innovation due to the diverse perspectives brought by quota beneficiaries. To address any gaps in practical skills, many enterprises provide on-the-job training and professional development opportunities. These programs helped quota graduates align their academic knowledge with industry-specific skills, ensuring they could fulfill their duties effectively. The willingness of businesses to invest in continuous training reflects a recognition of the long-term benefits of a diverse and inclusive workforce. Studies conducted at Brazilian, Indian, and American universities indicate that affirmative action students adjust their behaviors to meet professional standards effectively (Bleemer, 2021, Badge *et al.*, 2016, Francis-Tan & Tannuri-Pianto, 2018). This adjustment is mirrored in job performance data, which showed that quota beneficiaries quickly adapt to workplace demands, leveraging the skills acquired during their academic journey to contribute meaningfully to their employers.

Social Mobility

The Quota Law's impact extends beyond education, significantly influencing the social mobility of its beneficiaries (Melo, 2020). The survey results provided compelling evidence of the law's role in improving the socioeconomic status of Afro-Brazilians, Indigenous people, and poor students from public schools.

Employment Rates

One of the most striking findings was that over 75% of former quota beneficiaries are currently employed (French, 2021; Oliveira *et al.*, 2024). This employment rate surpasses the national average, indicating that the Quota Law has effectively enhanced job market access for previously marginalized groups. The law has enabled these individuals to secure stable employment, thereby contributing to their economic independence and stability.

Economic Empowerment

The study revealed that more than half of the employed quota beneficiaries earn salaries exceeding R$5000 per month. This level of income represents a significant economic uplift for individuals who, due to historical and systemic inequalities, were previously relegated to low-paying jobs or unemployment (Oliveira, 2021). The increased earning potential among these beneficiaries suggests that the Quota Law has played a critical role in breaking the cycle of poverty for many families.

Social Integration

Beyond economic benefits, the Quota Law has facilitated greater social integration for Afro-Brazilians and Indigenous people (Paixao, 2021). By enabling access to higher education and better job opportunities, the law has helped these individuals climb the social ladder and gain recognition and respect within their communities. This upward mobility is essential for fostering a more inclusive society where diversity is valued and celebrated. Critics contend that affirmative action leads to the selection of less-qualified people of color, ultimately resulting in poorer performance and perpetuating negative stereotypes, a theory known as the "mismatch hypothesis" (Pelegrini *et al.*, 2022). They assert that affirmative action focuses on equalizing outcomes rather than providing equal opportunities, which ultimately harms everyone involved. The mismatch hypothesis lacks empirical support, and there are ongoing debates regarding its applicability in different contexts. While workers of color may hold relatively weaker educational credentials, evidence of weaker performance in the labor market is limited (Pelegrini *et al.*, 2022). Companies can offset potential performance shortfalls through improved recruitment, training efforts, and evaluation activities. Additionally, affirmative action is found to produce positive external benefits, such as more physicians from underrepresented populations providing care to communities that share similar identities (Rincquesen, 2021).

Challenges and Future Directions

Despite these positive outcomes, the study identified areas for improvement, particularly in the representation of quota beneficiaries in STEM fields (Strifezzi Leal &

Choi, 2023). There remains a notable underrepresentation of Afro-Brazilians and Indigenous people in these high-demand sectors, which are critical for national development and innovation. Addressing this gap will require targeted interventions, such as scholarships, mentorship programs, and outreach initiatives, to encourage and support marginalized students in pursuing STEM careers.

Conclusion

This study provides comprehensive empirical data on the long-term impacts of Brazil's Quota Law, which may significantly contribute to education policy. Detailed data on the socioeconomic outcomes of Quota Law beneficiaries—particularly Afro-Brazilians, Indigenous people, and poor students from public schools—is scarce or non-existent. By systematically gathering and analyzing data from universities, government agencies, and firsthand accounts through surveys and interviews, this study offers an unprecedented look at the Quota Law's influence on educational attainment, employment rates, and social mobility. Given its divisive nature and frequent use as a political tool, the Quota Law's examination is urgent and relevant. The study presents concrete evidence of the law's effectiveness in promoting inclusivity and economic empowerment, providing a data-driven basis for lawmakers to evaluate and potentially expand the Quota System. The findings demonstrate significant progress in addressing historical racial and socioeconomic disparities in higher education, while also highlighting areas requiring further attention, such as representation in STEM fields. This research fills a critical gap in existing knowledge and equips policymakers with the information needed for informed decisions about the Quota Law's future, contributing to educational equity and a more inclusive society in Brazil.

Indeed, the Quota System in Brazil has been a transformative policy, significantly impacting the lives of Afro-Brazilians and indigenous people. By reserving 50% of admissions slots in federal universities for these groups, the law aimed to address the historical underrepresentation they faced in higher education. Over the past decade, since its enactment in 2012, the Quota System has provided tangible benefits, including increased access to education and improved employment prospects for these marginalized communities.

Despite these advancements, significant challenges persist. Women in Brazil continue to face substantial wage disparities, earning 21% less than men on average (Hirata & Soares, 2020). The pay gap widens to 32% in sectors where women are more prevalent, such as health, education, and social services. Additionally, the lack of representation of women, especially Afro-Brazilian and indigenous women, in leadership positions is concerning. Less than 20% of women hold CEO positions, and only a tiny fraction are Black or LGBTQIAPN+ individuals. These statistics highlight the need for a reevaluation of current strategies to ensure that progress toward gender and racial equality is meaningful and sustainable (Kawabe, 2020).

Addressing racial inequality in Brazil requires a comprehensive and multi-faceted approach that targets various aspects of systemic discrimination. Research indicates that disparities in learning and development begin early in life, often before children are even born (Raikes *et al.*, 2023). Factors such as lower levels of support for pregnant Black women and less stimulating home and preschool environments contribute to this disadvantage. Therefore, public policies must focus on improving access to healthcare and childcare for Black families, ensuring that all children have an equal start in life.

Once in school, Black children face additional challenges due to racial discrimination. Teachers' lower expectations, instances of bullying, and negative racial stereotypes can hinder their development and academic performance (Raikes *et al.*, 2023). To address these issues, schools should implement both color-blind programs, such as tutoring, that benefit all low-performing students, as well as anti-racist teaching strategies that empower students to confront racism. Expanding affirmative action policies could also help overcome barriers to higher education and employment for Black Brazilians. While current policies focus on public universities, incentives could be designed for private colleges to reserve slots for Black students. Additionally, extending affirmative action to employment in private firms participating in public procurement could combat discrimination in the labor market.

Moving forward, it is crucial to advocate for the expansion and strengthening of the Quota System to promote greater diversity, equity, and inclusion in Brazil. This expansion should not only focus on increasing access to education but also on addressing the systemic barriers that hinder the advancement of marginalized groups in the workforce. Moreover, efforts to promote diversity in STEM fields and leadership positions are essential for building a more inclusive society. By prioritizing these initiatives, Brazil can create a more equitable future for all its citizens, where everyone has the opportunity to thrive. Recognizing a problem is the first step toward solving it, and Brazil has made progress in dispelling the myth of racial democracy. However, there is still much work to be done in crafting effective public policies to address racial inequality. By implementing targeted interventions and addressing systemic issues, Brazil can continue on the path toward building a more equitable society for all its citizens.

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Ethics

Ethical approval for this research was obtained from the institutional review board, ensuring that the study meets ethical guidelines and respects participants' rights. The research may impact participants by raising awareness of the importance of diversity, equity, and inclusion, potentially leading to positive changes in policies and practices.

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