

ARTIGO

**AFFIRMATIVE ACTIONS AND HORIZONTAL STRATIFICATION: COMPARISON
BETWEEN BONUS AND QUOTAS ACT AT THE UFMG**

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ABSTRACT: In this article, we analyze the effects of two affirmative action policies adopted by the Federal University of Minas Gerais (UFMG): the bonus policy and the Quota Act. We compare the social inclusion produced by them by two angles: the access itself to UFMG and the distribution of the target groups among the institution's programs, considering its internal horizontal hierarchy. We verify the changes in the student's profile by focusing on three variables: race, school origin and family income. Based on descriptive statistics, it is concluded that the two policies had relevant effects on social inclusion. However, this occurred in different ways. The bonus policy was able to increase the access of students from public schools, blacks and with low-income, but mainly in the less selective programs. The Quota Act contributed more effectively to increasing the access of these students to the most selective programs of UFMG, reducing the horizontal inequalities. We observe, however, that remains expressive inequalities in the access to the universities programs still need to be addressed.

Keywords: higher education, affirmative action, educational inequalities, horizontal stratification.

**AÇÕES AFIRMATIVAS E ESTRATIFICAÇÃO HORIZONTAL: COMPARAÇÃO ENTRE BÔNUS E LEI DE
COTAS NA UFMG¹**

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RESUMO: Neste artigo analisam-se os efeitos de inclusão social de duas políticas de ação afirmativa adotadas pela Universidade Federal de Minas Gerais (UFMG): a política de bônus e a Lei de Cotas. Compara-se a inclusão social propiciada por essas políticas sob dois ângulos: o acesso em si à UFMG e a distribuição do público-alvo entre as graduações da instituição, considerando sua hierarquia horizontal interna. Verificam-se as mudanças no perfil do alunado focalizando três variáveis: raça, origem escolar e renda familiar. Com base em estatísticas descritivas, conclui-se que as duas políticas tiveram efeitos relevantes na inclusão social, mas de formas distintas. A política do bônus elevou o ingresso de estudantes das escolas públicas, negros e de baixa renda, mas principalmente nos cursos menos seletivos. Já a Lei de Cotas contribuiu de maneira mais efetiva para aumentar o acesso desses grupos aos cursos mais seletivos, reduzindo as desigualdades horizontais. Observa-se, no entanto, que permanecem desigualdades expressivas no acesso aos cursos da universidade que ainda precisam ser enfrentadas.

Palavras-chave: ensino superior, ação afirmativa, desigualdades escolares, estratificação horizontal.

ACCIONES AFIRMATIVAS Y ESTRATIFICACIÓN HORIZONTAL: COMPARACIÓN ENTRE BONIFICACIÓN Y LA LEY DE CUOTAS EN LA UFMG

RESUMEN: En este artículo analizamos los efectos de dos políticas de acción afirmativa adoptadas por la Universidad Federal de Minas Gerais (UFMG): la política de bonificación y la Ley de Cuotas. Comparamos la inclusión social desde dos ángulos: el acceso en sí mismo a la UFMG y la distribución de estudiantes universitarios entre los grados de la institución, considerando su jerarquía horizontal interna. Verificamos los cambios en el perfil del estudiante, enfocándonos en tres variables: raza, origen escolar y renta familiar. Con base en estadísticas descriptivas, se concluye que las políticas tuvieron efectos relevantes en la inclusión social, pero de diferentes maneras. La política de bonificación aumentó la entrada de estudiantes de escuelas públicas, negros y con bajos ingresos, pero principalmente en cursos menos selectivos. La Ley de Cuotas ha contribuido de manera más efectiva a incrementar el acceso de estos estudiantes a cursos más selectivos, reduciendo las desigualdades horizontales. Sin embargo, observamos que persisten desigualdades significativas en el acceso a los cursos universitarios que aún deben ser enfrentadas.

Palabras clave: educación superior, acción afirmativa, desigualdades escolares, estratificación horizontal.

INTRODUCTION

Since the first initiatives carried out by state universities in the early 2000s, affirmative action policies for access to higher education have been the subject of numerous studies dedicated to the analysis of their consequences (Aranha et al., 2012; Karruz, 2018; Marteleto et al., 2016; Senkevics & Mello, 2019; Silva, 2020). By and large, the outcomes arrived by the researchers have pointed to the effectiveness of these policies in expanding access for students belonging to social and racial groups historically excluded from Brazilian higher education. However, an unexplored side is the effects of these policies on the different undergraduate courses, or how they would have affected not only the overall racial and socioeconomic composition of the institutions, but the distribution of students among the courses.

The possibility that the expansion or broadening of opportunities for access ('vertical stratification decrease') may be accompanied by the maintenance of inequalities related to the quality of this access ('horizontal stratification increase' or 'conservation') (Dubet, 2015; Duru-Bellat & Kiefer, 2008; Lucas, 2001; Nogueira, 2018) makes it necessary to verify whether and how the configuration of these internal inequalities has been modified during the process of implementing affirmative action in the country. Understanding this aspect is especially important because Brazilian higher education access takes place in courses that are selective and that provide their graduates with very different symbolic and economic returns.

In this research study, we seek to contribute to this discussion by analysing the changes brought about by affirmative action, not only on the general profile of the student body at the Federal University of Minas Gerais ("Universidade Federal de Minas Gerais" - UFMG), but also on the distribution of students among courses. The UFMG context offers a rich example for the analysis of the effects of affirmative action policies, as in recent decades the institution has had two different kinds of policies: the bonus system, in force between 2009 and 2012, and the reserved places model, whose implementation began in 2013, after the approval of Law 12.711/2012, usually called the Quotas Act.

The bonus policy was established by UFMG in 2008 and consisted of adding a value to the score obtained by candidates eligible to be covered by the policy. Thus, candidates who attended the last seven years of Basic Education in public schools received an additional 10% on the score obtained in the selection exam, and an additional 5% was also granted to those candidates who declared themselves black and indigenous - reaching the bonus to the total of 15%.

The approval of the Quotas Act prompted the institution to choose to discontinue its affirmative action policy and adhere only to the Federal legislation. Indeed, since 2013, the UFMG gradually began to reserve a percentage of vacancies for candidates belonging to the quota target public until it reached, in 2016, the minimum of 50% of vacancies established by the law.

It is worth noting that the Quotas Act provides vacancy reserves for students who completed high school in public schools, allocating specific quotas for candidates who are: (1) public school graduates, regardless of income and or skin colour; (2) low-income public school graduates, regardless of their skin colour; (3) Blacks (self-declared black or mixed race) or Indigenous people, with low incomes; (4) Blacks (self-declared black or mixed race) or indigenous people, with low incomes. In 2016, with Law No. 13,409, the quotas began to include a specific reserve, in each of these sub-quotas, for disabled people.

The present study covers data regarding entrants to the institution between 2005 and 2019, provided by the Office of the Pro Dean of Undergraduates of UFMG (Prograd/UFMG). Based on descriptive statistical analyses, we explore the changes in the profile of the institution from three parameters: racial and school origin, and family income. Besides being three classic variables used in research on educational inequalities, affirmative action policies have relied mainly on them to define their potential beneficiaries: Afro-Brazilian descendants (black and mixed race), public school graduates or those with low incomes. Besides this introduction, the article has five sections and the final considerations. In the second section, we discuss the theoretical framework that guides our analysis of inequalities of access to higher education. In the third, we point out some of the main changes that occurred within the UFMG in the period under consideration: expansion of vacancies, especially from the Restructuring and Expansion Program of Universities (Reuni); modifications in the rules of access, with the adoption of the Unified Selection System (Sisu) in 2014; implementation of the affirmative action policies already mentioned, the bonus system and quotas. The fourth section is dedicated to the analysis of the changes observed in the general social and racial composition of the institution. In the fifth section, we investigate the transformations that have occurred in the distribution of students among the institution's courses, considering their level of selectivity. In the final considerations, we resume the main results and make additional observations.

WIDENING ACCESS AND HORIZONTAL STRATIFICATION OF HIGHER EDUCATION

From the perspective of education and sociology, research indicates that processes of expanding access may be accompanied by the maintenance or even deepening of educational inequalities in certain contexts. The literature on educational stratification indicates that this may occur in two ways.

One would be the hypothesis raised by Raftery and Hout (1993), called maximally maintained inequality. Based on a study of the educational expansion process in Ireland between the 1920s and 1970s, they observe that the expansion of places and the reduction of entry barriers to secondary education in the country was not accompanied by a greater equalization of access opportunities. The explanation for this phenomenon, which would support the hypothesis, is that educational expansion would initially favour mainly those social groups that were able to take advantage of the new opportunities created. Only when these groups reached a point of saturation of their representation in each level of education would the gap between their chances of access and those of socioeconomically disadvantaged groups decrease.

A second circumstance that would result in the expansion of education without a true equalization of opportunities would occur when disadvantaged social groups have greater access to a certain educational level, but they do so in less valued spaces. Thus, they would tend to enter courses, institutions or branches of the education system considered of lower quality, prestige or professional profitability. This would represent the hypothesis of inequality effectively maintained, elaborated by Lucas (2001). In this way, the educational advantages obtained by social groups with better socio-economic conditions would be preserved within the education system.

Indeed, the evidence that inequalities of access may remain despite the expansion of places at a certain education level has also been approached in sociological studies in the field of sociology of education. In France, Bourdieu and Champagne ([1992] 2017) point out that processes of school expansion do not imply a reduction in social inequalities. These authors emphasize the facet of education as a specific type of positional resource, that is, a good whose value in economic or symbolic markets would depend on its rarity. This would explain the process observed in these societies in which the expansion of places in the school system and the reduction of barriers to entry into certain levels of education do not necessarily result in an effective democratization of educational opportunities. With the relative devaluation of university diplomas, there is an extension of the minimum time of study necessary to obtain good occupations and/or the construction of new internal divisions in the school system, which would preserve the social advantages of groups with better socioeconomic conditions.

Also referring to the French context, Merle (2002) queries the idea disseminated at the end of the 1990s that the Brazilian school system had become more democratic, by observing that although secondary education had expanded, students from working classes mainly accessed educational careers of shorter duration and lower prestige. About this situation, Merle uses the notion of segregate democratization (Merle, 2009) to explain the permanence of educational inequalities in France, in which the increase of access to secondary education by young people of popular origin would have taken place from the diffusion of formations of a more vocational character, preserving more academic qualifications for socioeconomically affluent students.

The segregate democratization idea is also used in other works. Dubet (2015) highlights that the massification of access to higher education may not necessarily result in democratisation, as it may be accompanied by increased internal segmentation between institutions and academic careers. Duru-Bellat and Kieffer (2008) also mobilise the notion used by Merle to analyse how the process of opening the French school system in 1985-1995 transferred access inequalities within the system. Whereas the most highly valued qualifications in the labour market remained restricted to the middle classes, working class students were mostly directed to the more vocational branches of secondary education. In the end, inequalities would remain, as the occupational destinations open to these students would not differ much, in relative terms, from those of their parents in past periods. Similar results are pointed out in another study comparing Germany and France (Duru-Bellat et al., 2008)

How would these processes of expansion with internal differentiation of education, especially in higher education, take place in Brazil? Some studies have been developed on this issue. Ribeiro and Schlegel (2015), based on Population Census data, analysed the changes in the horizontal stratification of higher education during the years 1960 and 2010. They identified that despite the gains in access and completion of higher education experienced by women and black students (~~(mixed race or black)~~), the two groups would be more represented in academic careers that would provide lower economic returns in the labour market. Whereas women have narrowed the access gap to men in some more prestigious careers, racial inequality would have remained virtually untouched over the years.

Perosa and Costa (2015) are based on the notion developed by Merle in researching the expansion pattern of courses and units at the Paulista State University ("Universidade Estadual Paulista" - UNESP). By analysing the entrants at the different campuses of the university, they found an internal differentiation of the social profiles of students according to the units and their courses. They also

identify that those students who are the first in their families to enter higher education do so mainly in humanities careers, especially those aimed at teacher training.

Recently, Carvalhaes and Ribeiro (2019) specifically analyse the selectivity pattern of Brazilian higher education by gender, race, and socioeconomic level, based on data from the National Student Performance Examination ("Exame Nacional de Desempenho de Estudantes" - ENADE), from 2007 to 2009, and the Higher Education Census of 2010. They verify the existence of a significant internal differentiation between the types of courses that the groups typically accessed, with women, black students or students of lower socioeconomic level being overrepresented in areas of lower prestige and professional profitability.

Those surveys, and the theoretical perspectives to which they are oriented, fit into contexts in which the expansion of opportunities occurred mainly through the quantitative expansion of the school system, followed or not by internal differentiation of its qualifications. In this regard, these forms of expansion of access tend to preserve the "differential structure of school benefits" (Bourdieu & Champagne, 2017, p. 247). However, what are the consequences when public policies act on these structures, as in the case of affirmative action measures? In other words, affirmative action, by granting scholarships, reserving vacancies, or increasing scores in the selection process, modifies the structure of opportunities in higher education by redistributing the spaces that were previously "reserved" for groups with greater social advantages.

Research in Brazil has indicated that school, racial and income inequalities in access to higher education have been reduced in recent years. Marteleto et al. (2016), based on data from a representative population survey in 2013, identified a reduction in inequalities in transition to higher education between whites and blacks among cohorts born from 1989 to 1992, compared to those born from 1984 to 1988. Salata (2018), using the bases of the National Household Sample Survey ("Pesquisa Nacional por Amostra de Domicílios" - PNAD), also observed a decrease in racial inequalities of access to higher education between 2005 and 2015.

Senkevics and Mello (2019), comparing the composition of federal universities between 2012 and 2016, observed an increase in the proportion of students belonging to the target audience of the quotas, especially among institutions that before the policy had low social inclusion. Recently, Silva (2020) also verified that the enrolment of black students in higher education increased over the period from 2012 to 2017, from 37.8% to 47.3%. Specifically in the scope of the UFMG, a study by Aranha et al. (2012) pointed out an increase in the access of black students, egresses from public schools or of low income, after the expansion of vacancies in the institution and implementation of the bonus policy.

However, an aspect still little explored by studies in the field refers to the effects of affirmative action policies on horizontal inequalities in access to higher education. Since academic careers provide very different status and income returns to their graduates, it is important to consider whether and how these educational inequalities have been affected by affirmative action. Another important issue is to understand the different results that different policy designs can have in reducing not only vertical inequalities, but also horizontal.

Regarding this discussion, Daflon et al. (2013, p. 316), by discussing the differences in affirmative action models that universities have implemented in Brazil, point out that the bonus system, despite the possibility of expanding the access of the target audience, may not be able to guarantee

admission in the most selective courses of the institutions. In a study on the affirmative action experience at the State University of Campinas ("Universidade Estadual de Campinas" - UNICAMP), whereby the bonus model was used, Venturini and Feres Júnior (2016) observed the low effectiveness of inclusion of the program over the analysed period, mainly to raise the access of students from the public network and black students in the areas of greater prestige of the university. Indeed, different affirmative action policies can be more or less effective in reducing horizontal inequalities in universities.

The adoption of affirmative action, unlike a quantitative expansion of vacancies, brings particularities when compared to the situations usually referred to by theories dedicated to analyzing processes of expansion of the education system and equalization or not of opportunities for access to education. We explore this issue in the following sections, taking UFMG as a particular context and comparing the equalizing effects of two affirmative action models that have been implemented by the institution in recent years.

THE EXPANSION PROCESS OF VACANCIES AND THE IMPLEMENTATION OF AFFIRMATIVE ACTION POLICIES AT UFMG

According to Feres Júnior et al. (2018, p. 13-14), affirmative actions are programs or policies that aim to grant rights or resources to certain social groups that are socially disadvantaged and that have suffered or suffer social discrimination and, for this reason, are more vulnerable to achieving important social assets in society. These assets can be of various types, such as employment, income, school or university places, among others, and the criteria for target audiences can include aspects such as gender, class or income, religion, disability, ethnicity, race and others.

Due to their objectives, affirmative action is a controversial topic in Brazilian society and in other societies where it has been implemented. Largely because they broke with the concept of formal equality, based on a meritocratic ideology, replacing it with that of equity or substantive equality (Feres Júnior et al., 2018, p. 32). The latter principle recognises the fact that certain social groups have greater obstacles to achieving valuable social goods and having a dignified life and, for this reason, require the granting of resources or rights so that they have equal chances of obtaining these goods, compared to groups that have privileges or do not suffer discrimination.

Concerning the access to higher education, statistical studies carried out by different researchers and research centres throughout the 1970s and 1980s, as highlighted by Carlos Hasenbalg, Nelson do Valle Silva (Hasenbalg, 1979; Hasenbalg & Valle Silva, 1988; Valle Silva et al, 1999) and those developed in the context of IPEA - Institute of Applied Economic Research - (Theodoro et al., 2008), made unquestionable the existence of deep inequalities on access to universities, especially in the racial dimension - historically denounced by the black movement (Munanga, 2007). The accumulated evidence of inequalities, together with the political demands of social movements, have fostered the debate around the need to adopt affirmative action programmes to equalise access to Higher Education.

Due to these demands, several public institutions of Higher Education began to adopt affirmative action aimed at the access of students from public schools, low-income or black students in the early 2000s. The first initiatives were promoted by state institutions such as the University of the State of Bahia (UNEB) and the University of the State of Rio de Janeiro (UERJ), in the latter case by

legislative decision of the state, and, among federal institutions, by the University of Brasilia (UnB). (Feres Júnior et al., 2018; Gomes et al., 2022).

As in other institutions, Affirmative action was much questioned in internal circles at UFMG. Peixoto (2006) argues that the adoption of affirmative action "aiming at the inclusion of the black population and of those educated in public schools" (p. 110) had already been demanded at the university since the 1990s, especially in view of the expansion of high school graduates. In this regard, it is important to note the relevance of the Affirmative Action Program at UFMG in fostering the internal debate for the implementation of these policies (Gomes et al., 2022). This teaching, research, and extension program, founded in 2002 by Nilma Lino Gomes, was a pioneer in that it constituted an affirmative action project aimed at black students, especially those from low-income backgrounds. It was characterised by offering material and academic support activities to beneficiaries, as well as promoting debates, studies and research related to the discussion and critical reflection on racism in the country. Although it was aimed at permanence, the project was important for helping to channel internal and external demands towards the implementation of affirmative action for access at UFMG.

Despite this historical claim, the institution bet on the expansion of vacancies, especially in the evening period, as a basic strategy for expansion and democratization of access. Thus, for example, on February 20, 2003, the University Council decided "that the priority mechanism of the University's academic policy would be the creation and expansion of vacancies in night courses, a decision that was taken based on analyses that highlighted the potential of this mechanism as a promoter of social inclusion." (Peixoto, 2006, p. 112).

In the 1990s, the expansion of vacancies, especially in the evening period, was increased with the university's adherence to the Program for Restructuring and Expansion of Universities ("Programa de Reestruturação e Ampliação das Universidades" - Reuni). Through this program, 1,886 vacancies were created between the years 2009 and 2010 (Aranha et al., 2012).

UFMG adopted its own model of affirmative action policy specifically aimed at access, based on the bonus on the candidates' grades, only in 2008. Despite the approval of this model, the demand of many teachers, managers and students within the institution was for the implementation of a quota policy - especially among the participants of the Affirmative Action Program (Gomes et al., 2022, pp. 12-13). However, the University Council opted for the bonus model, inspired in part by the experience of the State University of Campinas (UNICAMP). As we highlighted in the introduction, this policy consisted in the addition of 10% on the score achieved in the entrance examination for candidates who attended the final years of Elementary Education and High School in the public school system (totaling a minimum of seven years) and, among these, those self-declared blacks received another 5%, reaching a total increase of 15% in their grade.

The Quotas Act in 2013 abolished this policy and the reservation of vacancies was initiated. Following the Brazilian Federal legislation, for the 2013 entrance, a minimum reserve of 12.5% of the vacancies was adopted by the university. This percentage increased to 25% in 2014, 37.5% in 2015 and, finally, reached 50% in 2016.

Sisu was another important measure implemented in 2014. This system enables students from all over the country to participate in the selection process for admission to public universities. Based on the score obtained in the ENEM, there is access to a unified selection system, in which

vacancies offered throughout the national territory are disputed. This system has the potential to make access to places more competitive, making access to courses and institutions of greater social prestige even more restricted and elitist (Nogueira et al., 2017). However, this Sisu effect may have been gradually counterbalanced by higher percentages of reserved vacancies.

In the following framework (Chart 1), we summarize the main changes that occurred in access to UFMG during the period under analysis. We highlight four moments in time: prior to the affirmative action policies, the bonus period, the progressive implementation of quotas, the full effect of the Quotas Act, with 50% of vacancies reserved.

Chart 1

Affirmative action policies for access adopted by UFMG

Periods	Affirmative Action	Target Audience
Until 2008	There was no affirmative action policy aimed at access.	-
2009 a 2012	Bonus - increase of 10% in the score of applicants who have studied the last seven years of Basic Education in public schools and 15% for those coming from public schools who declared themselves black.	Students from public schools, black students from public schools.
2013 a 2015	Vacancies reserve, gradually, per course and shift, according to Law No. 12,711/2012: implementation of 12.5%, 25% and 37.5%.	Graduates from public schools with sub-quotas divided into four modalities.
From 2016	Vacancies reserve of at least 50% per course and shift, according to Law No. 13,409/2016.	Graduates from public schools with sub-quotas divided into four modalities and, since 2017, into eight modalities, with the reserve for people with disabilities included.

SOURCE: *Elaborated by the authors, 2021.*

Methodological approach

We based our study on descriptive statistical analyses of changes in the percentage of entrants according to three variables: race, educational background, and family income, to identify the possible impact of different affirmative action models (bonus and vacancies reserve) on access patterns at UFMG. We used databases provided by the Office of the Pro Dean of Undergraduates of UFMG, which include demographic and socioeconomic information of enrolled students, derived from the completion of a questionnaire applied in the first enrolment.

Firstly, we analysed whether there was an increase in the access of students from public schools (state, municipal or federal), black students (self-declared black and mixed-race students) and low-income students (income brackets of up to 2 minimum wages and between 2 and 5 minimum wages) at UFMG. Furthermore, we investigate whether vertical inequalities have been reduced, observing whether the proportion of access for these groups has increased during the period. Although our discussion focuses on the moments when the policies were implemented at UFMG, we present, in this first part, data covering the periods before and after the adoption of affirmative action, covering the years 2005 to 2019. Therefore, we intend to investigate whether the racial, school, and economic profile of the students

before the bonus was implemented had been maintained for more years, as well as to verify whether the changes brought about by the quotas remained in the years following their full implementation.

Next, we investigate whether the actions also modified the forms of access according to the level of selectivity of the courses. Thus, we seek to answer the central question of this paper: if and how horizontal inequalities were altered by the policies, as well as if their different designs brought specific impacts on the patterns of internal inequalities in the institution. For this purpose, we adopted two strategies of analysis.

The first consists of using graphs with the percentages of black students and those from public schools in the undergraduate programs at UFMG, grouped by their level of selectivity. We classified the courses based on the performance obtained by Enem entrants, grouping them by median terciles of the scores obtained by approved applicants in the selection processes in each of the years analysed. The result is a classification of the courses into three groups: low, medium, and high selectivity. In 2008, the median of the performance obtained by those approved in Medicine positioned the course as having high selectivity, while Nursing was classified as having medium selectivity and Library Science as having low selectivity. This classification works as a proxy of the prestige and economic return of the courses offered by UFMG, as we consider that the more prepared applicants tend to go to the more profitable and higher status careers, raising the median grades of the entrants. By means of the graphs, we analyse the heterogeneity of the undergraduate courses, according to the percentage of black students or those concluding from the public-school network.

Our second strategy consists of a framework with the percentage distribution of students according to their characteristics and the level of selectivity of the courses. For this analysis, we disaggregated the race and school origin variables. For the former, we analysed the proportions of access of black and mixed-race students, while for the latter, the proportions of students coming from state, municipal, or federal schools. In this way, we investigate whether the possible impacts of affirmative action were different among these subgroups.

This study made some cut-outs that delimit our analysis. The information refers only to the campuses located in Belo Horizonte. In addition, the UFMG also has a campus located in the city of Montes Claros, the Institute of Agricultural Sciences ("Instituto de Ciências Agrárias" - ICA). Due to the profile of the courses offered at the unit, as well as the dynamics specific to the region and the city in which they are located, specific research dedicated to the changes in the socioeconomic profile of the ICA would be more appropriate. For this reason, we delimited our analysis to the units in the capital city of Minas Gerais.

It is worth noting that indigenous students are also targeted by the Quotas Act. Our option to focus on black students, in comparison with the percentages of white students, is due to two reasons. The first involves the difference between the criteria of the bonus policies and the Quotas Act, since the former did not include indigenous students. Thus, we analysed only variables related to social groups that both policies attended, enabling a better comparison between them. The second reason is related to the very low number of self-declared indigenous students during the period, hindering the evaluation of the impact of the Quotas Act for this group. The percentage of self-declared indigenous students varied between 0% and 0.02% among the different courses in most years. One possibility would be to group

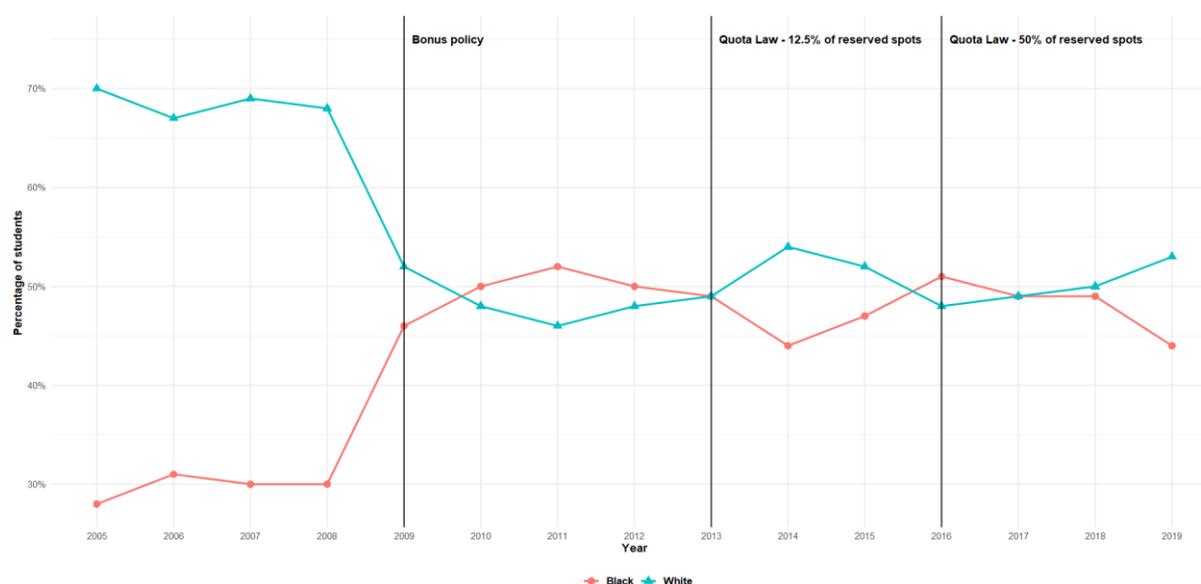
this contingent with that of black students, but we consider this to be inadequate, as they are affected by processes of inequality and social discrimination of different natures.

Changes in the general profile of students in the institution

We examine in this section whether and how the changes in the profile of entrants at UFMG over the last few years have occurred with the implementation of affirmative action policies. In the following three charts, we present the changes in the profile of entrants between 2005 and 2019 according to race, kind of school in which high school was graduated, and family total income. To guide the analyses, we demarcated four periods in the graphs: a first period in which there were no affirmative action policies in the institution; a second period in which there was a bonus policy; a third period of transition, in which the implementation of the quota policy began; and a fourth period in which quotas were fully implemented.

Chart 2

Change in the composition of entrants at UFMG, by race

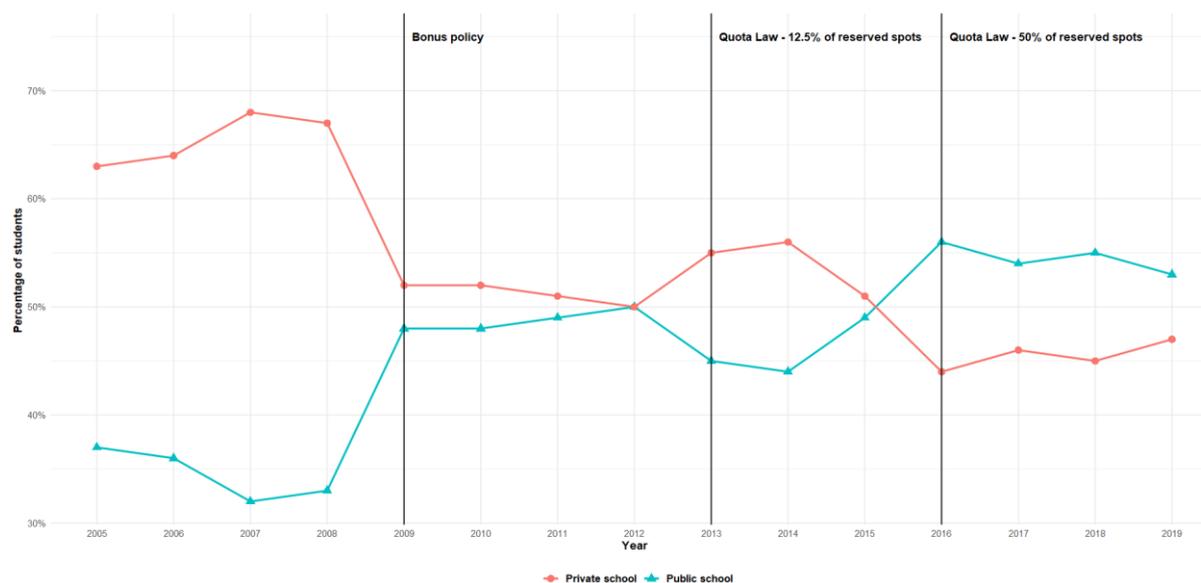


SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Starting with the race variable, we identified that between 2005 and 2008, before the implementation of the bonus policy, around 70% of the students were white. This situation changed in 2009, with the introduction of the bonus. Since then, blacks and whites began to occupy a similar percentage, approximately 50% of the university vacancies. In any case, it is worth noting some oscillations according to the periods. During the bonus period, black candidates entered the university in a higher proportion than whites for three consecutive years. This situation was reversed with the withdrawal of the bonus and its replacement by quotas that were initially much reduced, starting with 12.5% in 2012. The Sisu implementation that occurred in this period may also have contributed to an elitism of the university. From 2016, with the reserve of at least 50% of vacancies fully implemented, as determined by the Quotas Act, the percentages tended to a balance. However, a decrease in the number of black students in 2019 should be noted.

Chart 3

Change in the composition of entrants to UFMG, by high school background

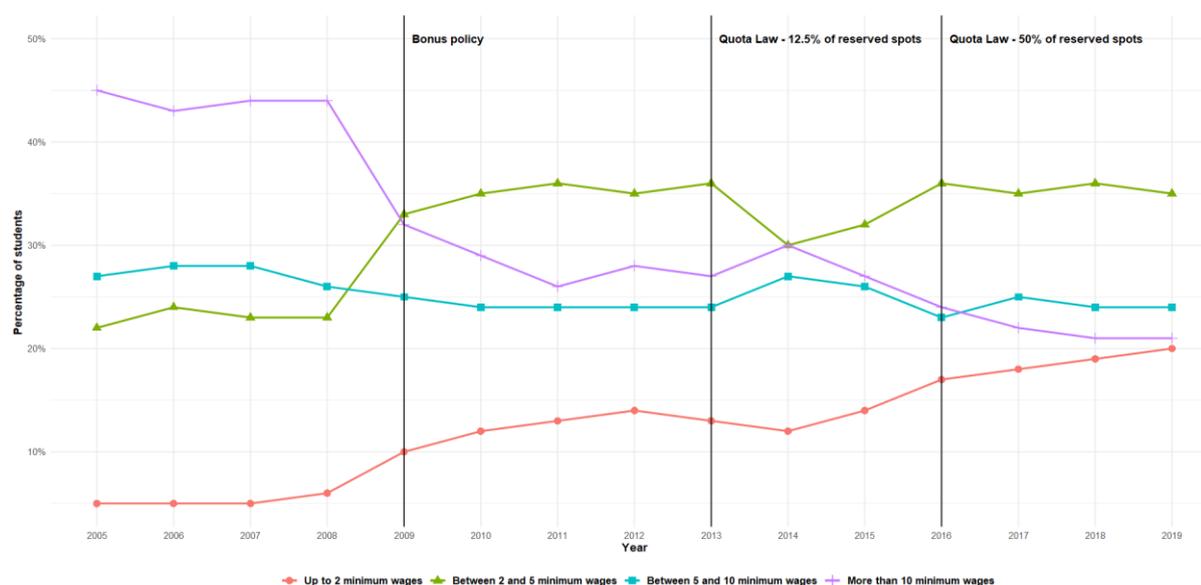


SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Regarding school background, graduates from public schools occupied between 60% and 70% of the places at UFMG before affirmative action was adopted. With the implementation of the bonus policy, this percentage initially drops to 52% and reaches 49.7% in 2012, the first year in which students from public schools are predominant among entrants. This advantage is reversed during the beginning of the implementation of quotas and with the adoption of Sisu. The establishment of the quotas of 50% from 2016 on, the public-school graduates assume a more significant predominance in the university, occupying about 55% of the total vacancies.

Chart 4

Change in the composition of entrants at UFMG, by family income



SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

By means of Chart 4, it is possible to observe that, before 2008, approximately 70% of the entrants in the institution declared family income above 5 minimum wages - from this group, about 45% had income above 10 wages. With the implementation of the bonus policy, the two highest income brackets reduced their participation significantly and the presence of students belonging to the two lowest income brackets increased substantially, especially those with family income between 2 and 5 salaries, the latter being the segment with the highest proportion of entrants in the institution since then.

Despite some variations, the participation of students from the two lower-income groups continued to rise slightly until 2013. During the initial period of quota implementation in 2014, there was a momentary interruption in this process, with an increase in the proportion of higher-income groups and a reduction in the presence of lower-income students. In the following year, the previous trend is resumed and there is greater participation of lower income brackets.

The graphs reveal the depth of the transformations that have occurred in the university since the adoption of affirmative action policies. Implemented in 2008, the bonus radically changed the profile of the students received by the institution, with increased presence of graduates from public schools, blacks, and low-income students. These changes have continued and even deepened with the adoption of quota policies.

However, the initial phase of the implementation of the Quotas Act reduced the number of students from groups covered by affirmative action in all cases. One reason for this is due to the institutional decision to start adopting quotas at the minimum level of reserved vacancies required by law and, at the same time, to completely suppress the bonus policy. The outcome was a setback, albeit a one-off one, regarding the entry of groups historically excluded from Brazilian higher education. This occurred because there was, in a certain way, the imposition of a ceiling of vacancies for these groups that had entered the university in greater proportion in previous years.

The exclusion is amplified with the adherence to Sisu in 2014. We verified that in 2012 the percentage of black students decreased from 50% to 44.5%, the percentage of students from public schools decreased from 50.3% to 43.8%, and the percentage of students with family income up to 5 minimum wages decreased from 48.5% to 42.6%. One of the possibilities is that this change is related to the combination between the "ceiling" of vacancies of the Quotas Act and the Sisu implementation - hypothesis also raised by Nonato (2018), when analysing the relationship between competition and selectivity in four UFMG courses, before and after the implementation of quotas. The reduced amount of quotas, along with the increase in competition for open positions caused by Sisu (Takahashi et al., 2016), may have contributed to this situation. In an analysis of the effects of the Quotas Act and the Sisu on the access of students from public schools, low-income and black or indigenous students in Federal Universities, Mello (2019) identified that the second program, by making access more competitive nationally, acts in reducing the inclusion of the target audience of affirmative action. Therefore, the results observed here may be associated with this process.

By increasing the number of reserved vacancies in 2015 and 2016, the target audience of affirmative action has become more representative in the university. It is important to highlight two groups that began to enter at a higher percentage than the level reached during the bonus policy: public school graduates and those from the lowest income bracket, up to two minimum wages.

Recently, there was a change that draws attention to the decrease in the number of self-declared black students that, between 2018 and 2019, drops from 48.8% to 44.7%. Disaggregating the

variable, we observe that the reduction occurred only among students self-declared as mixed race, which went from 39.7% to 33.2%, with the proportion of blacks having risen slightly, from 9.1% to 11.5%. It is worth noting that the reduction occurred mainly among those entering through affirmative action: while the percentage of students declared as mixed race, admitted through broad competition, fell from 25% to 22.3%, among those with quota, the proportion changed from 54.3% to 45%.

There is one possible explanation for this change: it is the effect of the implementation of complementary procedures to racial self-declaration by UFMG, initiated in 2019. The applicants for the quotas were required to write a substantiated letter, explaining the reasons why they declared themselves black, and it was also necessary that the application should be confirmed by hetero-identification panels². According to data analysed by Jesus (2021, pp. 75-76), it is verified that many applications were rejected by the commission, which may explain the results observed in our analysis. The fact that the reduction occurred mainly among quota-holders self-declared as mixed race reinforces this hypothesis, considering that this is a group more subject to variations regarding the self- and race hetero-identification. However, this is a hypothesis that requires further study, as it may be the result of other factors.

At UFMG, we have seen that the racial, educational, and economic profile of its students has changed profoundly with the implementation of the bonus policy and, subsequently, the vacancies reservation policy. However, considering that the expansion of opportunities for access to higher education may be accompanied by the maintenance of inequalities between courses, we will argue, hereafter, how affirmative action had repercussions on the composition of the different undergraduate courses at the university.

Changes in horizontal inequalities in the UFMG context

The following series of charts provides an overview of the composition of the student body of UFMG courses at the four moments we consider key to understanding the changes that have occurred in the institution, to analyse how internal inequalities have changed over the years. Of the three variables considered in this article, we selected two for this analysis: race and school type of origin.

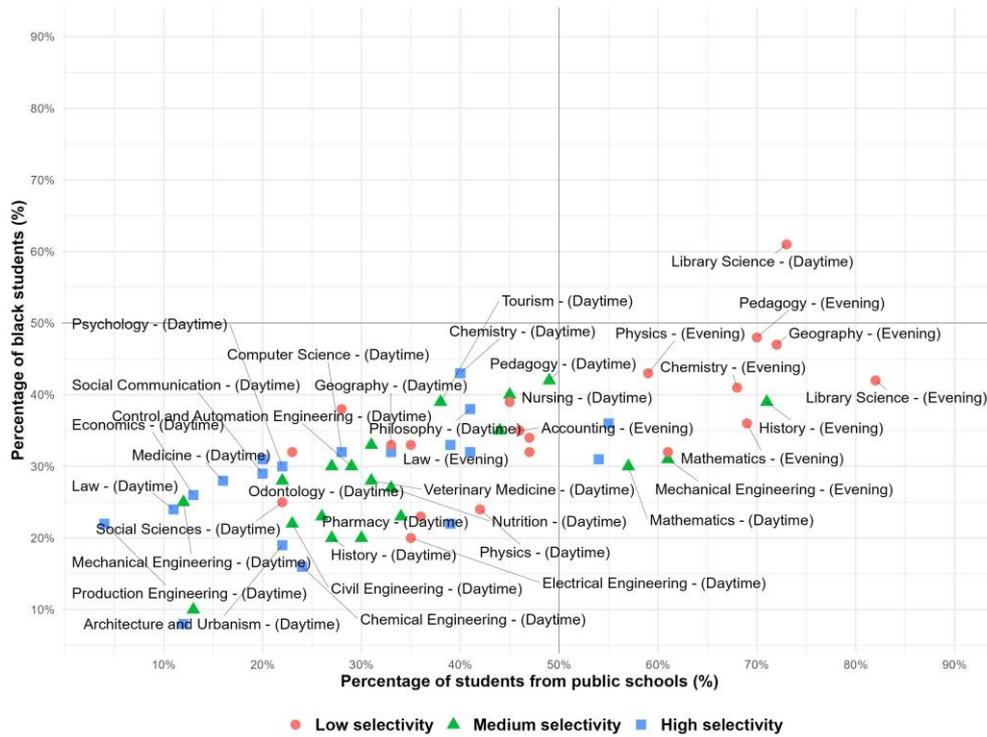
The charts allow us to see how the percentage of black entrants and graduates from public schools varied in the different courses over the four periods. They also make it possible to perceive changes in the level of internal inequality in the institution. According to each year considered, it is observed that the courses are more or less concentrated in the graphs, which indicates that they are more or less similar from the point of view of their racial and school composition. Thus, considering the horizontal axis, the courses above the 50% line are characterized by a greater presence of black students. When analysing the vertical axis, we observe that on the points to the right of the 50% line, the courses in which most students enrolled completed high school in the public school system are positioned. We first display all the graphs, and then discuss them in detail³.

² For a historical analysis, planning and experience of the implementation of racial hetero-identification procedures at UFMG, read Jesus (2021).

³ Not all the names of the courses offered at UFMG are shown in the charts due to the space for viewing the information in the graphs.

Chart 5

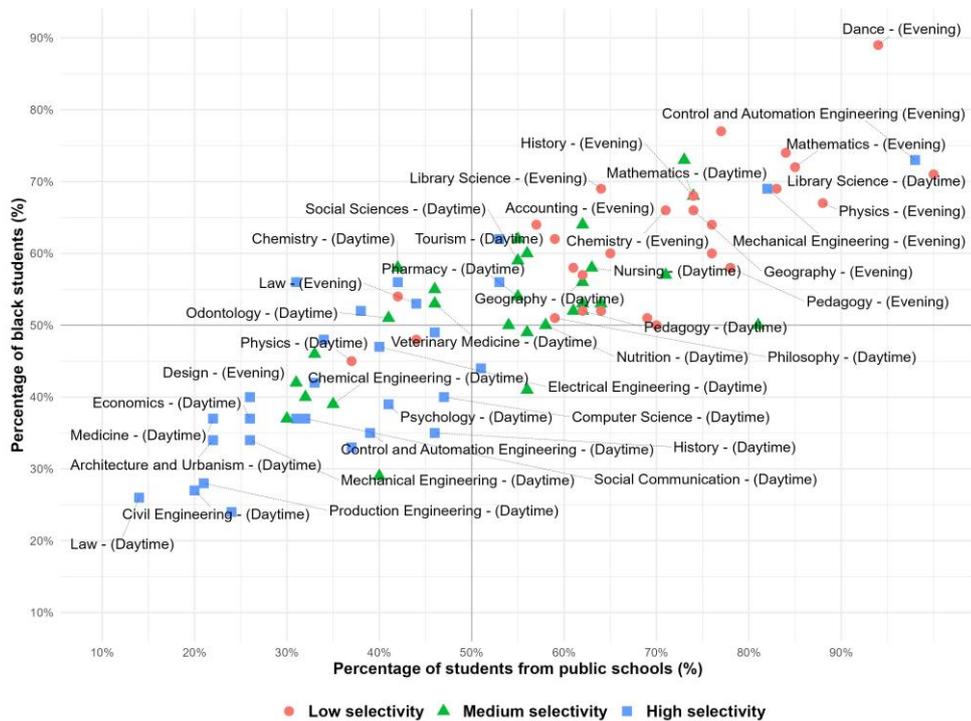
UFMG undergraduate composition in 2008, by race and school background



SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Chart 6

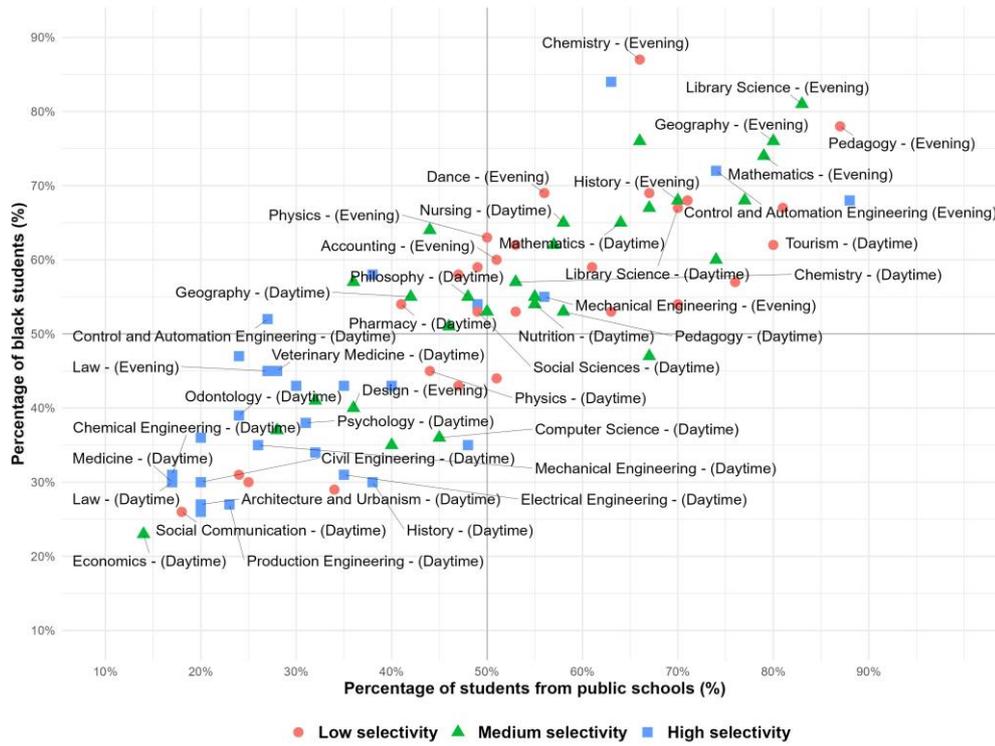
UFMG undergraduate composition in 2012, by race and school background



SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Chart 7

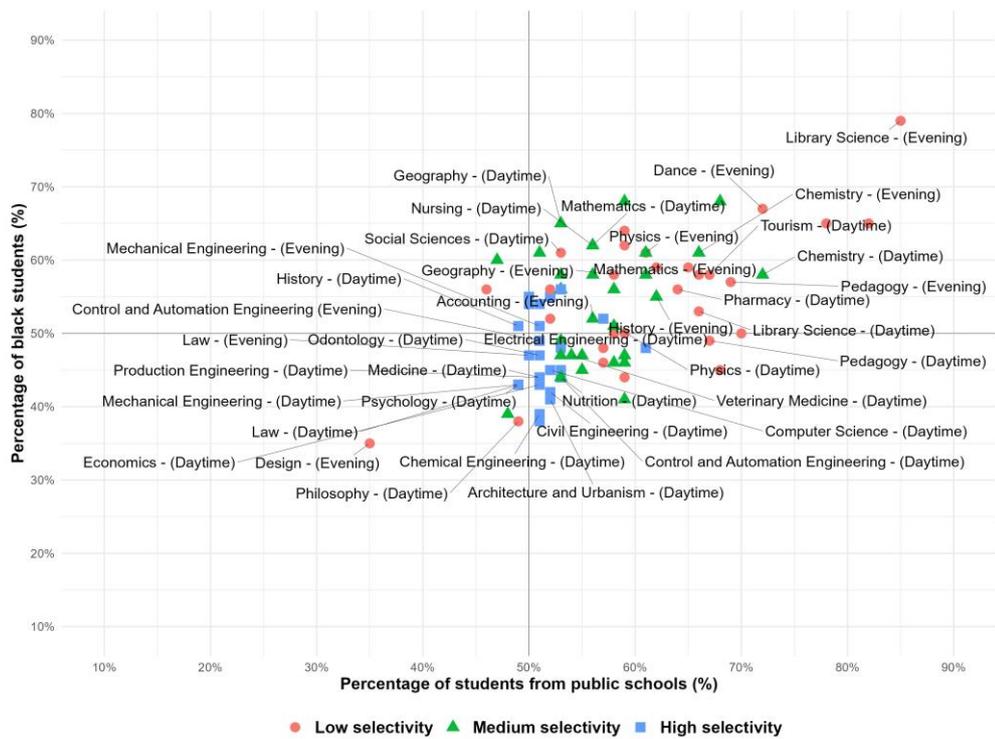
UFMG undergraduate composition in 2013, by race and school background



SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Chart 8

UFMG undergraduate composition in 2016, by race and school background



SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

The data shows that the bonus policy has considerably changed the composition of many courses in the institution. Before the bonus policy, in 2008, only the undergraduate degree in Library Science, in the daytime period, was composed of more than 50% black students. In 2012, the quantity of courses with this characteristic increases. However, when we observe the classification of selectivity, we realize that most of the courses that began to present a greater proportion of black students had low selectivity - a situation that remains in the first year of adoption of the Quotas Act in 2013. In other words, although it has been effective in broadening access to the institution, the entry offered to the target public of affirmative action was more restricted to less selective courses. From the beginning of the implementation of the bonus policy until the first year of the Quotas Act, the institution was basically characterized by two groups of courses, according to the variables used: those with a higher proportion of blacks and public-school graduates, mostly of medium or low selectivity, and those that were mostly composed of whites and students from public schools, characterized by higher selectivity.

In 2016, this situation changed significantly with the full implementation of the 50% minimum reserved vacancies established by the Quotas Act. Although less selective courses continue to be over-represented by black students or students from public schools, with the reservation of 50% of the vacancies, there is greater balance among the institution's undergraduate programs - the dots are closer to the centre of the chart. The undergraduate courses classified as highly selective now have a higher proportion of black students, and none show a percentage below 30% of this group.

The policies' effects on undergraduate degrees can be shown by analysing what occurred in specific courses. As an example, more selective courses such as Law (LLB) and Civil Engineering were little modified by the bonus policy. Only with the reservation of vacancies were their racial and school profiles altered. As shown in the charts for 2008 and 2012, in the LLB degree, the percentage of black students increased from 24.4% to 26.8% and in Civil Engineering from 22.2% to 26.8%. Regarding the percentage of students from public schools, in LLB the percentage increased from 10.6% to 13.5% and in Civil Engineering from 23% to 20%. With the quotas fully implemented in 2016, the percentage of black students in LLB degree reached 42.8% and in Civil Engineering 48.9%. The proportion of students from public schools reaches 50% in LLB degree and 51.6% in Civil Engineering.

Furthermore, less selective courses, such as Mathematics and Physics, were greatly modified by the bonus policy. Considering the years 2008 and 2012, it is observed that the percentage of entrants in Mathematics who declared they were black increased from 29.8% to 64% and in Physics from 25.6% to 56.4%. Among students from public schools, in Mathematics the increase was from 57.4% to 69.3% and in Physics from 40% to 61.5%. With the quotas, this pattern changes little. In 2016, the percentage of black students entering the mathematics course was 61.5% and in Physics 51.4%, while the proportion of students from public schools admitted to the first course was 56.4% and, in the second, 57.5%.

Therefore, it is important to note that despite this general trend, certain highly selective undergraduate programs, such as Medicine and Dentistry, have democratized access through the bonus policy. In the first course, between 2008 and 2012, the proportion of black students increased from 28.3% to 37% and of students from the public network from 15.8% to 22.3%. In the second, considering the same years and the same variables, the changes were from 28.3% to 50.8% and from 22.1% to 41.9%. Anyway, after 2016, these percentages increase, especially in the Medicine course, in which 44% of black

students and 51% of students from public schools entered, and in Dentistry, respectively, 47% (slightly less than in 2012) and 51%.

Therefore, the advances achieved by the Quotas Act are noteworthy. In addition to increasing access to UFMG, this policy has contributed to the entry of black students and students from public schools into the most selective courses, reducing internal inequalities within the university. However, despite this progress, one cannot ignore the existing heterogeneity within the target public served by affirmative action, which may be reflected in inequalities in the way these students benefit from these policies.

The educational literature shows that self-declared black students tend to accumulate greater educational disadvantages when compared to mixed-race students (Alves, 2020). With regard to school background, studies indicate that high school students from federal schools exhibit higher socioeconomic status compared to those enrolled in state or municipal schools (Alves & Soares, 2009). In addition, these students were over-selected by the admission processes to these institutions, also benefiting from the better infrastructure and qualification of the teaching staff of these establishments. It is then necessary to investigate how these differences between students have repercussions on access to university.

We assessed this issue through the data in tables 1 and 2, which present in a detailed way the distribution of the three racial subgroups, white, black, and mixed race, among the courses of low, medium and high selectivity. The same is done in relation to the three subgroups of school background, private, state or municipal and federal schools. By subtracting the percentage of students in highly selective courses from the percentage of those with low selectivity (the same operation having been done in relation to those of medium with those of low selectivity), we have an indication of changes, or not, in the access patterns of these students. In this sense, positive differences, above zero, indicate greater representation in courses of high or medium selectivity, while negative differences, below zero, indicate greater representation in courses of low selectivity.

Table 1

Percentage distribution of students by declared colour/race and by course selectivity.

Variable	Selectivity of course	Entrance year															
						Bonus				Quotas Act Implementation			Quotas Act 50%				
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
White	High selectivity	72.8	67.9	69.2	70.3	59.1	53.3	56.1	58.8	59.7	62.4	57.3	53.5	53.1	52.7	56.4	
	Medium selectivity	71.3	71.3	71.5	70.1	51.2	48.4	42.6	45.2	42.5	49.4	51	45	49.1	48.3	52.8	
	Low selectivity	65.8	59.1	63.1	62.6	42.1	38.5	38	37.2	41	47.6	45.5	43.2	43.8	47.8	49.5	
	High-Low difference	+7	+8.8	+6.1	+7.7	+17	+14.8	+18.1	+21.6	+18.7	+14.8	+11.8	+10.3	+9.3	+4.9	+6.9	
	Medium-low difference	+5.5	+12.2	+8.4	+7.5	+9.1	+9.9	+4.6	+8	+1.5	+1.8	+5.5	+1.8	+5.3	+0.5	+3.3	
Mixed Race	High selectivity	22.5	26.6	25.5	24.2	33.8	37.1	36	33.7	32.2	32.5	36.3	39.1	38.5	39.4	32.3	
	Medium selectivity	24.4	24.1	23.5	25	39.3	42.2	44.3	41.8	43.3	41	40.3	43.7	39.5	41.1	33.7	
	Low selectivity	26.6	30.4	27.9	28.5	41.3	45.3	42.7	43.7	41.6	38.7	41.9	42.7	40.9	38.7	34	
	High-Low difference	-4.1	-3.8	-2.4	-4.3	-7.5	-8.2	-6.7	-10	-9.4	-6.2	-5.6	-3.6	-2.4	+0.7	-1.7	
	Medium-low difference	-2.2	-6.3	-4.4	-3.5	-2	-3.1	1.6	-1.9	+1.7	+2.3	-1.6	+1	-1.4	+2.4	-0.3	
Black	High selectivity	3	3.9	3.2	3.8	5.3	7.8	6.6	6.6	6.5	4.1	5.3	6.7	6.9	6.6	9.1	
	Medium selectivity	2.9	3.1	3.7	3	8.4	7.8	11.7	11.3	12.3	8.1	7.6	10.3	9.9	9.2	11.5	

Low selectivity	5.1	6.9	6.5	7.3	12.5	12.3	15.8	15.6	13.6	11.7	10.9	12.6	14	12.5	14.6
High-Low difference	-2.1	-3	-3.3	-3.5	-7.2	-4.5	-9.2	-9	-7.1	-7.6	-5.6	-5.9	-7.1	-5.9	-5.5
Medium-low difference	-2.2	-3.8	-2.8	-4.3	-4.1	-4.5	-4.1	-4.3	-1.3	-3.6	-3.3	-2.3	-4.1	-3.3	-3.1

SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

Concerning the declared colour/race, we identified significant disparities. Throughout the entire period examined, the concentration of white students in the most competitive courses remained, while mixed race and black students tended to have greater representation in courses of low and medium selectivity. However, it is noted that when evaluating the difference between high and low selectivity, black entrants who declared themselves as being mixed race benefited proportionally more from the reserved vacancies. As of 2016, the difference in representation of this group between low and medium or high selectivity courses is significantly reduced. Among students who declared themselves black, there are few changes in the disparities during the quota period.

Table 2

Percentage distribution of students by school background and by course selectivity

Variable	Selectivity of course	Entrance year															
		Bonus								Quotas Act Implementation				Quotas Act 50%			
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Private network	High selectivity	69.7	64.6	70.6	74.2	61.2	60.2	66.5	65.5	71.4	67.1	57.4	48.7	48.5	48.1	49.9	
	Medium selectivity	67.5	70.5	75.5	67.5	53.2	52.5	50.1	46.5	45.8	54.5	52.7	43.7	46.5	46.2	48	
	Low selectivity	50.8	52	54.2	51.9	36	39.1	32.5	31.6	42.7	43.7	42.4	38.8	40.5	40.4	39.6	
	High-Low difference	+18.9	+12.6	+16.4	+22.3	+25.2	+21.1	+34	+33.9	+28.7	+23.4	+15	+9.9	+8	+7.7	+10.3	
	Medium-low difference	+16.7	+18.5	+21.3	+15.6	+17.2	+13.4	+17.6	+14.9	+3.1	+10.8	+10.3	+4.9	+6	+5.8	+8.4	
Federal network	High selectivity	12.7	15.7	12.6	9.6	14.8	11.9	15.2	15.3	13.9	18.9	23.4	24.5	24.3	24.3	22.5	
	Medium selectivity	11.6	11.7	9.2	10	10.8	10.2	8	7.2	6.7	13.2	13.7	13.7	15	14.4	14.7	
	Low selectivity	7.4	6.4	5.8	10.6	5.8	4.4	3.3	3.9	4.6	7.4	7.2	7	8	9.3	9.3	
	High-Low difference	+5.3	+9.3	+6.8	-1	+9	+7.5	+11.9	+11.4	+9.3	+11.5	+16.2	+17.5	+16.3	+15	+13.2	
	Medium-low difference	+4.2	+5.3	+3.4	-0.6	+5	+5.8	+4.7	+3.3	+2.1	+5.8	+6.5	+6.7	+7	+5.1	+5.4	
State or municipal network	High selectivity	17.6	19.6	16.7	16.2	24	27.9	18.3	19.1	14.8	14	19.2	26.8	27.2	27.7	27.6	
	Medium selectivity	20.9	17.8	15.3	22.5	36	37.3	41.9	46.2	47.5	32.3	33.6	42.6	38.5	39.4	37.3	
	Low selectivity	41.8	41.5	40	37.5	58.1	56.4	64.1	64.6	52.7	48.9	50.4	54.2	51.5	50.3	51.1	
	High-Low difference	-24.2	-21.9	-23.3	-21.3	-34.1	-28.5	-45.8	-45.5	-37.9	-34.9	-31.2	-27.4	-24.3	-22.6	-23.5	
	Medium-low difference	-20.9	-23.7	-24.7	-15	-22.1	-19.1	-22.2	-18.4	-5.2	-16.6	-16.8	-11.6	-13	-10.9	-13.8	

SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

The differences observed between the groups for the type of public school are even wider. Graduates from private and federal schools enter in greater proportion in the highest selectivity courses, while their peers from state or municipal schools, for the low selectivity degrees. Until 2014, students coming from Federal school network had smaller differences in percentages in courses of high and low selectivity than those entering from the private network. After the Quotas Act, their positive differences increase and even exceed the latter group, that is, they are predominantly directed towards the highly selective courses.

Perhaps this situation is related to the design of the Quotas Act, which requires that only high school education must have been attended in public schools, while the bonus policy required the last seven years in public institutions. As a result, federal school graduates, who tend to have greater educational and economic advantages, and have public schools with better infrastructure and teaching conditions, increased their presence in high-selectivity courses. It is important to highlight here that while federal schools, in 2019, made up only 3% of high school enrolments in Brazil (INEP/MEC, 2019), at UFMG students from these networks represent 16.2% of enrolments, and in high-selectivity courses, 22.5%. In comparison, students from state schools, which are 83.9% of high school enrolments in Brazil, occupy 37.5% of the total places at UFMG and only 27.6% of those in the highly selective degrees.

Finally, we present in Table 3 the differences in the distribution between the courses, this time considering the total family income.

Table 3
Percentage distribution of students by family income and course selectivity

Variable	Selectivity of course	Entrance Year															
						Bonus				Quotas Act Implementation			Quotas Act 50%				
		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
Up to 2 minimum wages	High selectivity	4.3	3.6	4.3	3.8	6.3	8.2	5	4.7	5.9	7	8.4	11.1	12.6	13	14.7	
	Medium selectivity	3.3	3.5	3.3	6.1	8.6	9.6	11.8	14.7	15.4	11.5	13.5	18.3	18	19.9	21.4	
	Low selectivity	7.7	8.7	10.3	9.6	19.5	21	25.1	25.7	20.7	19.7	21.5	24.7	25.4	26.4	27.2	
	High-Low difference	-3.4	-5.1	-6	-5.8	-13.2	-12.8	-20.1	-21	-14.8	-12.7	-13.1	-13.6	-12.8	-13.4	-12.5	
	Medium-low difference	-4.4	-5.2	-7	-3.5	-10.9	-11.4	-13.3	-11	-5.3	-8.2	-8	-6.4	-7.4	-6.5	-5.8	
Between 2 and 5 minimum wages	High selectivity	15.9	22.1	18.6	17.7	26.4	30	24.3	24	25.4	22.4	24.8	30.3	30	32.4	29.6	
	Medium selectivity	21.2	19.1	18.1	23	33.2	34.9	42.9	38.7	41.4	31.8	34.4	37.8	38.7	38.1	36.1	
	Low selectivity	30.7	33.4	34.8	33.6	41.8	42	44.8	44.7	44.3	39	40.3	41.1	40.6	39.4	39.7	
	High-Low difference	-14.8	-11.3	-16.2	-15.9	-15.4	-12	-20.5	-20.7	-18.9	-16.6	-15.5	-10.8	-10.6	-7	-10.1	
	Medium-low difference	-9.5	-14.3	-16.7	-10.6	-8.6	-7.1	-1.9	-6	-2.9	-7.2	-5.9	-3.3	-1.9	-1.3	-3.6	
Between 5 and 10 minimum wages	High selectivity	26	27.3	26.7	23.4	23.8	25.5	27.8	26.9	27.7	26.5	26.1	25	26.4	25.3	25.7	
	Medium selectivity	27.1	27.6	28.3	29.4	26.6	25.7	25.3	25.1	24	30.3	29.1	24.2	25.6	25.2	23.2	
	Low selectivity	27.2	28.5	28.3	27.6	23.1	20.8	19.3	18.4	18.4	25.8	23.9	20.9	21.8	21.7	21.2	
	High-Low difference	-1.2	-1.2	-1.6	-4.2	+0.7	+4.7	+8.5	+8.5	+9.3	+0.7	+2.2	+4.1	+4.6	+3.6	+4.5	
	Medium-low difference	-0.1	-0.9	0	+1.8	+3.5	+4.9	+6	+6.7	+5.6	+4.5	+5.2	+3.3	+3.8	+3.5	+2	
Up to 10 minimum wages	High selectivity	53.8	47	50.4	55.1	43.5	36.2	42.9	44.5	41.1	44.1	40.6	33.6	31	29.4	30	
	Medium selectivity	48.4	49.9	50.3	41.5	31.7	29.8	20	21.5	19.1	26.4	23	19.7	17.7	16.8	19.3	
	Low selectivity	34.4	29.5	26.6	29.3	15.7	16.2	10.8	11.2	16.6	15.5	14.4	13.3	12.2	12.5	12	
	High-Low difference	+19.4	+17.5	+23.8	+25.8	+27.8	+20	+32.1	+33.3	+24.5	+28.6	+26.2	+20.3	+18.8	+16.9	+18	
	Medium-low difference	+14	+20.4	+23.7	+12.2	+16	+13.6	+9.2	+10.3	+2.5	+10.9	+8.6	+6.4	+5.5	+4.3	+7.3	

SOURCE: Elaborated by the authors, based on data from Prograd/UFMG, 2021.

As expected, the differences are also accentuated according to income, as we observe that entrants from the highest income bracket tend to be directed in greater proportion to courses of higher selectivity. On the other hand, especially from 2016, with the quotas, the entrants of the two lower income brackets increased their participation in courses of higher selectivity, especially among students with family income of up to 2 minimum wages.

Finally, it is worth noting that for all the variables analysed, it is possible to see, from a different perspective, that the bonus period implied an overall inclusion of low-income, black, and mixed-race students from state and municipal schools, but concentrated in the low-selectivity courses. Thus, the negative differences in the percentages tended to be greater mainly between 2009 and 2012, continuing at a very high level in the first years of quota implementation. With the increase in the number of reserved places, these differences are reduced, indicating more equal access to the university.

FINAL CONSIDERATIONS

We analyse comparatively the effects of social inclusion of two affirmative action policies adopted by UFMG: the bonus system, which consisted in the granting of an additional mark on the applicants' performance; and the model of reserve vacancies, implemented after the approval of the Quotas Act. We investigated if and how these policies were able to broaden the access of students from public schools, black or low-income, also considering the forms of this access according to the internal hierarchy of the courses of the institution - understood by the level of selectivity of the degrees.

The bonus system was effective in starting a process of democratisation of access to university. Before, UFMG was a predominantly white institution, composed of students who came from the private network and whose income was very high. Although the bonus has expressively modified the general profile of the students at the university, the advances have been small in reducing internal inequalities at UFMG. Thus, during the validity period of this policy, the access of its target audience was largely restricted to the courses of less prestige and professional return.

However, the policy of reserved vacancies allowed the opportunities to be broadened in a more equitable way, i.e., the access to the different university courses became less unequal. As we have noted, because the implementation of the quotas was based on the minimum percentage required by law, there was, at first, a setback in the process of social inclusion initiated by the bonus policy. This momentary setback may have been enhanced by the Sisu in 2014, because the system tends to make the competition for vacancies fiercer. However, with the increase in reserved vacancies in subsequent years, the inclusion levels achieved with the bonus were recovered and even surpassed, with greater inclusion of students historically excluded from higher education in highly selective courses in the institution.

In addition, we investigated whether the effects of inclusion provided by the two models of affirmative action differed when considering the heterogeneity of the groups served by the policies. We observed that with the quotas, black students who declared themselves to be mixed race and those who concluded high school in federal schools accessed, in greater proportion, highly selective courses when compared with their self-declared black peers or those who concluded high school in state or municipal schools.

In summary, the bonus policy has affected the odds of access at UFMG, thereby lowering vertical inequalities significantly, but maintaining horizontal inequalities, since access on behalf of the target audience has occurred primarily in low-selectivity courses. Meanwhile, the quota policy, by reserving a minimum of 50% of vacancies per course, has allowed the maintenance of a global equalization like the bonus policy, while at the same time it has reduced more significantly the horizontal inequalities of the institution.

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DECLARATION OF CONFLICT OF INTEREST

The authors declare that there is no conflict of interest with this article.