

# Social quotas, affirmative actions, and dropout in the Business field: empirical analysis in a Brazilian federal university\*

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## ABSTRACT

Rawls' Justice Theory establishes that a fair society must allow less advantaged people to have access to the benefits of social cooperation. In this line of thought, the affirmative actions established by Law 12,711/2012 aim at promoting inclusive education in Higher Education. Evaluating the performance of affirmative actions, specifically their impact on the dropout level, has been a theme of debate in scientific literature. Besides representing a personal frustration, dropout is associated with significant academic, social, and economic losses. In this context, this research aims at analyzing whether the adoption of affirmative actions, as established by Law 12,711/2012, affects the dropout rates of students in Accounting Sciences and other courses in the Business field. The study was conducted through documentary research in a Brazilian public Higher Education institution (HEI). The results of binomial analysis showed that out of the 2,418 students who entered in the first semester of 2013, 520 (22%) dropped out from university until the end of the first semester of 2014. It was found that the dropout rate among entrants in the Business field, either through broad competition or using the system of quotas, was 29%. In the course of Accounting Sciences, the dropout rate among entrants admitted through broad competition was 25% and using the system of quotas it was 23%. Contrary to other investigations, this study found that there is no statistical difference between the dropout rates among entrants in the Business and Accounting Sciences fields through broad competition and quotas, suggesting that affirmative actions do not affect significantly the dropout rates.

**Keywords:** affirmative actions, social quotas, dropout, entrants, accounting.

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## 1. INTRODUCTION

For some time the social struggles and their respective achievements are observed in the Brazilian daily life, among which one stands out in the educational environment, i.e. the allocation of 50% of the vacancies provided by federal institutions of Higher Education (FIHEs) and of High School technical education to certain social classes, such as Afro-descendants and hyposufficient individuals. According to Bezerra and Gurgel (2012), these achievements resulted from inclusive education programs and they “represent social mechanisms of public policies that seek to promote conditions of equality and opportunity in relation to the Brazilian Higher Education” (p. 96).

According to Velloso (2009), the early quotas in the selection exams in Brazilian public universities emerged in 2003, initially at the Rio de Janeiro State University (UERJ) and at the University of Brasília (UnB), and they were aimed at students coming from public schools, black-skinned and Indian people. In the following years, several public Higher Education institutions (HEIs) began to take affirmative actions in selection processes. The survey conducted by Daflon, Feres, and Campos (2013) found that, out of the 96 public universities, 70 had adopted some kind of affirmative action. The study also revealed that students from public schools were the main targets of these policies, i.e. the main criterion adopted was the socioeconomic status of the family. However, with the enactment of Law 12,711/2012, the system of quotas was standardized and it was adopted on a mandatory basis in all FIHEs and High School technical education institutions.

Although these policies seek ways to promote equality for certain disadvantaged social groups (Guarnieri, 2008), affirmative actions and social programs of quotas in the federal universities still remain as a controversial issue. In this line, Velloso (2009) states that “criticism of allocation of the vacancies is based on the argument that deficiencies in the previous educational level of holders of quotas might consist in a threat to the quality of university education” (p. 52). Under this argument, McCowan (2007) recognizes the obstacle of reforming Higher Education without considering the primary and secondary levels, i.e. it is hard that a university system corrects the inequalities that took place over the previous years of school education. Nevertheless, the same author stresses that such a difficulty does not remove any responsibility of Higher Education by placing the burden of their inequalities in previous levels. So, McCowan (2007) concludes that in Higher

Education there may be significant changes regarding education, but these changes will experience more success if the reform occurs throughout the educational system.

In this regard, Daflon et al. (2013) reveal that “the percentage of vacancies allocated to affirmative action decreases as the classification (assigned by the INEP) of the university increases” (p. 321). “Although some universities with more prestige adopt affirmative action programs, they seem to embrace more enthusiastically the inclusion goals” (p. 321). Another argument used to criticize the adoption of quotas and/or affirmative action refers to the potential increase of dropout rates among students who entered through the system of quotas, something which could also negatively impact the system itself (Velloso, 2009) and consequently in Higher Education quality. However, this argument needs to be investigated, because dropout rates in public and private institutions are associated with considerable social, academic, and economic losses. These losses end up burdening the whole society, as citizens pay, directly or indirectly, for their own education and their relatives’ (Cunha, De Luca, Lima, Cornacchione & Ott, 2015). So, if affirmative actions aim to increase the entry possibilities of groups historically excluded, there is a need to check whether they will also remain in the school environment.

Studies reveal that leaving the university (dropout) usually occurs in the early periods of the course, and in the first year dropout tends to occur with more intensity within the first semester (Bardagi & Hutz, 2009; Palma, Palma & Brancaloni, 2005; Prado, 1990; Ribeiro, 2005; Vieira & Miranda, 2015). Furthermore, dropout rates usually vary between public and private institutions. However, according to Cunha et al. (2015), the Brazilian figures do not differ a lot from international data, and the average rate of Brazilian institutions was around 22% between 2000 and 2005 (public institutions: 12%; private institutions: 26%). Specifically in the group consisting of Social Sciences, Administration, and Law, the average dropout rates were higher, as they reached 25% within the same period (Silva, Motejunas, Hipólito & Lobo, 2007).

Despite the fact that some studies on dropout in Higher Education have already been carried out (Baggi & Lopes, 2011; Cunha et al., 2015; Cunha, Nascimento & Durso, 2014; Furtado & Alves, 2012; Montmarquette, Mahseredjian & Houle, 2001; Prim & Fávero, 2013; Silva, 2013; Silva et al., 2007; Velloso & Cardoso, 2008), just a few of them depict the relationship between the dropout rate and affirmative actions regardless of the cause, such

as Cardoso (2008) and Bezerra e Gurgel (2012), especially in the Business field.

Silva et al. (2007) pointed out that the fields of Social Sciences, Business, and Law were associated with higher dropout rates. This may be due to the students' profile in the course of Accounting Sciences and Administration, for instance. Most students in these courses need to combine work and study, something which can affect motivation and dropout. The fact that these courses are among the largest number of college enrollments in Brazil [Ministério da Educação. Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP), 2014] reinforces the need to evaluate the relationship between dropout and affirmative actions.

Given the above, we sought to answer the following research question: does the adoption of affirmative actions, as established by Law 12,711/2012, affect the dropout level in Accounting Sciences and other undergraduate courses in the Business field? Thus, the main aim of the research consists in examining whether the adoption of affirmative actions, as established by Law 12,711/2012, affects the dropout rates among students in Accounting Sciences and other courses in the Business field.

The data analyzed refer to dropout rates in the first and second semesters of 2013 and to the first semester of 2014 among students who began studies in early 2013 in a Brazilian public HEI. It is worth highlighting that, since 2013, the HEI addressed in the study started

adopting the system of quotas in its selection procedures by virtue of Law 12,711/2012 concomitantly with its former Affirmative Action Program (AAP). The existence of a significant number of entrants within the period under study through the AAP and also the modalities introduced by this law justifies studying the institution.

It is noteworthy that, for the purposes of this research, we mean by Business field the undergraduate courses in Administration, Accounting Sciences, Economics, Information Management, and International Relations.

Therefore, the relevance of this research is based on the analysis of the influence of various entry modalities (broad competition, social quotas, AAPs) on dropout rates in Higher Education. It is understood that greater knowledge of this relationship, as well as the monitoring of results by adopting social quotas in Brazilian HEIs, it is necessary to grasp the similarities and differences between the institutions with regard to dropout. With more information provided by various studies we can assimilate the successes and failures of actions taken, thus making changes when deemed necessary.

So, through the data and notes provided by this research, we hope to contribute to the development of public policies for inclusive education, demonstrating whether the affirmative actions adopted now, especially those concerning social quotas, are related to the permanence of students and the completion of their respective courses.

## 2. THEORETICAL FRAMEWORK

### 2.1 Public Policies for Inclusive Education

The 1988 Federal Constitution (Brasil, 1988), in item III of Article 3, provides that one of the key objectives of the Federative Republic of Brazil is eradicating poverty and marginalization, as well as reducing social and regional inequalities, among them making access to Higher Education courses easier for certain disadvantaged social groups, such as black-skinned and low-income people. One of the tools employed to reduce these inequalities is the Statute of Social Equality, established in 2010 by Law 12,288/2010, which in item VII of Article 4 provides that

[...] the participation of the black population, in a condition of equal opportunity, in the economic, social, political, and cultural life of the country will be promoted primarily through [...] VII – implementation of affirmative action programs aimed at addressing ethnic inequalities concerning education, culture, sports, and leisure, health, safety, work, housing, mass media, public funding, access to land and justice, and others.

Regarding the AAPs, the sole paragraph of Article 4 of the Statute of Social Equality prescribes that they “will consist of public policies aimed at remedying social distortions and inequalities and the other discriminatory practices adopted, in the public and private spheres, during the process of social formation in the country.”

In compliance with the provisions of the Magna Carta and the other infra-constitutional legislations, at the state and/or federal levels, some HEIs, such as the UERJ, adopted systems of quotas in their selection process for the entry of students, such as those aimed at Afro-descendant applicants, the so-called racial quotas (Amaral & Mello, 2012). In addition to these, other legal guarantees have been instituted since the enactment of Law 12,711/2012, which provides for the admission to federal universities and federal institutions of High School technical education, constituting one of the main public policies in the educational sector.

The law mentioned above guarantees that, since 2013, 50% of vacancies in each course and period of the day, in federal universities and federal institutions of High School technical education, are allocated to students who attended High School fully in public institutions, in regular courses or education for youth and adult individuals.

Within the first four years after the enactment of Law 12,711/2012, the period to deploy the system of quotas, students can apply both in the modality of quotas and through broad competition. However, in the end of these four years, each HEI will determine whether the candidate can enroll in only one modality or in both of them (INEP, 2014). It is noteworthy that the institutions that already had systems of quotas can keep their programs provided that they comply with the requirements of Law 12,711/2012, allocating a part of the vacancies offered, in each course and period of the day, to applicants who are holders of quotas (Brasil, 2012).

As noticed for some time, several public policies of equality and social justice have been formulated, something which led the AAPs to becoming the theme of discussions about access and permanence in Higher Education as a way to alleviate certain social inequalities (Amaral & Mello, 2012; Daflon et al., 2013). In this way, the adoption of the system of quotas to allow access to Higher Education is not enough to guarantee the permanence of the beneficiaries of these policies in the school environment, therefore, there is a need to examine whether the entry through affirmative quotas or actions have any influence on the dropout rates in Higher Education, above all in relation to the entry through broad competition.

## 2.2 Equity in Access to Higher Education

The meaning of the term equity is close to the term equality, but the idea of a fair distribution is not necessarily an equal distribution. Thus, equity does not mean equal treatment, but equal opportunities (McCowan, 2007).

In this way, the increased number of enrollments in Higher Education in Brazil in recent years has been very important from the viewpoint of access to this educational level. According to data from the Brazilian National Higher Education Census, in 2002, the total number of enrollments was 3,520,672 and in 2013 they rose to 7,308,817 (INEP, 2014), i.e. there was an increase of around 108% in 12 years. Even so, Brazil is still far from solving the problem of access to Higher Education, because, according to the report *Education at a Glance 2015* (Organisation for Economic Co-operation and Development, 2015), among the countries under analysis, Brazil has the highest percentage (76%) of young people

aged from 20 to 24 years outside the school environment.

In this context, it is necessary to highlight some actions that have promoted more equitable access to Higher Education in Brazil, namely: the advent of distance education, government policies on the use of funding, and social quotas themselves.

In 2002, there were 40,714 enrollments in Brazilian Higher Education on the distance modality, representing 1.16% of total enrollments. In 2013, this modality reached 1,153,949 enrollments, occupying 15.79% of all vacancies in Higher Education (INEP, 2014). It may be noticed that numerous people, on various parts of the country, became able to hold a university degree, something which makes relevant the role of this modality concerning equity in access to Higher Education (Netto & Oliveira, 2011).

During this period, the federal government instituted other inclusive education policies aimed at low-income students, such as the Brazilian Student Financing Fund (FIES) and the University for All Program (PROUNI) (Guarnieri, 2008). These policies aimed at expanding opportunities so that more young people have access to Higher Education.

Finally, there are social quotas, the focus of this study. Moehlecke (2004, p. 759) recalls that some AAPs have already been applied in other countries: in India, after the country's independence; in the USA, after the extinction of segregationist laws; in Europe, where some of these countries adopted affirmative actions to benefit immigrants from former colonies and also the female population. In Brazil, these programs have intensified in some universities because of social movements that fought for equality and equity of access to goods and services (Moehlecke, 2004).

According to Bezerra and Gurgel (2012), "Higher Education in Brazil was comfort, until the 1990s, with the condition of being a property allocated to students from higher layers of the population" (p. 96). However, the authors point out that significant efforts have been made in recent years to overcome this limitation, such as public policies of affirmative actions, like the social quotas.

Guarnieri (2008) stresses that affirmative actions seek to correct the input mechanisms of certain social groups in these environments through actions that favor excluded social groups in order to achieve this balance. As noticed by Cardoso (2008), the main justification for adopting vacancy allocation programs is linked to the low representativity of certain groups in Higher Education.

Thus, the quotas are measures aimed at specific social groups. Moreover, this is an intervention in Higher Education on the entry examination tests that, until then, "were understood in purely meritocratic terms" (Guarnieri,

2008, p. 45). The systems of quotas are characterized as allocation of vacancies in HEIs aimed at a portion of the population with limited access to university, either due to the poor conditions of the High School people attended, to family or financial conditions, or other obstacles that end up harming the learning of these young people still in High School (Bezerra & Gurgel, 2011).

Therefore, affirmative actions may be understood as redistributive measures aimed at the allocation of resources to groups discriminated against and victimized by socioeconomic and/or cultural exclusion (Feres Júnior & Zoninsein, 2006; Daflon et al., 2013). In this way, McCowan (2007) thinks that the quotas represent a challenge to justice, because the act of favoring certain applicants based on their background could be justified only in extreme circumstances. However, according to this author, the Brazilian reality, in face of the deep and long-term exclusion of certain segments of society, justifies the adoption of this measure. Therefore, he believes that the adoption of quotas can contribute positively to fairness in Higher Education, but as an interim measure while other long-term policies are also adopted.

Specifically in relation to racial quotas, Cardoso (2008) identified three arguments that explain the reason for their adoption: (i) need for compensation of damages caused to black-skinned individuals through slavery, something which is configured as historical justice, (ii) benefits from integration of various cultures, something which would bring diversity to society as a whole, and (iii) decreased social inequalities between white and black-skinned people arising from racial discrimination, which is the most striking and acceptable argument.

Cardoso (2008) thinks that social inequality, due to educational, economic, and cultural differences, justifies the affirmative action policies. Thus, these actions are social measures (Moehlecke, 2004) that favor equality of opportunity and put in equal conditions all individuals in a society whose aim is encouraging access to “primary means of dignified survival, such as education and work, ethnic, racial, or sexual minorities” (Guarnieri, 2008, p. 36).

### 2.3 Rawls’ Justice Theory

Affirmative actions also rely on Rawls’ Justice Theory (Bezerra & Gurgel, 2012; Cardoso, 2008; Moehlecke, 2004), which argues that society should pay more attention to those who were born in lower social positions, thus allowing equal opportunity. The main “idea is correcting the influence of these contingencies in order to seek greater equality” (Rawls, 1993, p. 95).

According to Rawls’ Justice Theory, it is possible

that a fair society has inequalities, but this inequality is acceptable only if it allows less advantaged people to have access to the benefits of social cooperation (Bezerra & Gurgel, 2012). The authors also emphasize that less fortunate individuals are those who have less income and wealth, but they enjoy equally the basic liberties and equal opportunities.

The social position that every member of society occupies cannot be judged as fair or unfair; according to the Justice Theory, it might be only a matter of luck. Thus, Rawls (1993) states that it is reasonable and acceptable that no person is benefited or harmed by the natural and social circumstances, i.e. depending on the specific situation of each one.

What is regarded as fair or unfair, in this case, are the ways how institutions use this reality (Moehlecke, 2004). It is worth noticing that the social institutions cited by Rawls (1993) are those that act in favor of the main economic and social provisions, especially the guarantee of fundamental rights and duties.

Furthermore, Fleischacker (2006) stresses that the distribution of benefits was carried out according to merit, while the Justice Theory advocates that the merit does not come “on the scene until certain basic resources (housing, health care, education) have been distributed to all” (p. 9). In this context, it is observed that the Justice Theory, advocating for equal opportunities and recognizing social inequalities, as well as the responsibility of social institutions in the distribution of fundamental rights and duties, provides the application of affirmative actions with a basis.

### 2.4 Access to and Dropout from Higher Education

According to Dias, Theóphilo and Lopes (2010), “dropout is related to several factors, divided into internal and external” (p. 1). The authors emphasize that internal factors are those linked to the course itself, such as infrastructure, faculty, and social and educational assistance, the latter is related to research and outreach activities, curriculum/period of the day, tutoring and assistance to low-income students. External factors, in turn, are related to the student her/himself and they concern the student’s vocation, the socioeconomic and personal problems purposes, failure in decision-making related to the course, learning difficulties, dissatisfaction with the course and her/his prospective profession, among others.

The issue of dropout from Higher Education is regarded as “one of the evils that plague the educational institutions and it has taken alarming proportions at

the undergraduate level” (Dias et al., 2010, p. 1). The prevalence of dropout, along with vacancies unfilled in selection processes, results in social losses both to the students and the HEIs, because they mean unrealized opportunities and financial expenditures that could be used otherwise (Cunha et al., 2014, 2015).

It is worth highlighting that this is a recurring problem throughout the world. According to Furtado and Alves (2012), in South Africa and the USA, about 40% to 50% of students leave the course, respectively; in European countries, such as Ireland and England, dropout rates tend to be lower.

Moreover, according to Cunha et al. (2015), the Brazilian figures do not differ a lot from international data, and the average rate of Brazilian institutions was around 22% between 2000 and 2005 (public institutions: 12%; private institutions: 26%). Also according to the authors, the group of courses consisting of Social Sciences, Administration, and Law has higher average rates, as they reach 25% within the same period (Silva et al., 2007).

Cardoso (2008) addressed issues of the system of quotas in the UnB that go from the demand for vacancies to the analysis of dropout. The author used, as a sample, students entering in 2004 and 2005. The results suggest that the holders of quotas in the UnB dropout less than those who are not holders of quotas, since in 2004 the dropout rate among non-holders of quotas was 6.5% and that of holders of quotas was 4.5%; in 2005, the dropout rate among non-holders of quotas was 10.7% and that of holders of quotas was 5.8%. Given these results, Cardoso (2008) assumes there is more appreciation of entering the university among holders of quotas, perhaps as a result of the difficulties faced in the entry examination test.

From the viewpoint of Cardoso (2008), dropout has negative effects on the system of quotas, as it generates idle vacancy that cannot be filled through allocation of vacancies, something which weakens the effects of the system of quotas and hampers entry of new holders of quotas. Thus, the author notices the relevance of studying dropout among holders of quotas and its causes, and this can provide means so that the HEIs adopt programs consistent with the needs of holders of quotas, promoting their permanence in the institution.

Dias et al. (2010) analyzed the dropout phenomenon in the course of Accounting Sciences of a HEI in Minas Gerais, Brazil, between 2004 and 2008 seeking, above all, to identify the causes of this phenomenon. The authors found that out of the 350 students who entered within the period analyzed only 45, about 13%, dropped out, and most of those who did it were men attending classes in the evening. Moreover, they also observed that the

main external cause concerns the incorrect choice of the course, which resulted in discontent and the consequent lack of motivation in relation to professional prospects. The study also pointed out that the main internal cause is lack of social and educational assistance.

Dias et al. (2010) also observed the dropout rate per category of entry in the institution under analysis, which provides as a way of entering the Serial Evaluation Program for Access to Higher Education and the traditional entry examination test, which provides vacancies through the universal system and quotas (Afro-descendant, poor; graduated from public school, poor; handicapped/Indian). The authors found that the universal system had a dropout rate higher than the other categories. Thus, they concluded that dropout does not increase as a result of adopting the system of quotas.

Bezerra and Gurgel (2012) found that the dropout rates in the UERJ, between 2005 and 2006, in the courses of Administration, Law, Chemical Engineering, Medicine, and Pedagogy. In 2005, the average dropout rate in the courses mentioned above was 12.25% among holders of quotas and 23.27% among non-holders of quotas. A similar result was found in 2006: the average dropout rate found was 9.39% among holders of quotas and 20.36% among non-holders of quotas. Within both periods under analysis, the students who entered through the system of quotas had dropout rates lower than those who entered through broad competition.

Lopes (2014), in turn, examined the causes of dropout from undergraduate courses in Accounting Sciences with a sample of 128 HEIs in the Brazilian South Region. However, these causes were evaluated according to the perception of pro-principals or equivalent professionals and course coordinators or equivalent professionals of the respective institutions. According to the respondents' viewpoint, the main situations that contribute to dropout among students are: financial difficulties, lack of vocation for the accounting field, issues related to the course choice and the didactics and methodology adopted in the course, lack of motivation among professors, little interest shown by students, and lack of information on the course to potential applicants. Among the situations that do not contribute to dropout, the respondents pointed out issues related to difficulties in the professor-student relationship, supply of vacancies in the evening and the fact that some students live far from the HEIs.

Cunha et al. (2015) analyzed dropout among undergraduate students in the courses of Business Administration and Accounting Sciences in the Brazilian HEIs between 2001 and 2010 through data provided by the Brazilian National Institute of Educational Research

and Study “Anísio Teixeira” (INEP) in 2012, in order to check the profile of dropout and completion of the courses concerned. The results showed that dropout rates in the courses of Business Administration were higher than in the courses of Accounting Sciences, with rates of 16.24% and 12.45%, respectively. However, the difference was not statistically significant at the 95% confidence level. According to the authors, these results may be partially understood by the fact that the students in these courses have similar profiles, such as full-time jobs and classes

in the evening.

Thus, we observe that dropout among students in HEIs occurs differently between holders of quotas and non-holders of quotas. In some cases, the dropout rate among holders of quotas is higher than among the others (Dias et al. 2010) and in other cases (Bezerra & Gurgel, 2012; Cardoso, 2008) it was lower. However, it is worth emphasizing that the studies mentioned above refer to specific programs of quotas in some HEIs and it is not known whether the effects brought by Law 12,711/2012 would be different.

### 3. METHODOLOGICAL ASPECTS

As for its objectives, this research is classified as descriptive. Regarding data collection, it is characterized as a documentary research conducted in archives. Authorization was asked to the Coordination of the Accounting Sciences Course to gain access to data on the modality and dropout among students entering the institution in the first semester of 2013. We were also authorized to disclose such data on a consolidated basis, i.e. with no identification of participants.

The option of working with a single institution is justified by the lack of nationwide databases that consolidate information on the dropout and entry levels per modality as provided for by Law 12,711/2012.

Thus, it is worth noticing that the institution under analysis has a national expression, as it has 6 campuses and offers 84 undergraduate courses in the classroom modality, both providing licentiate and bachelor degrees. Besides, it offers more than 40 *stricto sensu* graduate programs. This research focuses on data of undergraduate courses offered in the classroom modality.

In the data collection process, the following surveys were conducted: (i) number of students who enrolled in 2013/1, who constitute the population of this research, (ii) percentage of students who dropped out by the end of the first semester of 2014, and (iii) entry modalities for students who dropped out (system of quotas, affirmative actions, or broad competition) within the period analyzed. It is noteworthy that we considered as cases of dropout, regardless of the entry modality, those students who suspended attendance, formally withdrew, or abandoned their courses (i.e. they neither enrolled again for subsequent periods or formally gave up).

Through data collection, we identified the number of entrants, the number of students who dropped out and consequently the dropout percentage in relation to the number of entrants, as well as the entry modality for each

student in each course analyzed.

The analysis of dropout rates since 2013 is justified because this was the first year that the FIHEs and High School technical education institutions started adopting on a mandatory basis the system of social quotas in their selection procedures due to the enactment of Law 12,711/2012. It is worth noticing that the HEI under analysis allocated 50% of vacancies for the system of quotas and affirmative actions since the first semester of 2013 in compliance with Law 12,711/2012 and Decree 7,824/2012.

As for data processing and analysis, they were carried out through binomial analysis (Doane & Seward, 2008), something which characterizes this research, regarding data analysis, as quantitative. According to Gujarati and Porter (2011), “binomial analysis is a distribution of two parameters,  $n$  and  $p$ ,” whose probability density function is given by

$$f(X) = p^x (1 - p)^{n-x}$$

where  $x$  represents the number of successes in  $n$  attempts, and the binomial random variable  $X$  is the sum of  $n$  independent random variables  $X_i$  (Doane & Seward, 2008).

In the data analysis process, the following courses related to the Business field were selected: bachelor degree in Administration, Accounting Sciences, Economics, Information Management, and International Relations. The first two courses are offered at two campuses and the other at only one campus. However, data analysis was carried out “per course,” regardless of location or period offered. Thus, in the case of courses in Administration and Accounting Sciences, the total figures shown refer to the sum of the number of students who entered and dropped out on both campuses where they are offered.

Quantitative data analysis allowed us to check whether dropout rates show significant differences between the types of entry by testing these hypothesis:

H1: there is a difference between the dropout rates among students who entered through AAP when compared to those who entered through broad competition.

H2: there is a difference between the dropout rates among students who entered the system of quotas when compared to those who entered through broad competition.

H3: there is a difference between the dropout rates of

entrants through quotas or AAP when compared to those who entered through broad competition.

When conducting the binomial analysis, the forms of entry identified were listed in three categories: (i) broad competition, (ii) system of quotas, which corresponds to the total number of students who entered through the modalities of the system of quotas (modalities 1 to 4 in Table 1), (iii) AAP of the HEI, which refers to an institutional program that rules access, permanence, and completion for students graduated from public schools (usually attending schools in the region). The description of each of these modes of entry are shown in Table 1.

**Table 1** Description of the modes of entry

Modes of entry	Description
Modality 1	Applicants who have attended the entire High School in public schools and declare themselves as black, brown, or Indian and have gross monthly household income equal to or lower than 1.5 minimum wage per capita.
Modality 2	Applicants who have attended the entire High School in public schools, but do not declare themselves as black, brown, or Indian, and have gross monthly household income equal to or lower than 1.5 minimum wage per capita.
Modality 3	Applicants who have attended the entire High School in public schools and declare themselves as black, brown, or Indian, regardless of income.
Modality 4	Applicants who have attended the entire High School in public schools, but do not declare themselves as black, brown, or Indian, regardless of income.
Broad competition	Vacancies with a universal nature, i.e. free competition.
AAP of the HEI	AAP to enter Higher Education maintained by the HEI before Law 12,711/2012.
Other modalities	Academic mobility, specific skills, internal and external transfer.

HEI = public Higher Education institution; AAP = Affirmative Action Program.

Note: the modalities 1, 2, 3, and 4 constitute the systems of quotas.

Source: Prepared by the authors.

The analytical-quantitative processing of data was segregated into three stages. In the first stage, we analyzed data related to the dropout rate of entrants through broad competition and AAP. In the second stage, we analyzed the dropout rates of entrants through broad competition and system of quotas. In the third stage, we related the dropout rate of entrants through broad competition versus the sum of dropout rates of those who entered through AAP and system of quotas (AAP + broad competition).

In each of these stages, we analyzed the dropout rates of courses in the Business field as a whole, as well as the dropout rates in each of the courses in this field on an individual basis. Also, we analyzed data on the dropout rates of other courses offered (together), but not included in the Business field.

The AAP adopted by the HEI under analysis consists of a serial evaluation system of learning of the syllabus of

the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> grades in High School. This program is intended only to students who attended the last four years of Elementary School and High School in public institutions. However, with the approval of Law 12,711/2012, this selection process entered its extinction phase, because this HEI started adopting the Unified Selection System (SISU) as the only selection criterion.

As the AAP is serial, it mainly welcomes the regional demand and entered the exclusion stage, we set for this research analyzing dropout among entrants through quotas and the program in a separated way, although both modes of entry have affirmative action features. It is worth highlighting that we did not took into account data related to students who entered through “other modalities” (Table 1), something which includes entry to fill remaining vacancies.



## 4. DATA ANALYSIS

The collected data allowed us to identify that, in the first semester of 2013, 2,418 students entered courses in the classroom modality, both bachelor and licentiate degrees, offered by the HEI under analysis. It is noteworthy that the institution allocated 50% of the vacancies for the system of quotas since 2013/1, although the adoption of this percentage could be done gradually, as stipulated by

Law 12,711/2012.

Table 2 shows the number of students who entered in the first semester of 2013 per mode of entry and amount of students who dropped out until the end of the first semester of 2014, showing the total of 520 students who dropped out. The average dropout rate coincides exactly with that reported by Cunha et al. (2015), i.e. 22%.

**Table 2** Relation of entrants and students who dropped out

Mode of entry	Entrant (n)	Dropout (n)	Dropout rate n (%)
Modality 1	170	38	22
Modality 2	93	34	37
Modality 3	189	57	30
Modality 4	83	29	35
Subtotal	535	158	30
Broad competition	1,164	346	30
AAP of the HEI	719	16	2
Total	2,418	520	22

HEI = public Higher Education institution; AAP = Affirmative Action Program.

Source: Prepared by the authors.

It was found, as shown in Table 2, that in the period under analysis the dropout rate among those who entered through the modality “broad competition” (non-holders of quotas) was 30%. The average rate of holders of quotas, represented by the modalities 1, 2, 3, 4, was also 30%, suggesting there is no difference between the dropout rate of entrants through broad competition and those who entered through quotas. The average dropout rate among those who entered through the AAP was only 2%.

A possible explanation for the low average rate of the AAP might be adopting the SISU within this period as a way to enter the HEI under analysis, something which allows students from around the country to compete for the vacancies offered. Thus, entrants from distant locations can apply for vacancies in regions closer to their home or more related to their area of interest, something which would increase dropout from courses.

Table 3 shows the types of dropout in the sample.

**Table 3** Modalities of dropout and number of students who dropped out per modality

Type of dropout	Dropout (n)	Relative frequency (%)
Cancelled by rejection	1	0.19
Leaver	495	95.19
Internal transfer	17	3.27
External transfer	7	1.35
Total	520	100

Source: Prepared by the authors.

According to Table 3, 95% of the students who dropped out occurred due to students' withdrawal. Also, according to survey data, 87% of the students who dropped out did it in 2013 (first year of the course), and out of the prevalence of dropout in 2013, 366 cases occurred in the first semester and 88 cases occurred in the second semester. This trend corroborates the literature read (Bardagi & Hutz, 2009; Palma, Palma & Brancaleoni, 2005; Prado, 1990; Ribeiro, 2005; Vieira & Miranda, 2015), something which may indicate, for instance, that the students chose their courses in a precipitated and/or wrong way (Silva, Rodrigues, Brito & França, 2012).

Among the students who entered in 2013/1 the HEI under analysis, 16% were enrolled in courses in the Business field. However, by the end of 2014/1, the dropout percentage in this field was 14% of the entrants in 2013/1, below the overall rate of the HEI under analysis and also below the average percentage of 25% indicated by Silva et al. (2007) for the area of Social Sciences, Administration, and Law.

Table 4 shows the dropout rates in the sample segmented by broad competition, system of quotas (modalities 1 to 4) and the AAP of the institution.

**Table 4** Dropout rates in relation to the number of entrants

Courses	BC			SQ			AAP		
	NE (n)	ND (n)	%D	NE (n)	ND (n)	%D	NE (n)	ND (n)	%D
Administration	57	22	39	26	5	19	50	1	2
Accounting Sciences	55	14	25	26	6	23	48	0	0
Economics	18	5	28	7	7	100	10	0	0
Information Management	18	5	28	7	2	29	11	1	9
International Relations	20	2	10	10	2	20	20	2	10
Business Field	168	48	29	76	22	29	139	4	3
Other courses	996	298	30	459	136	30	580	12	2
Total	1,164	346	30	535	158	30	719	16	2

%D = dropout rates; BC = broad competition; ND = number of dropout cases; NE = number of entrants; AAP = Affirmative Action Program; SQ = system of quotas.

Source: Prepared by the authors.

We observe, in Table 4, that the average dropout rates among entrants in courses in the Business field (the five courses under analysis) through broad competition and the system of quotas are equal (29%) and that the average dropout rate in the field among entrants through the AAP is much lower – 3%.

We may notice that, among the courses with larger number of entrants, Administration and Accounting, the dropout percentage of holders of quotas were lower than that of non-holders of quotas, i.e. 19% against 39% and

23% versus 25%, respectively. These results corroborate the findings by Cunha et al. (2015), who observed dropout rates for the course of Administration higher than those for the course of Accounting Sciences. These results are also consistent with Bezerra and Gurgel (2012), who found that, in 2005, dropout among non-holders of quotas among students in the course of Administration of the UERJ was higher (28.8%) than that of holders of quotas (14.8%).

Also based on Table 4, it is worth noticing that the

dropout rate of entrants through the system of quotas in the course of Economics was 100%. In contrast, within the same period analyzed, the dropout rate among students entering through the AAP, also in the course of Economics, was 0%. Likewise, the course of Accounting Sciences had 0% of dropout students among those entering through the AAP, i.e. within the period analyzed no student left the course.

In this case, there is a need to think through potential factors that motivated the permanence or not among these students in their respective courses, especially in Economics, which showed 100% of dropout students among holders of quotas. One of the reasons that may have positively influenced on the permanence of these students is related to the policies of scholarships and student assistance programs, as well as the origin of students from the AAP is mostly in the same region of the HEI under analysis, while the other students entered through the SISU and come from various parts of the country.

With the collection of data related to the courses in the Business field and to the total number of entrants and students who dropped out from other courses offered by that HEI, we conducted a quantitative analysis of data, and the results are presented in the next section.

## 4.1 Binomial Analysis

Binomial analysis allowed us to compare and analyze the dropout rates based on the following aspects: (i) quotas  $x$  broad competition, (ii) affirmative actions  $x$  broad competition, and (iii) quotas + affirmative actions  $x$  broad competition. In this process we regarded as “successful” entrants who remained in their respective courses by the end of 2014/1. As “failure” we regarded the entrants who left their courses during the period under analysis. The sum of the success and failure cases results in the total numbers of students who entered in 2013/1 in each of the entry modes.

It is worth noticing that the terminology success/failure was used exclusively for the purposes of the statistical test because, as we know, dropout, in some cases, may have been motivated by the fact that the student found better opportunities, either in the course desired or the institution where she/he will study, for instance.

Table 5 lists the results of the relation between the dropout rates among students who entered through broad competition versus AAP and the Business field as a whole, for the courses in this field as a unit and for the other courses offered by the institution within the period under analysis.

**Table 5** *Broad competition (BC) versus Affirmative Action Program (AAP)*

Courses	AAP (n)			BC (n)			p
	Success	Failure	Total	Success	Failure	Total	
Administration	49	1	50	35	22	57	0.00000
Accounting Sciences	48	0	48	41	14	55	-
Economics	10	0	10	13	5	18	-
Information Management	10	1	11	13	5	18	0.22805
International Relations	18	2	20	18	2	20	1.00000
Business Field	135	4	139	120	48	168	0.00000
Other courses	568	12	580	698	298	996	0.00000

Source: Prepared by the authors.

Based on the results of Table 5, the hypothesis  $H_1$  cannot be rejected for the course of Administration, for the courses in the Business field as a whole and for the other courses offered by the HEI under analysis, given that they had  $p$  values below the 0.05 level of significance, demonstrating that the dropout rates in these courses are not statistically equal between the entry modes.

These findings are relevant, because the AAP is a program established by the very HEI under analysis,

similar to several others mentioned in the literature. However, the results for these various programs are not converging. In some cases, dropout among holders of quotas is higher than the others (Dias et al. 2010), in other cases, it is lower than the others (Bezerra & Gurgel, 2012; Cardoso, 2008), as in the HEI under analysis.

However, the hypothesis  $H_1$  is rejected for the courses of Information Management and International Relations, because the 0.05 significance level shows that dropout rates

for both modes of entry are statistically equal. Thus, we infer that there is no difference between the dropout rates of entrants through the AAP when compared to those who entered through broad competition, for both courses.

In the courses of Accounting Sciences and Economics, the permanence rate (success) among students who entered through the AAP was 100%, i.e. there was no dropout. The dropout rate of entrants through broad

competition is 34% for Accounting Sciences and 38% for Economics. These results indicate that the students who entered through the AAP took the opportunity with much more intensity.

Table 6 shows the results on the relation between dropout rates of those who entered through broad competition versus system of quotas.

**Table 6** System of quotas (SQ) versus broad competition (BC)

Courses	SQ (n)			BC (n)			p
	Success	Failure	Total	Success	Failure	Total	
Administration	21	5	26	35	22	57	0.08069
Accounting Sciences	20	6	26	41	14	55	0.81679
Economics	0	7	7	13	5	18	-
Information Management	5	2	7	13	5	18	0.96835
International Relations	8	2	10	18	2	20	0.44752
Business Field	54	22	76	120	48	168	0.95206
Other courses	323	136	459	698	298	996	0.91052

Source: Prepared by the authors.

The results in Table 6 indicate that the courses of Administration, Accounting Sciences, Information Management, International Relations, as well as the Business field as a whole and the other courses offered had *p* values above the 0.05 significance level. Thus, the hypothesis  $H_2$  is rejected, because the dropout rates of entrants through broad competition or the system of quotas are statistically equal.

This result is very important and it is opposed to the findings of previous studies, because in some cases

dropout among holders of quotas is higher than the others (Dias et al. 2010), while in other cases dropout among holders of quotas is lower than the others (Bezerra & Gurgel, 2012; Cardoso, 2008). Anyway, these findings show that in the HEI under analysis dropout rates among entrants through affirmative actions are not higher than the others, as argued by the critics of such actions.

Table 7 shows the results of the relation between dropout rates of entrants through broad competition in relation to entrants through AAPs + system of quotas.

**Table 7** Affirmative Action Program (AAP) + system of quotas (SQ) versus broad competition (BC)

Courses	AAP + SQ (n)			BC (n)			p
	Success	Failure	Total	Success	Failure	Total	
Administration	70	6	76	35	22	57	0.00002
Accounting Sciences	68	6	74	41	14	55	0.00710
Economics	10	7	17	13	5	18	0.40392
Information Management	15	3	18	13	5	18	0.42268
International Relations	26	4	30	18	2	20	0.72234
Business Field	189	26	215	120	48	168	0.00005
Other courses	891	148	1,039	698	298	996	0.00000

Source: Prepared by the authors.

The results in Table 7 show that the courses of Administration and Accounting Sciences, the Business field as a whole and other courses offered had  $p$  values below the 0.05 significance level. The dropout rates among students of these courses are not statistically equal between the modalities of entry, because one of them has higher dropout rates in relation to the other.

$P$  values for the courses of Economics, Information Management, and International Relations are higher than the 0.05 significance level, indicating that the dropout

rates of these courses are statistically equal, regardless of the mode of entry.

Based on these results, regarding the relation between the dropout rates of entrants through broad competition or through quotas and AAP, the hypothesis  $H_3$  is not rejected for the courses of Administration and Accounting Sciences, for the Business field as a whole, and for the other courses of the HEI. However, the hypothesis  $H_3$  is rejected for the courses of Economics, Information Management, and International Relations.

## 5. FINAL REMARKS

This study aimed to examine whether there are significant differences in dropout rates between the modes of entry: broad competition, social quotas, and other affirmative actions of students in the Business field in a Brazilian federal HEI. Thus, we conducted a quantitative study pointing out that out of the 2,418 students who entered in the first semester of 2013, 520 dropped out until the first semester of 2014, i.e. an average dropout rate of 22%.

Regarding the students in the Business field, we found that dropout rates of entrants through broad competition and through quotas were 29%. The dropout rate among entrants through AAP in the HEI was only 3%. A possible explanation for the low average rate of AAP might be adopting the SISU within this period as a mode of entering the HEI under analysis, which allows students from around the country to compete for the vacancies offered. Thus, entrants from distant locations can apply for vacancies in regions closer to their home or more related to their area of interest, something which would increase dropout from the courses.

The very institution under analysis, in the presentation of the general data for the base year 2013, highlights that the number of students who dropped out grew precisely because the student has the opportunity to choose many institutions in the country in the same selection process, in the case concerned, the SISU. Thus, if the student chooses another university, she/he will be regarded as an official leaver in the previous institution. Another factor that may explain the number of students who dropped out within the early periods refers to the dissatisfaction with the chosen course (Silva et al. 2012).

The fact that those entering through the AAP come from the same region where the HEI analyzed could justify the permanence of these students in their respective courses. The opposite would occur with entrants through other modalities that, by means of the SISU may come from

regions more distant from the HEI under analysis. Given this scenario, as well as because the AAP is undergoing its process of extinction, it is assumed that the dropout rates of HEIs tend to increase with time.

As already highlighted, the dropout rate of entrants through the AAP (which is undergoing the process of extinction) is considerably lower than the other. These students, when participating in a selection process exclusive for students from public schools, accessible mainly to students from the region where the HEI is located, got special attention to access higher Education. This attention has achieved positive effects, because dropout among these students is only 3%. Also, for some courses in the Business field, such as Economics and Accounting Sciences, dropout is zero. These results reinforce the assumptions of the Justice Theory, which states that no person shall be benefited or harmed by social circumstances, therefore, society should pay attention to those who were born in disadvantaged social positions, thus allowing equal opportunity.

Another premise of the Justice Theory, also reinforced by the results obtained, refers to the fact that the distribution of benefits and basic resources, such as education, should not be made having merit as a basis, but grounded in equal opportunities. In this case, although such students have entered through inclusive education policies, in the case of the AAP or through the system of quotas (which for some critics would be lack of merit), presented greater permanence in the courses of the HEI under analysis.

However, we observe that the causes related to dropout in Higher Education were not investigated. So, it was not possible to check which reasons led the students of that HEI to stay or not in their courses. Moreover, we have not analyzed the impact of socioeconomic policies for low-income students, which may influence their permanence (transport, food, and housing assistance).

When comparing the dropout rates of entrants through broad competition and through quotas (Law 12,711/2012), the results indicate that, for courses in the Business field and the total amount of courses in the HEI under study, the dropout rates of both modes of entry are statistically equal, with no difference between them. These results contradict the myth recalled by Bezerra and Gurgel (2012) and Velloso (2009) that holders of quotas would abandon the courses in a higher proportion than non-holders of quotas. In other words, dropout does not grow with the adoption of affirmative actions in the HEI under study, on the contrary, in many cases it decreases.

These results show that the consequences brought by the policy of quotas established by Law 12,711/2012 are different from those established in earlier programs of quotas in the HEIs. The data collected show that, in the HEI under study, the full adoption of the percentage of quotas established by this law did not significantly affect the dropout rates when compared to those of entrants through broad competition. If this reality is confirmed in other institutions, the fact constitutes a positive aspect of the educational policy deployed.

On the other hand, according to Cardoso (2008), dropout may adversely affect the system of quotas, because it generates unfilled vacancies that cannot be filled by allocating vacancies, something which theoretically weakens the effects of the system of quotas and hampers the entry of new holders of quotas. Thus, after the consolidation of the system of quotas brought by Law 12,711/2012, further studies should be conducted to confirm the trend examined herein.

The study results also allow hypothesizing that the

adoption of the SISU can have significant effects on the dropout rates in the HEI under analysis, something which may be evaluated in further studies. It is also unclear whether the adoption of quotas, as established by Law 12,711/2012, might have a significant impact on the students' academic performance, something which also constitutes material for further research.

Moreover, it is suggested that further research examine the reasons that led students to stay or leave their courses, as well as the impact of socioeconomic policies on the decision to stay or not, in order to analyze the causes of dropout.

Thus, we hope that the research results contribute to studies on dropout in Higher Education, especially those related to the Business field. However, as the period under analysis includes only three semesters after the adoption of measures listed by Law 12,711/2012, these entrants are undergoing the education process, therefore these results do not necessarily reflect the dropout rates of a full cycle of education, because, until the end of their respective courses, a greater number of students can leave, something which will result in changes in such rates.

We also highlight the limitation related to the sample from a single institution. However, it is worth noticing that Law 12,711/2012 deals specifically with the federal HEIs, so the research findings constitute significant bases for comparison with others that may be conducted.

In short, because this is a recent educational change, this article brings more questions than answers about the effects of Law 12,711/2012 on the dropout rates among holders of quotas and non-holders of quotas. However, this is the road to run to construct knowledge.

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