Long-term outcomes of affirmative action
Evidence from a selective law school in Brazil*

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Abstract

Affirmative action (AA) policies continue to be a controversial solution for leveling the playing field for college admissions. We use one of the first quota policies implemented in Brazil, at Rio de Janeiro's State University (UERJ), to separately investigate its long-term effects for AA applicants who benefited from the policy and non-AA applicants displaced by it. We focus on applications to the undergraduate law major at UERJ for three reasons. First, UERJ's application process allows us to identify applicants to either AA or non-AA slots, and, among them, those who were offered admissions. Second, this is a highly selective undergraduate program. A 30-40 point (out of 100) difference in the cutoff scores between AA and non-AA shows that AA applicants were subjected to a much lower bar for admissions. Third, a high-stakes post-college exam (lawyers' licensing process) enables tracking applicants into the law career after college. In addition, we combine government data, including employment information (RAIS), firm ownership, and graduate degrees, along with online scraped data for the lawyer licensing exam, internship applications, and college graduation. For applications between 2006-2011, we are able to track about 87% of AA and 79% of non-AA applicants around each group-specific cutoff across outcomes. Our results suggest that, for beneficiaries, this AA quota policy increases the probability of graduating from college from 41% to about 80%, becoming a certified lawyer from 31% to about 70% , and being employed as such from 13% to about 30%. We find that applicants displaced by the policy do not appear to be negatively impacted, possibly because they could've been admitted to other quality universities. We estimate that non-AA applicants both slightly above (admitted) and below (displaced) the cutoff have a 71% chance of graduating from college, about 70% of becoming a licensed lawyer, and 25% of being employed as such. We interpret the net effect of this policy to be positive, giving opportunities for those who don't typically have it without any significant direct impacts on others.

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1 Introduction

Although controversial, affirmative action (AA) policies have been used to level the playing field for college admissions in about one-quarter of the countries worldwide, including the US, France, and more recently Brazil (Jenkins and Moses, 2014). On the one hand, the goal of these policies is to promote equity of opportunity for students from more or less privileged backgrounds. On the other hand, the policy may generate inefficiencies on the allocation of students to universities. This study contribute to the AA debate by analyzing long-term post-college outcomes of AA and non-AA applicants to the undergraduate law major of a selective university in Brazil, *Universidade do Estado do Rio de Janeiro* (henceforth, UERJ), where an AA policy was implemented in the early 2000s. We find evidence that the policy improved outcomes for beneficiaries on several dimensions, with negligible impact on displaced non-AA applicants.

One of the first in Brazil, this AA policy established a quota system by reserving a total of 45% of seats from each major for students from low-income families that qualified in a targeted minority category.[1] We specifically focus on applicants to the undergraduate law major because of its selectivity and the high-stakes post-college licensing exam, which gives a measure of human capital acquired during this program.[2]

Although much of the literature on AA in college admissions studies US institutions, holistic admissions processes, including multiple test scores (GPA, SAT/ACT), recommendation letters, personal statements, and so on, make it challenging to identify AA or non-AA applicants (Rothstein and Yoon, 2008; Black et al., 2020).[3] As a result, recent research explores other institutional contexts such as India (Bertrand et al., 2010) and Brazil (Francis-Tan and Tannuri-Pianto, 2018).

Building on lessons from these earlier studies, we argue that applicants to UERJ's undergraduate law program represent an interesting case study for three reasons: (1) clear identification of AA and non-AA who were either admitted or not to the program, (2) degree selectivity and the substantial difference in cutoff scores for AA and non-AA, and (3) availability of long-term outcomes, including the high-stakes licensing exam. We provide more details into each of these reasons below.

First, to identify AA and non-AA applicants, admitted or not, we take advantage of data on individuals' choice over application group (AA or non-AA), entrance exam scores, and the group-specific cutoff scores for each year in our sample. As admission to Brazilian public universities relies exclusively on test scores from a placement exam, we can precisely identify AA and non-AA applicants on both sides of their respective cutoffs.

Second, the undergraduate law major's selectivity and prestige at UERJ creates a context in which not-as-well-prepared (low-scoring) applicants obtain admission to a program for which only the best and most prepared (highest-scoring) applicants would gain access. Like most public

[1] These categories were: 20% of total seats reserved for self-declared black applicants, 20% to students who attended and graduated from a public high school and 5% to indigenous or disabled students.

[2] As in many European countries, college applicants select a major already at the application stage in Brazil. Additionally, in Brazil, a Bachelor's in law is a sufficient and necessary qualification for undertaking lawyer licensing examinations.

[3] We discuss the related literature in details in Section 2.

universities in Brazil, UERJ's admission process is very competitive and selective. Its law school, particularly the undergraduate major of interest in this analysis, is considered one of the most prestigious programs in the state. By reserving almost half of the law undergraduate spots to low-income students, this policy generated a sizable gap between AA and non-AA admission cutoffs. For application processes from 2006 to 2011, we find that AA cutoff scores were consistently lower than non-AA by more than 30 points (out of a 100 maximum), and only 2% of AA applicants would have been admitted based on the non-AA cutoff.[4]

This considerable gap allows us to investigate the effects of the AA policy regarding an efficiency-equality trade-off. We hypothesize that AA and non-AA applicants near their relevant cutoffs face different outside options if not admitted to UERJ's law school. The low AA cutoff score suggests that AA applicants close to it would have a little chance of admission at any other selective university in the state since UERJ was the only one with an AA policy. On the other hand, the high non-AA cutoff suggests that applicants close to it had a good chance of being admitted at other prestigious institutions. Thus, we expect outside options for AA applicants to be much worse, such as attending a low-ranked for-profit institution or not attending any college, while they possibly range from marginally worse to similar for non-AA applicants. The enrollment rate of each type of admitted applicant provides suggestive evidence of differences in outside options. About 97% of AA applicants admitted to UERJ's law major enroll, as opposed to a little over 81% of non-AA admitted applicants.

Third, by focusing on applicants to the undergraduate law major, we can overcome some of the difficulties related to longitudinal data availability and tracking students after college. Like the US, Brazil relies on a licensing exam on top of the law degree to grant lawyers the necessary accreditation to practice law and represent clients. We interpret the choice of applying to the undergraduate law major as a revealed preference for a career as a lawyer and use public records from the licensing process, a high-stakes exam, to estimate the licensing rate as a post-college outcome.[5] Since the licensing exam tests content learned at the law school, its results give us a measure of academic proficiency comparable across schools and not influenced by the AA policy.

Arguably, a limitation of restricting the analysis to law degree applicants lies in the fact that matched employer-employee dataset (RAIS/ME)[6] only contains information about formally employed individuals. Lawyers do not need to be officially employed by a company to work. Once licensed, lawyers can be self-employed agents or become associates at law firms, neither of which is recorded in RAIS.[7] Therefore, we complement our labor market outcomes with firm ownership

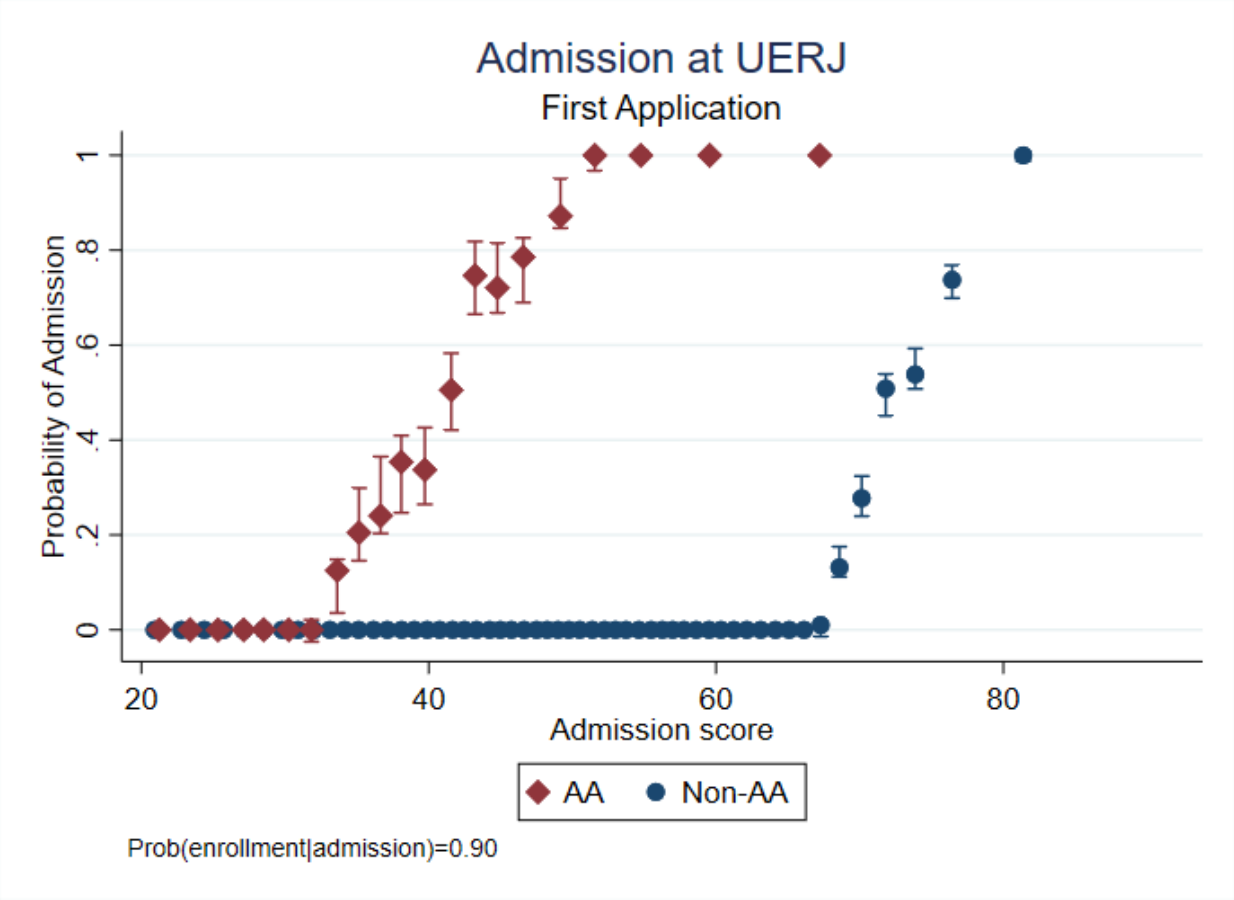
[4] A similar picture arises for most UERJ majors, according to Mendes Junior et al. (2016).

[5] Valente and Berry (2017) relies on ENADE's results, a national exam applied every few years to students of selected majors at their graduation year to argue that AA beneficiaries catch up with non-AA students. However, ENADE is a low-stake exam with no performance threshold requirement, compromising its potential as a good college education measure.

[6] *Relação Anual de Informações Sociais*, provided by the Ministry of Economy.

[7] Anecdotal evidence suggests that law firms typically "hire" lawyers by making them associates, i.e., shareholders of the law firm. This practice is advantageous for the firm as it allows more flexibility on contract designs. For instance, Brazilian labor laws rule out variable wages conditional on performance, but shareholders may receive unequal dividends. Lawyers may also consider this employment arrangement advantageous because of lower tax rates

Figure 1:



data (CNPJ/RF),[8] graduate degree records (CAPES/MEC),[9] and online scraped data of college completion records and the licensing process. Considering all outcomes, we can track about 86% of AA and 79% of non-AA applicants, both below and above each admissions cutoff.

For AA applicants, we estimate how those who scored just above the relevant cutoff (admitted because of the policy) differ in outcomes from quota applicants who scored just below the cutoff (not admitted regardless of the AA). For non-AA applicants, we estimate how those who scored just below the relevant cutoff (not accepted because of the policy) differ in outcomes from non-AA applicants who scored just above the cutoff.

Our results show significant gains for AA beneficiaries and almost no loss for non-AA displaced ones between 7 and 10 years after application. For AA beneficiaries, the policy substantially increased the probability of college completion (between 13 and 23 percentage points) and of becoming a licensed lawyer (between 18 and 27 p.p.). In terms of employment, we find no differences

on profits/dividends than labor income.

[8]Open access firm ownership data from *Receita Federal do Brasil*, the Brazilian tax collecting and enforcement agency.

[9]Provided by the Ministry of Education' agency responsible for graduate degree programs.

for being employed as a lawyer from 7 to 9 years after application, but about 17 p.p. increase 10 years out. However, we find evidence of the policy negatively impacting formal employment more generally for AA beneficiaries up to year 9, with no differences at year 10 after application. For those displaced by the policy, we do not find evidence of a significant difference from those who had similar scores on the entrance exam but got accepted. For individuals slightly below and above the non-AA cutoff, we estimate between 81 and 88% probability of completing college between 7 and 10 years after their first application. We also find 62 to 67% chance of becoming a licensed lawyer, 12 to 26% chance of being employed as a lawyer, and 40 to 61% chance of being formally employed in the same period. We interpret these results as negligible costs imposed on non-beneficiaries, in line with the evidence discussed in Fryer and Loury (2005) and Black et al. (2020).

This paper is organized as follows. Section 2 discusses our study in the context of the related literature. Section 3 describes the institutional context of UERJ's admission process, the university quota policy, and the certification exam. Section 4 provides details on the application data and all sources of long-term outcomes we use for tracking applicants. Section 5 explains our identification strategy. Section 6 presents results and discussion, and Section 7 concludes.

2 Related Literature

This paper is closely related to two broad strands of the economics literature. The first strand examines the labor market returns associated with attending selective higher education institutions. The second strand centers on the impact of AA policies, investigating their effectiveness, cost-benefit, and efficiency-equity trade-offs at providing underrepresented minorities (URMs) college opportunities that would not exist otherwise. [10]

There is growing evidence that attending a selective university can generate substantial individual returns. Using regression discontinuity designs, several papers document that admission to relatively more selective institutions leads to positive labor market returns in the US (Hoekstra, 2009; Zimmerman, 2014), Colombia (Saavedra, 2009), Italy (Anelli, 2020), India (Sekhri, 2020), and Brazil (Duryea et al., 2019). In a more comprehensive analysis, matching all US taxpayers to their SAT/ACT scores, Chetty et al. (2020a) document a larger earnings gap between students from low- and high-income backgrounds across colleges than within colleges. Moreover, they show that scoring high enough on the SAT/ACT represents a major barrier for increasing the share of students from low-income backgrounds at elite institutions. Whether these earning gains materialize in the context of AA policies depends on whether AA affects targeted individuals' admission prospects and whether AA beneficiaries reap the benefits of increased college selectivity.

In an early account of AA policies in the US, Bowen and Bok (1998) suggest their effectiveness at increasing minority representation at selective universities. Recent studies using data from Brazil

[10] Arcidiacono et al. (2015) and Holzer and Neumark (2000) present comprehensive summaries of the AA literature covering all of these topics. Additionally, other studies have also focused on incentives and mechanisms triggered by the admission process (see, e.g., Long, 2004a; Card and Krueger, 2005; Dickson, 2006; Antonovics and Sander, 2013; Antonovics and Backes, 2014; Cotton et al., 2014; Assuncao and Ferman, 2015; Estevan et al., 2019).

and India confirm that evidence (Francis and Tannuri-Pianto, 2012; Estevan et al., 2019; Vieira and Arends-Kuenning, 2019; Bagde et al., 2016; Mello, 2022). It follows then that discontinuing AA for admissions at these institutions is likely to a decrease in enrollment and attainment by URMs (Long, 2007; Cortes, 2010; Backes, 2012; Hinrichs, 2012; Howell, 2010; Arcidiacono, 2005; Bleemer, 2022). The Brazilian quota policy analyzed here allows for a straightforward conjecture of the potential consequences of discontinuing the policy. In our data, only 2% of the AA students scored high enough to have been admitted without the policy, which translates into a decrease from at least 40% representation of low-income students to 0.8% (disregarding changes in application behavior).

Whether AA policies ultimately benefit disadvantaged students hinges upon the relative importance of university quality and student match in determining outcomes (Arcidiacono and Lovenheim, 2016). The mismatch hypothesis has been a major focus of the literature on potential negative effects of AA on beneficiaries, suggesting overmatching could actually harm their educational and career prospects relative to their counterfactual outcomes in the absence of the policy (Arcidiacono et al., 2014; Dillon and Smith, 2019; Wyness and Murphy, 2020).[11] While there is no gold standard for identifying mismatch effects, illustrated by the fact that Sander (2004) and Rothstein and Yoon (2008) reach opposite conclusions while using the same dataset of US law school applicants,[12] Bleemer (2022) documents lower wages and a decline in URM students graduating in STEM fields after a ban on affirmative action led URM applicants to cascade into lower-quality colleges.

Alternatively, a large body of literature considers the possibility of long-term impacts of these AA policies on their beneficiaries and those displaced by them.[13] For example, Bertrand et al. (2010), Francis-Tan and Tannuri-Pianto (2018), Otero et al. (2021), and Black et al. (2020) estimate positive gains for beneficiaries in India, Brazil, and the US, respectively.[14] These gains include higher chances of college completion, employment in the field of major, and higher earnings. Our results complement these findings with evidence from the attorney licensing exam, for which chances of passing the exam more than double at the AA admission margin.

[11] Arcidiacono et al. (2011) investigates why students would enroll at a university if they have low chances of succeeding, finding evidence that students have imperfect information about their chances of succeeding in different schools and colleges have more information about the quality of fitness, which is not disclosed to applicants. This finding is also supported by Dillon and Smith (2017).

[12] Although both studies rely on the Law School Admission Council and Bar Passage Study for the 1991 law school admission cohort dataset, Sander (2004) analysis suggests AA could be reducing the number of Black attorneys in the US by setting up overmatched students to failure (dropping out or not passing the Bar) or relegating them to the bottom of their cohort distribution. Using counterfactual simulations and allowing for multiple attempts of the Bar exam instead of just the first, Rothstein and Yoon (2008) findings suggest that AA can increase the number of Black attorneys in the US.

[13] Early studies on this issue include Loury and Garman (1993), Davidson and Lewis (1997), Betts and Morell (1999), and Brewer et al. (1999).

[14] Bertrand et al. (2010) analyze a quota policy for low-caste students in a prestigious engineering college in India and find benefits in terms of earnings and the probability of working as an engineer that accrue only to relatively well-off targeted students; Francis-Tan and Tannuri-Pianto (2018) show evidence of substantial educational and job placement gains for beneficiaries, in particular male ones at selective majors, of a racial quota policy implemented at a prestigious federal university in Brasilia, the capital of Brazil; and Black et al. (2020) estimate positive effects on college completion and future earnings for disadvantaged students who benefit from the Texas Top Ten Percent Plan, described in detail by Long (2004b).

Finally, while the primary goal of AA policies is redistributive, inquiring about their costs allows us to understand the trade-offs involved in their implementation (Arcidiacono et al., 2016). Some studies estimate a significant loss for non-beneficiary applicants displaced by the policy (Bertrand et al., 2010; Bagde et al., 2016) and a potential reduced accumulation of human capital and networking opportunities for the high achieving students (Machado et al., 2023). Others suggest that such costs are probably not too substantial (Francis-Tan and Tannuri-Pianto, 2018; Black et al., 2020). By focusing on only one institution and major, we are limited in our analysis of mismatch and potential cascade effects.[15] In our setting, we observe similar graduation rates for AA and non-AA students admitted to UERJ, although AA students take on average one semester more to graduate. We interpret this finding as suggestive evidence that these students seem to academically catch up to their non-AA peers, even under a high degree of overmatching.

3 Institutional Context

3.1 University Admission and Affirmative Action in Brazil

Public universities in Brazil do not charge tuition fees, making them the most affordable option for low-income students. However, their admission processes are extremely competitive, as they are typically the most prestigious institutions to obtain a college education. Thus, before the AA policies, most successful applicants came from privileged backgrounds and were well trained for college admission exams at high-quality private high schools.

Following a state legislative bill enacted in 2003, state universities in Rio de Janeiro have to reserve, in each major, 20% of places for applicants who graduated from a public high school, 20% for those belonging to a disadvantaged racial group and 5% for students with disabilities.[16] Only low-income applicants can opt for admission under any of these three quota systems. In practical terms, an applicant has to select the application type (non-quota, racial quota, public-school quota, or disability quota) and major (e.g., law, economics, medicine, etc.) before taking the admission exam.[17] Applicants failing to satisfy any of the eligibility criteria are automatically reassigned as non-AA applicants and appear as such in our data. An applicant cannot change these options once they receive their scores and ranking. All applicants to a given major take the same admission exam but are ranked according to their application type. Students admitted under the quota system receive a monthly stipend equivalent to half of the minimum wage.[18]

UERJ is a particularly selective institution for law undergraduate studies among public universities in Rio de Janeiro's metro area.[19] Due to its reputation and zero tuition cost, UERJ's admission

[15] See Estevan et al. (2017) for a discussion of cascade effects related to the Texas Top Ten Percent Plan.

[16] Assuncao and Ferman (2015) provide more information on bill 4151/2003, which established the quota policy.

[17] As in most Latin American and European countries, college applicants in Brazil must select a major at the application stage.

[18] See Appendix A for more details on UERJ's admission exam, quota eligibility criteria and checks, and financial support.

[19] UERJ has been in the top-ranked group of law schools in every edition of ENADE, a national end-of-college examination that started in 2006, except for 2012. Similarly, UERJ graduates comprised the most substantial

exam for law studies has been extremely competitive, even relative to other selective public universities. In our sample, the admission rate is 6% and 35% for non-AA and AA applicants, with an enrollment rate of 88% and 97% conditional on admission, respectively.[20]

From 2003 to 2011, UERJ was effectively the only public university in Rio de Janeiro with a quota policy offering a law degree mandated by state law.[21] The other public universities in Rio de Janeiro started implementing quota policies only in 2013, as mandated by federal law number 12,711/2012.[22] During our analysis period, admission exams were university-specific, so students would have to apply and take separate exams for each institution of interest. This university-specific admission system allows top-scoring applicants to be offered a slot at more than one institution in a given year.[23]

3.2 Lawyer Certification Exam and Labor Market

In Brazil, the requirements to become a certified lawyer (i.e., to be able to practice law) consist of completing a law degree, an undergraduate major in Brazil, and passing a certification exam from the Brazilian Order of Attorneys.[24] Only undergraduate students who have completed their studies or are in the final year of law school can take the exam.[25]

The certification exam consists of two rounds. The first round is a multiple-choice test with general questions on Brazilian law. Applicants have to correctly answer at least 50% of items to qualify for the second round. In the second round, applicants take a written test that includes an essay specific to their specialization area. The certification exam takes place two to four times per year, and applicants can retake it as often as necessary.

The certification exam is quite selective. Only 37.9% of applicants in the state of Rio de Janeiro passed the first round of the OAB examination between 2010 and 2013 (OAB, 2013). Among those, only 47% (or 17.8% of the initial population of test-takers) succeeded in the second round and became certified lawyers. In contrast, selective universities have much higher pass rates. UERJ had a 75.7% certification rate for the same period, and the other three public universities with prestigious law schools in the state achieved similar certification rates, ranging between 73 and

proportion of "admired lawyers" among law schools in Rio and the third- or fourth- most admired among all Brazilian law schools from 2009 to 2019, according to surveys conducted by the Brazilian law magazine *Análise Advocacia 500* (https://analise.com/publicacoes/analise-advocacia-500).

[20] For comparison, Harvard's admission rate for the class of 2023 was about 5%, with an enrollment rate conditional on the admission of 82%.

[21] The two other state universities in Rio de Janeiro *Universidade Estadual da Zona Oeste* (UEZO) and *Universidade Estadual do Norte Fluminense Darcy Ribeiro* (UENF) do not offer a major in law.

[22] There are four public (federal) universities in Rio. They all offer a law degree: *Universidade Federal do Rio de Janeiro* (UFRJ), *Universidade Federal do Estado do Rio de Janeiro* (UNIRIO), *Universidade Federal Fluminense* (UFF), and *Universidade Federal Rural do Rio de Janeiro* (UFRRJ). In 2009, UFF implemented a bonus system granting a 10% increase in the second phase of the admission exam for applicants who graduated from public school (Waltenberg and de Carvalho, 2012). Since UFF is significantly less selective than UERJ, we do not expect that policy to affect our main results.

[23] More recently, public universities are increasingly adopting a centralized end-of-high-school exam, ENEM, to select applicants. See Machado and Szerman (2016) for more details.

[24] In Portuguese, *Ordem dos Advogados do Brasil* (OAB), the Brazilian equivalent to the American Bar Association.

[25] Students who pass the exam but fail to graduate at their law school, for any reason, do not receive the certification.

77%.[26]

After passing the certification exam, individuals typically work as attorneys or in a directly related occupation. They may be employees in the private or public sector, partners in law firms, or self-employed. For those who fail the exam, jobs associated with the legal system exist in a supporting capacity, similar to paralegals in the US.

4 Data

4.1 UERJ Application

Our primary dataset is from UERJ's admission office, DSEA. We use data on both admitted and non-admitted applicants for the university's law major from 2006 to 2011. This dataset contains 21,284 observations in total, listing applicants by name and date of birth. It includes their scores in each subject of the university's admission exam, ranking position, and application type (non-quota, public school quota, racial quota, or disability quota). There are also indicator variables for whether the applicant was admitted to UERJ, enrolled, and, if so, graduated. Additionally, a socioeconomic profile is available for each applicant, containing information such as family income, type of high school attended (private or public), and parental education (see Table 1). Our analysis uses the sample of first-time applicants within the 2006-2011 time period,[27] restricted to non-AA, public school AA, and racial AA applicants.[28] Considering the full range of admission test scores, this sample contains 16,334 unique observations.

Table **??** presents descriptive statistics for UERJ's law school applicants for the full sample by application type. UERJ's non-AA applicants' socioeconomic status is quite high, as in most selective public universities in Brazil. The Brazilian demographic census of 2010 reports only 14% of household heads or their spouses in Rio de Janeiro state as having a college degree, while 67% of non-AA applicants report having at least one college-educated parent.[29] The 2010 census also reports 73% of households in the state having a total income of five minimum wages or less. Still, only 29% of non-AA applicants in our sample fall under this income group.[30] In contrast, only 16% and 21% of public school- and racial-AA applicants report having at least one college-educated parent, and 86% and 84% report their total family income to be five minimum wages or less, respectively.

Tables **??** and **??** provide information about admissions, cutoff scores, enrollment, and graduation statistics by category of application. In table **??** we see that, among applicants who obtain admission, 88% of non-AA and over 96% of AA applicants enroll in this program. This difference

[26]The three federal universities are *Universidade Federal do Rio de Janeiro* (UFRJ), *Universidade Federal Fluminense* (UFF), and *Universidade Federal do Estado do Rio de Janeiro* (UNIRIO). As mentioned above, they implemented affirmative action quota policies similar to UERJ's in 2013.

[27]We cannot identify individuals whose first application was before 2006

[28]We exclude individuals applying for the disability quota because most years have fewer applicants than slots to fill.

[29]Table 3541 of the 2010 Brazilian Census.

[30]Table 1397 of the 2010 Brazilian Census.

could be due to non-AA applicants having more outside options that are at least as good. Non-AA applicants are subject to a much higher admission cutoff score than AA applicants each year. Between 2006 and 2011, the lowest cutoff score for non-AA applicants was 67.75 points out of 100. The highest public school- and racial-AA cutoff scores were 46.75 and 49.75 points, respectively. Contrary to what one would expect, graduation rates among AA students are not much lower than those of non-AA students. The graduation rate for racial AA students is about 3p.p. below that of non-AA, but the difference is not statistically significant. For public school AA, the difference is larger, 9p.p., and statistically significant, although over 75% of these students appear as having graduated by 2019. Furthermore, AA students take about 0.5 years, or one semester, longer to graduate than their non-AA peers, suggesting that they face greater difficulty progressing through their studies in the law major. This longer graduation time could reflect that they attended a lower quality high school, had fewer resources to prepare for college, or had to work during college, for example.

4.2 Outcomes

We matched UERJ applicants to several data sources to investigate lawyer certification, education, and labor market outcomes. Across all sources of outcomes, we were able to find 90% of non-AA applicants and over 93% of AA applicants (Table **??**). The first outcome we consider is lawyer certification. We scraped the public lists of individuals who passed the certification exam in the state of Rio de Janeiro between 2010 and 2019. We selected this period since the minimum graduation time for law school is five years. There are two lists of successful candidates for each examination cycle (2-4 per year), one for each of the two examination rounds. A limitation of this outcome is that we can only observe applicants who passed at least the first round of the certification exam. Thus, we cannot distinguish applicants who took the exam and did not pass in the first round from those who never applied to the certification exam.

Second, to account for applicants who go straight from undergraduate to graduate studies, we obtained data from CAPES, the Brazilian federal government agency in charge of graduate studies under the Ministry of Education. The CAPES dataset contains information on all students pursuing graduate degrees (masters or Ph.D.) in Brazil, such as the graduate student's full name, year of birth, and partial CPF (government-issued unique identifier).

Third, we combined two data sources to account for the different labor market trajectories typically followed by law graduates: formal employment and law firm partnerships. The first source, RAIS, is a matched employer-employee dataset collected by the Ministry of the Economy, which allows us to identify applicants formally employed by public or private companies. The RAIS dataset is available from 2002 to 2018 and contains rich information about employees, including company employer, occupation, wages, and hours worked for the universe of formally employed individuals in Brazil. We matched UERJ applicants to RAIS records using applicants' full names and dates of birth. This matching allows us to recover individuals' CPF identifiers from RAIS. We matched 65% of the applicant sample (unique individuals) to RAIS. This rate is not surprising

given that lawyers can be self-employed or become partners in a law firm. In either case, they are not listed as a formal employee in RAIS.[31]

The second source, the Brazilian Revenue Service's firm partnership dataset, allows us to account for law firm partnerships. This dataset includes the full name and six (out of eleven) digits of CPF for every individual listed as a partner or an owner of a Brazilian company. We merged this dataset with UERJ in several steps. First, we match by partial CPF and name for UERJ applicants found in RAIS. Then, we matched individuals that we did not find in RAIS using only their full names. In total, we were able to match 8.7% of the applicant sample with firm partnership data.

Lastly, to collect data on college completion for those who applied to UERJ but did not enroll, either by choice or because they did not gain admission, we scraped websites such as the Lattes platform, an online repository of academics' work and achievements. We gathered information on the institution, major, year of entry, and graduation for applicants up to 10 points below the admission cutoff.

5 Identification Strategy

We now describe our empirical strategy for identifying UERJ's affirmative action policy's impact on post-college outcomes. Outcomes of interest include lawyer certification, college completion, labor market participation (law firm partner, employment as lawyer or others), wages, and other job characteristics, which we use as dependent variables in our regressions.

In our choice of main specification we consider the following trade-off between the sharp and fuzzy strategies. Without perfect compliance, the former will result in smaller and more conservative point-estimates for the difference at the cutoff, while the latter requires a larger sample size to compensate for the inclusion of an instrumental variable that accounts for compliance. Since in this setting the sample size around the cutoff, in particular for AA applicants, is more restrictive, and we observe perfect compliance on the side of non-admitted applicants when considering the final cutoff, our main specification relies on a sharp regression discontinuity design with test scores ($Score_i$) as the running variable. We use optimal bandwidths as proposed in (Calonico et al., 2014) to obtain the causal impact on the observed outcomes separately for AA and non-AA applicants.

The main intuition is that limiting the analysis to applicants who scored close to the cutoff, above and below, the estimated difference in outcomes from being admitted to UERJ or not would be unaffected by non-observable characteristics. We find that applicants around each specific cutoff do not differ systematically in observable dimensions, as shown by figures 6 and 5. Thus, we interpret the main difference between candidates above and below cutoff to be that the former obtained UERJ's law school admission, and the latter did not. To increase our sample size and

[31] We used a combination of exact name matches (over 97% of our pairings) and fuzzy string matches, both conditional on the date of birth, to obtain the matched sample. In particular, we used fuzzy matches for abbreviated last names and married name changes. Brazilian names tend to be longer than American names because they typically include both the mother's and father's surnames). The modal name in our data has four words, which is also the average. Paired with the date of birth, this gives our matches a low probability of being false positives.

improve statistical power, we adjust scores by centralizing the cutoff score on zero for each group of applicants and year. We then pool application years according to the availability of outcomes in each period of time.

We rely on data-driven methods from Calonico and Calonico (2018) to estimate the Local Average Treatment Effect (LATE) of the AA policy for AA and non-AA applicants separately, and for multiple post-college outcomes of interest. Based on Calonico et al. (2014), these methods produce robust confidence intervals that allow us to draw valid inferences from these estimates.

As usual, the validity of the RD strategy relies on a set of assumptions. We start by showing that the assignment probability to treatment jumps discontinuously at the cutoff. Figures 2 and 3 illustrates the jump for admission at UERJ for non-AA and AA applicants. While no applicant with a score below the cutoff obtains admission, compliance above the cutoff, meaning enrollment-admission ratio, is about 88% for non-AA applicants and over 96% for AA applicants, as shown in table **??**.

In our setting, manipulation around cutoff scores would be unfeasible. As the cutoff scores depend on other applicants' scores and enrollment decisions, applicants only learn the cutoff scores at the end of the admission process. Still, we confirm the absence of manipulation in Figure 4 for the non-AA and AA samples and each specific type of AA application.

Finally, we present balancing checks for the probability of having at least one academic or labor market outcome in our sample for applicants around the cutoff (Figures 7 and 8). These figures confirm that all outcomes tracking are balanced around the cutoff.

6 Results

In our setting, the AA policy caused the cutoff score for non-AA applicants to rise a few points while lowering it substantially for AA applicants. Since the effect on the cutoff score is different between AA and non-AA applicants, the interpretation of results also differs. For non-AA applicants, we analyze the impact on applicants who fall on the 'left side' of the cutoff (scoring slightly below the cutoff) instead of the 'right side.' Thus, we investigate the effect of the policy on displaced applicants. In contrast, for AA applicants, the policy impacted applicants on the right side of the AA cutoff by granting them admission. Thus, the left side of the cutoff score is our baseline for what would have happened to the applicants admitted had the AA policy not been in place.

We present results starting at the 7th year after each individual's first UERJ law application. Our choice of timing is informed by the average time to graduation of each application category reported in Table **??** (5.9 years for non-AA and 6.4 and 6.6 for public school-AA and racial-AA, respectively). We observe all cohorts from 2006 to 2011, seven years after university application in our labor market data. However, since our last year of RAIS is 2018, we do not observe a cohort for each additional year in our estimates. To show this variation explicitly with our estimates, we include the number of observations selected by the optimal bandwidth algorithm below each year in our figures.

6.1 College degree and Lawyer Certification Exam

Figures 9 and 10 present estimates of the difference in college completion and lawyer certification rates for AA and non-AA applicants close to their respective cutoffs, for seven to ten years after the first application attempt.

In Figure 9, we see a positive increase in college completion of 20.4 p.p. and 22.6% for AA applicants seven and ten years after university application, respectively. Although the difference is not significant for the other years observed, the estimated coefficients are still positive.

For non-AA applicants, the RD estimates are very close to zero in all years. Despite having a larger sample than for the AA estimates, we do not find evidence of a statistically significant difference between displaced and admitted applicants around the cutoff. Seven years after the first application to UERJ's law program, more than 81% of (non-AA) applicants close to the cutoff on both sides completed college in our data. By year ten, the college completion rate reaches over 88% for both groups and appears to increase very little for the older cohorts analyzed in subsequent years.

Figure 10 shows the RD estimates for passing the lawyer licensing exam separately by application category and time after the first application attempt. For AA applicants, we can observe a striking increase of over 20 p.p. in passing rates for admitted applicants slightly above the admission cutoff score for almost ever year in sample. Since about 20% of non-admitted AA applicants pass the lawyer licensing exam by year seven after their first application to UERJ's law program, this result indicates that the AA policy has doubled the passing rate for beneficiaries at the margin of admission. Examining the pattern of older cohorts for longer periods, we see that the relative difference might not be as large as in year seven. Still, the difference persists over 20 p.p. and is statistically significant at the 5% level until year nine. Only in year ten, we see this difference drop to 18.3 p.p., at a 10% significance level, which may be a reflection of the decrease in sample size.

The non-AA RD estimates for the lawyer licensing exam are similar to the college completion ones. The point estimates are much closer to zero than those of AA for every year and are not statistically significant. Again, we can observe the general levels of non-AA applicants from either side of their cutoff being higher than that of the AA applicants for every year analyzed.

6.2 Placement and Occupations in the Labor Market

We now check the impact of admission to UERJ's law program on labor market placements for AA and non-AA applicants. In figure 11, we show that non-admitted AA applicants appear to enter the labor market as an employee earlier than those who were admitted. The latter displays a formal employment pattern more similar to their non-AA admitted peers, with a more modest representation in the formal employment market for most years analyzed. This pattern can be interpreted both as a delay in entry or the result of more working options, inherent to a career as a lawyer, such as being an associate at a law firm or being self-employed. However, there is nearly no difference in labor market participation for both groups ten years after college application between those admitted and those not admitted to UERJ.

Next, we analyze the effect of the policy on the likelihood to work in the law sector, regardless of the job, shown in figure 12. We find suggestive evidence that UERJ's AA policy has increased the probability of AA applicants working in the sector ten years after college admission. However, the coefficient is not statistically significant, possibly due to the small sample size. Similarly, there is a slight decrease in the probability of non-AA applicants working in the law sector, but the confidence interval is quite large.

In Figure 13, we restrict our outcome of interest to employment as a lawyer. Our definition includes both formal employment as a lawyer and law firm associates. While admission to UERJ does not seem to have an impact on the probability of non-AA applicants becoming lawyers, we find suggestive evidence of a large impact on AA applicants starting at nine years after the first college application attempt. Being admitted to UERJ increases employment as a lawyer by 16.6 percentage points then, which is significant at the 5% level.The confidence intervals substantially increase when we restrict the outcome to ten years after UERJ's law school application, as the sample size diminishes. Still, the magnitude of the coefficient is very similar, suggesting a large increase as well, even if imprecisely estimated.

6.3 Graduate Degree in Law

Figure 14 suggests that admission to UERJ's law school may also have increased AA applicants' propensity to pursue a graduate degree in law. Although small, the effect is consistently positive for AA beneficiaries close to the cutoff between 7 and 10 years after the first college application. After 8 years, we estimate a local increase of 4.5 percentage points, significant at a 10% level. After 9 years, we observe a 6.5 p.p. increase, statistically significant at a 5% level. This represents a large impact for AA beneficiaries, as there are almost no applicants on the left-hand side of the cutoff pursuing a graduate degree in law. While the coefficient is negative for non-AA applicants in the period under analysis, it is only marginally significant on the last year observed, 10 years after the first application.

6.4 Wages in the Labor Market

Figure 15 presents our RD results for hourly wages reported in the matched employer-employee dataset, RAIS. With matching rates ranging between 40 and 60% on average for different categories of applicants and sides of each category of the cutoff score, we take these estimates with a grain of salt.

We were able to match up to 65% of our sample of AA applicants scoring up to five points above the cutoff, for instance, while matching up to 76% of than their counterparts below the cutoff. We matched relatively fewer non-AA applicants close to the cutoff, i.e., up to 65% of those displaced by the policy and 62% of those admitted.

In both AA and non-AA cases, our RD point estimates suggest very little difference in hourly wages for this restricted set of applicants either below or above each cutoff score. However, we find a pattern of non-AA applicants close to their relevant cutoff score displaying better average outcomes

than those of AA applicants around their cutoff score. The hourly wages of non-AA applicants found in RAIS are estimated at R$50.00 across all years, regardless of cohort restrictions. In contrast, the estimated average hourly wage of AA applicants found in RAIS is below R$25.00 in all, but one case admitted applicants at year nine.

In addition to the loss in statistical power, we believe these differences could be pointing towards a selection bias on formal employment. Anecdotal evidence suggests that wages are lower at firms that hire lawyers as employees, and higher at firms that bring in lawyers as associates, with firm ownership. However, they also report that experience from a few low-paying big companies is valued at prestigious law firms, which can be exploited strategically when entering a career in law.

7 Conclusion

This study contributes to the literature on affirmative action by exploring the fact that an AA policy was used in a university that relies uniquely on a test score as the admission determinant, and the existence of a high stakes post-graduation exam. Although the estimates presented here rely on narrow scope data and context, they bring evidence to the ongoing discussion on affirmative action outcomes for more than one perspective.

With the caveat of being a local effect, these findings suggests that an affirmative action policy in a high-quality university can boost underprivileged students to a great extent, allowing them to come close to catching up to students who had a better start, without undermining the latter, who presumably have access to many other (public and private) universities. However, many more questions arise regarding the impact on other majors and labor market outcomes, left as a suggestion for future research.

This study is a work in progress, with much room for improvement. We expect to be able to increase the quality of our matches, in particular with regard to the firm ownership data, by using the individual identifiers from RAIS to rule out false positives. We also expect to be able to increase our labor market matches by including the recently released 2018 RAIS, and continue to scrape the web to complement the information available that is not present in any of the datasets mentioned. We intend to add a direct comparison between displaced and displacing applicants, as a measure of how much quota students are able to "catch-up" to the more privileged groups of students displaced by the policy. Given the numerous outcomes available in this study, we plan to include tests for multiple hypothesis along with other robustness checks in future versions. Another natural extension of this work include (i) adding covariates to our estimations, (ii) explore the panel data that can be built from annual data from RAIS and date of partnership entry from the firm ownership data.

The recent debate surrounding the potential role of students reallocation across universities in promoting social mobility (Chetty et al., 2020b) ensures a renewed interest in this subject.

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A UERJ Admission

UERJ's admission process consists of two separate rounds of exams. The first one is a qualifying multiple-choice test, administered twice a year (UERJ considers only the higher score that the student obtained in a given year). Only applicants who correctly answer more than 40% of the questions can apply for the second round of examination. When registering for the second round, applicants must choose a major, which determines the specific subjects tested in a written exam in this round.[32] Additionally, all applicants have to write an essay in the second round. The final score can total up to 100 points, in a combination of second-round scores (20 point maximum for the essay and each specific subject, with a double weight on the priority subject, totaling 80 points) and bonus points from the first round (20 points maximum).[33] Applicants who score between 100 and 20 points are ranked by major. Admission offers are made to top-ranked candidates until UERJ fills all available major-specific spots.

AA applicants must undergo additional steps in the application process to confirm their eligibility for a reserved (quota) spot. They have to submit an additional quota-specific application

[32]For example, applicants opting for law school take language (priority) and history tests, and applicants choosing engineering take mathematics (priority) and physics tests.

[33]A minimum of 70% of questions answered correctly grants a 20-point bonus, between 60 and 70% a 15-point bonus, and between 50 and 60% 10-point bonus. The lowest bonus value is 5 points, given to those scoring between 40 and 50%.

form and turn in several documents to attest that their family per capita income falls below the eligibility threshold. Additionally, individuals applying under public school quotas must submit school transcripts, and those selecting racial quotas must self-declare as black or indigenous on the registration form. Interviews and a home visit by a member of UERJ's "socioeconomic analysis commission" may also apply.[34]

Furthermore, UERJ provides financial support to low-income students admitted through any of the quota categories in the form of a monthly stipend.[35] This financial support is only given to quota students and is conditional on enrollment, a minimum 75% of class attendance rate, and annual verification of the student's low-income status. Failure to qualify as low-income in a given year only impacts eligibility to receive financial support, and the student is permitted to retain their spot at UERJ until graduation.

[34]This commission is in charge of managing and supervising matters related to students admitted through the quota policy throughout their undergraduate studies. It is not uncommon for this commission to receive and investigate fraud reports, leading to the student's expulsion if substantiated.

[35]In 2010, the allowance was R$300.00 (approximately US$100.00), nearly half of the state minimum wage.

B Figures and Tables

Tables

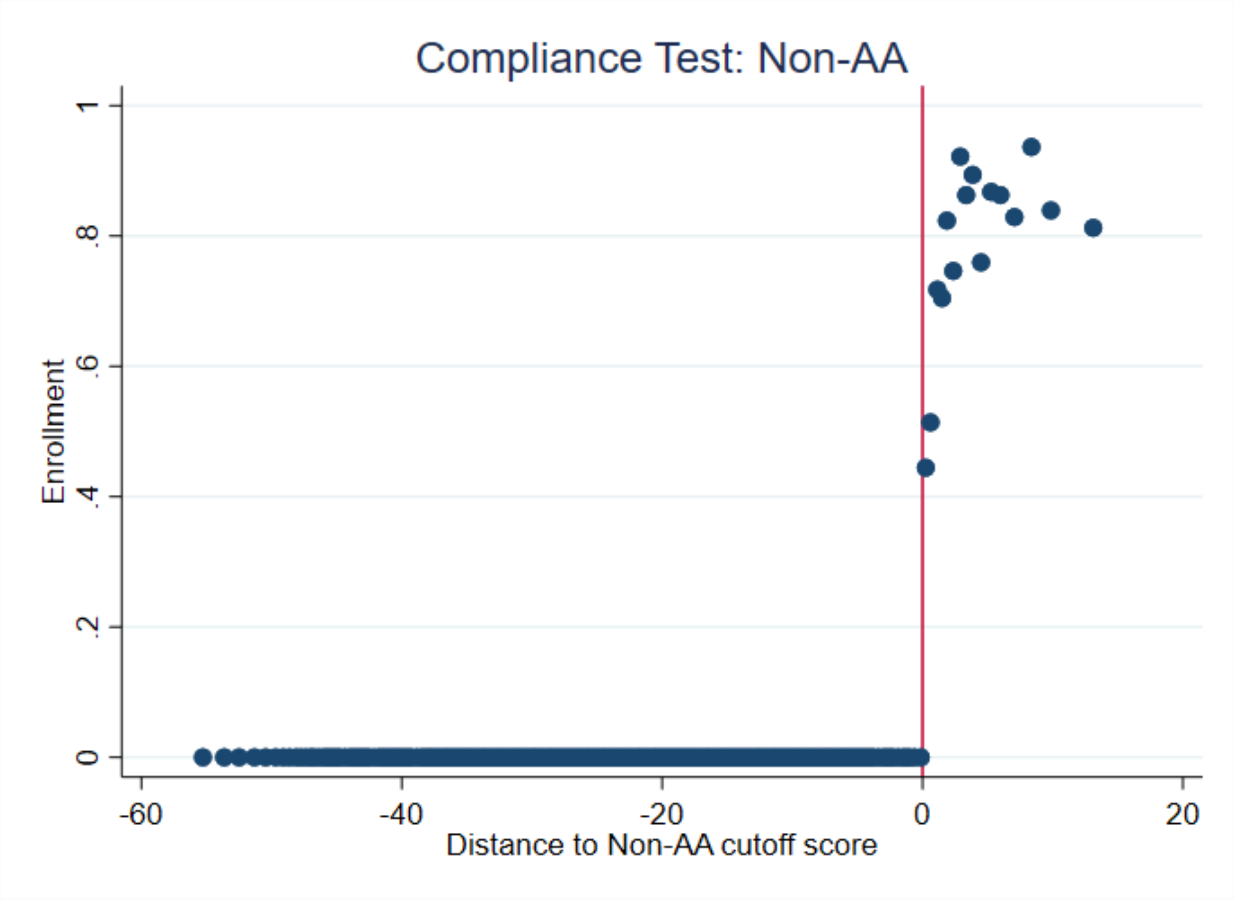
	Non-AA	Public School AA	Racial AA
Age	19.5	21.6	22.8
Gender: Male	0.43	0.44	0.42
Self-reported Race			
Black	0.09	0.09	0.69
Mixed	0.22	0.35	0.27
White	0.64	0.52	0.05
Parental Education			
At least one parent w/ college degree	0.66	0.16	0.21
Father: HS or less	0.37	0.73	0.67
Father: College or more	0.52	0.09	0.13
Mother: HS or less	0.38	0.81	0.80
Mother: College or more	0.53	0.09	0.11
Family Income			
Up to 5 Minimum Wages	0.30	0.86	0.83
Between 5 and 20 Minimum Wages	0.45	0.08	0.11
More than 20 Minimum Wages	0.16	0.00	0.00
Circumstances and Opportunities			
Graduated from Public High School	0.25	0.98	0.52
Evening School	0.05	0.16	0.18
Extracurricular language classes	0.79	0.48	0.53
Personal computer at home	0.91	0.61	0.62
Lives in family owned property	0.74	0.52	0.49
Family owns 1 or more auto vehicles	0.76	0.27	0.27
Receives allowance from family	0.31	0.08	0.09
Never worked	0.78	0.48	0.46
Contributes to family's income	0.13	0.31	0.32
N Observations	19,009	1,170	1,088

	Non-AA	Public School AA	Racial AA
Slots per year	172	62	62
Enrollment ratio	0.88	0.96	0.96
Average Ranking	106	1,557	1,712
Average Score	76.30	51.39	49.49
Highest Cutoff Score	76.75	46.75	49.75
Lowest Cutoff Score	67.75	34.25	33.00
Enrolled Students			
Graduated by 2019	0.85	0.75	0.81
Average time to graduation (years)	5.9	6.5	6.6

	Non-AA	Public School AA	Racial AA
2006	67.75	37.50	33.00
2007	69.00	34.25	34.00
2008	70.75	39.50	40.50
2009	75.00	45.50	43.00
2010	69.50	39.25	35.75
2011	76.75	46.75	49.75

	Non-AA	Public School AA	Racial AA
All Sample			
At least one outcome	0.90	0.94	0.93
Sample within 10 points of cutoff			
At least one outcome	0.96	0.95	0.95
Labor Market	0.92	0.93	0.92
Academic	0.91	0.93	0.91
Webscraping	0.92	0.75	0.70

Figure 2:



Figures

Sample checks

Figure 3:

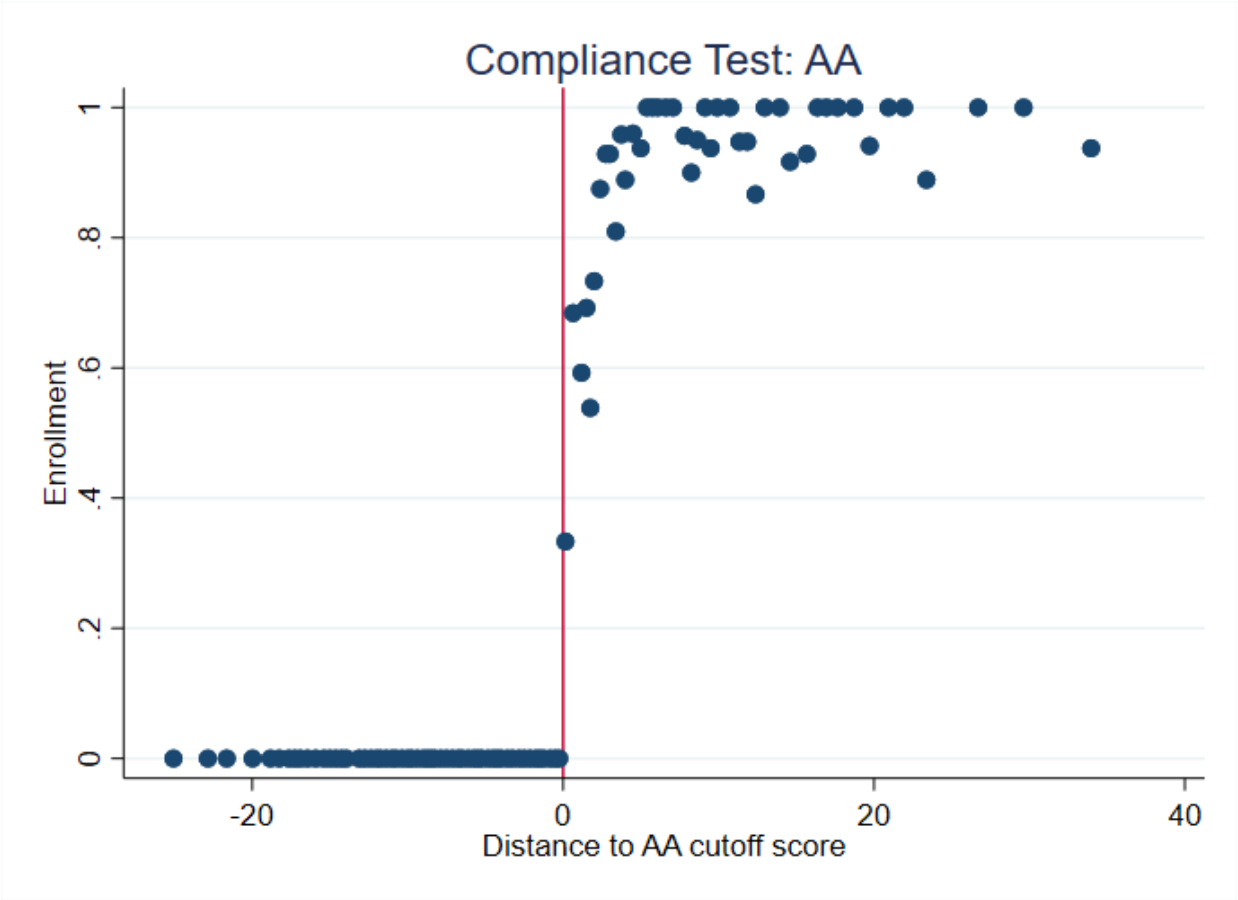

Compliance Test: AA
Enrollment
0
.2
.4
.6
.8
1
-20
0
20
40
Distance to AA cutoff score

Figure 4:

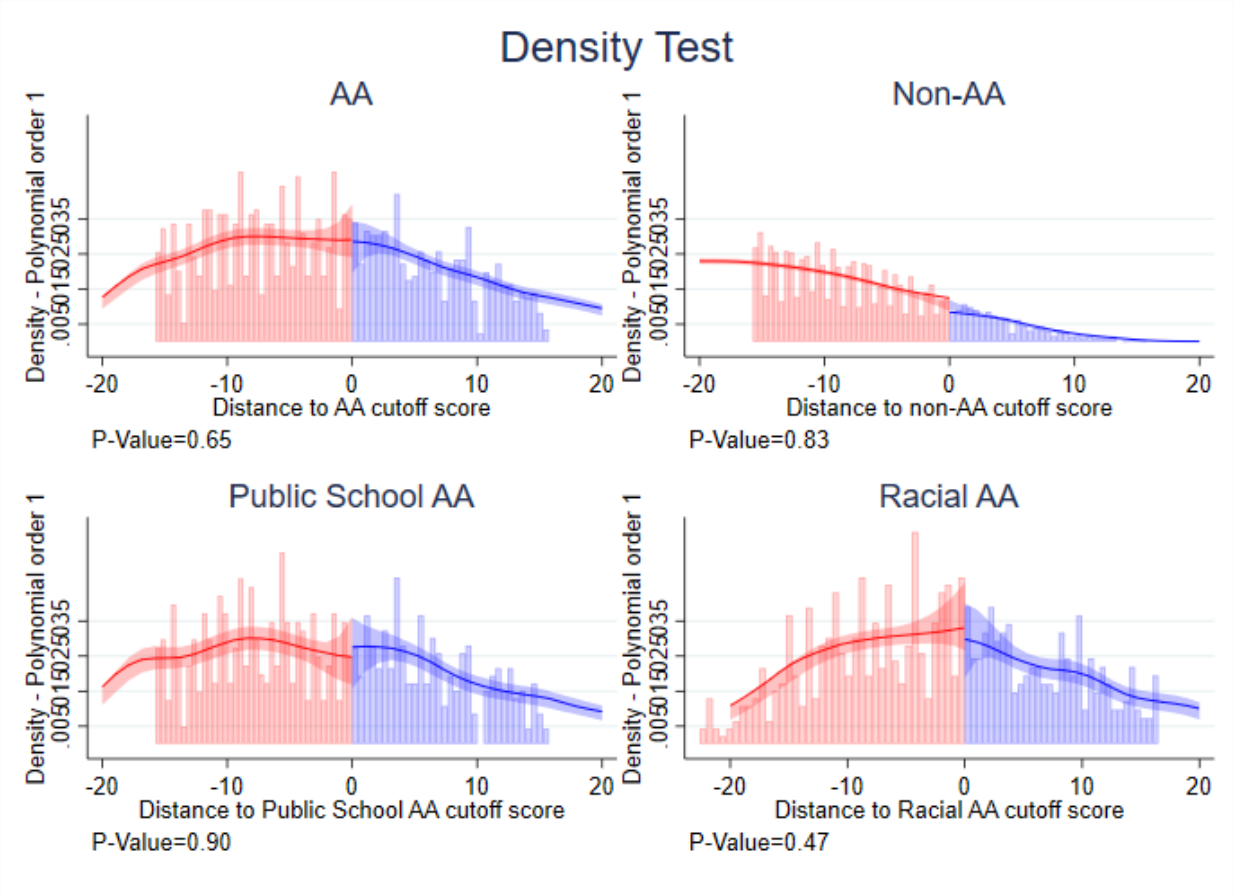

Density Test
AA
Density - Polynomial order 1
.005
01
5
02
5
03
5
-20
-10
0
10
20
Distance to AA cutoff score
P-Value=0.65
Non-AA
Density - Polynomial order 1
.005
01
5
02
5
03
5
-20
-10
0
10
20
Distance to non-AA cutoff score
P-Value=0.83
Public School AA
Density - Polynomial order 1
.005
01
5
02
5
03
5
-20
-10
0
10
20
Distance to Public School AA cutoff score
P-Value=0.90
Racial AA
Density - Polynomial order 1
.005
01
5
02
5
03
5
-20
-10
0
10
20
Distance to Racial AA cutoff score
P-Value=0.47

Figure 5:

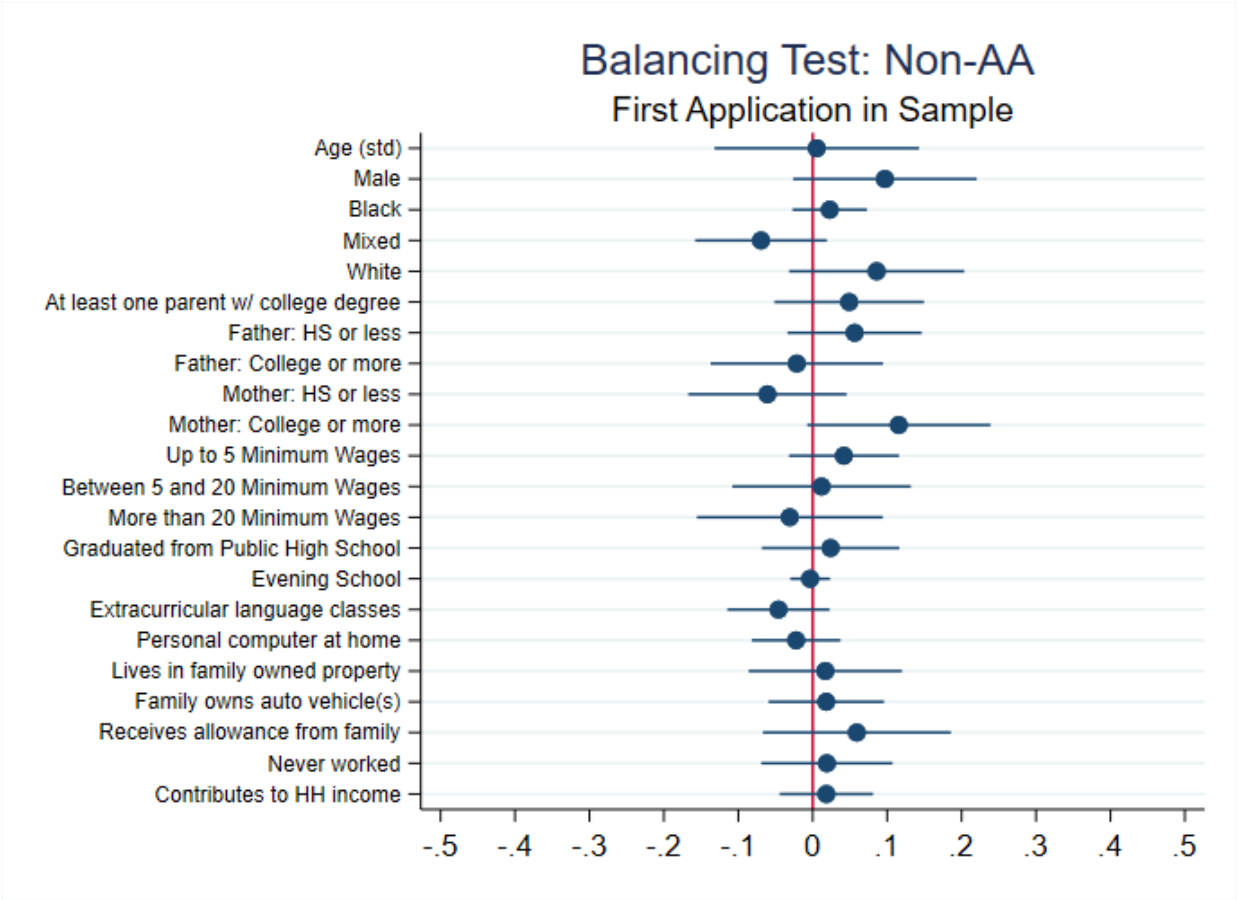

Balancing Test: Non-AA
First Application in Sample
Age (std)
Male
Black
Mixed
White
At least one parent w/ college degree
Father: HS or less
Father: College or more
Mother: HS or less
Mother: College or more
Up to 5 Minimum Wages
Between 5 and 20 Minimum Wages
More than 20 Minimum Wages
Graduated from Public High School
Evening School
Extracurricular language classes
Personal computer at home
Lives in family owned property
Family owns auto vehicle(s)
Receives allowance from family
Never worked
Contributes to HH income
-.5
-.4
-.3
-.2
-.1
0
.1
.2
.3
.4
.5

Figure 6:

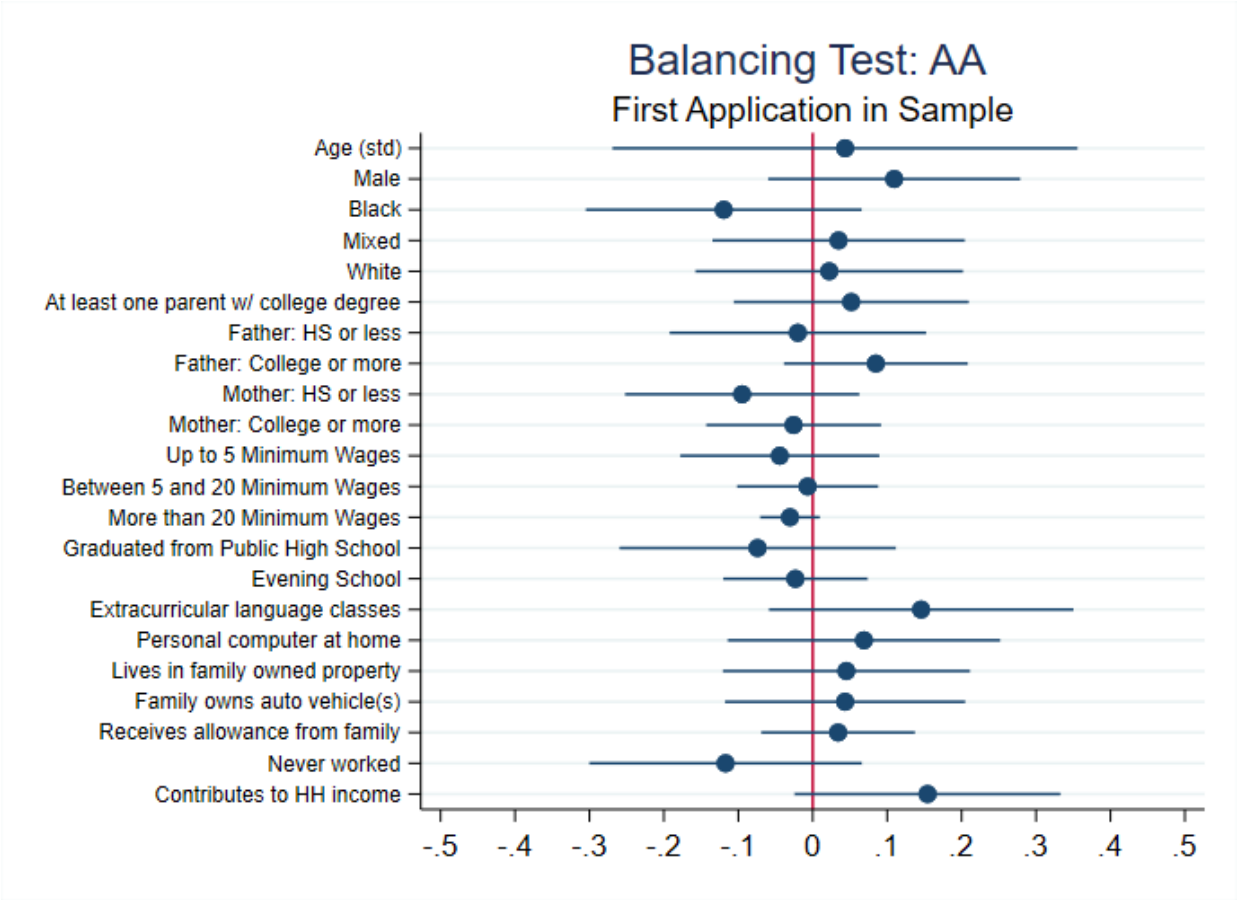

Balancing Test: AA
First Application in Sample
Age (std)
Male
Black
Mixed
White
At least one parent w/ college degree
Father: HS or less
Father: College or more
Mother: HS or less
Mother: College or more
Up to 5 Minimum Wages
Between 5 and 20 Minimum Wages
More than 20 Minimum Wages
Graduated from Public High School
Evening School
Extracurricular language classes
Personal computer at home
Lives in family owned property
Family owns auto vehicle(s)
Receives allowance from family
Never worked
Contributes to HH income
-.5
-.4
-.3
-.2
-.1
0
.1
.2
.3
.4
.5

Figure 7:

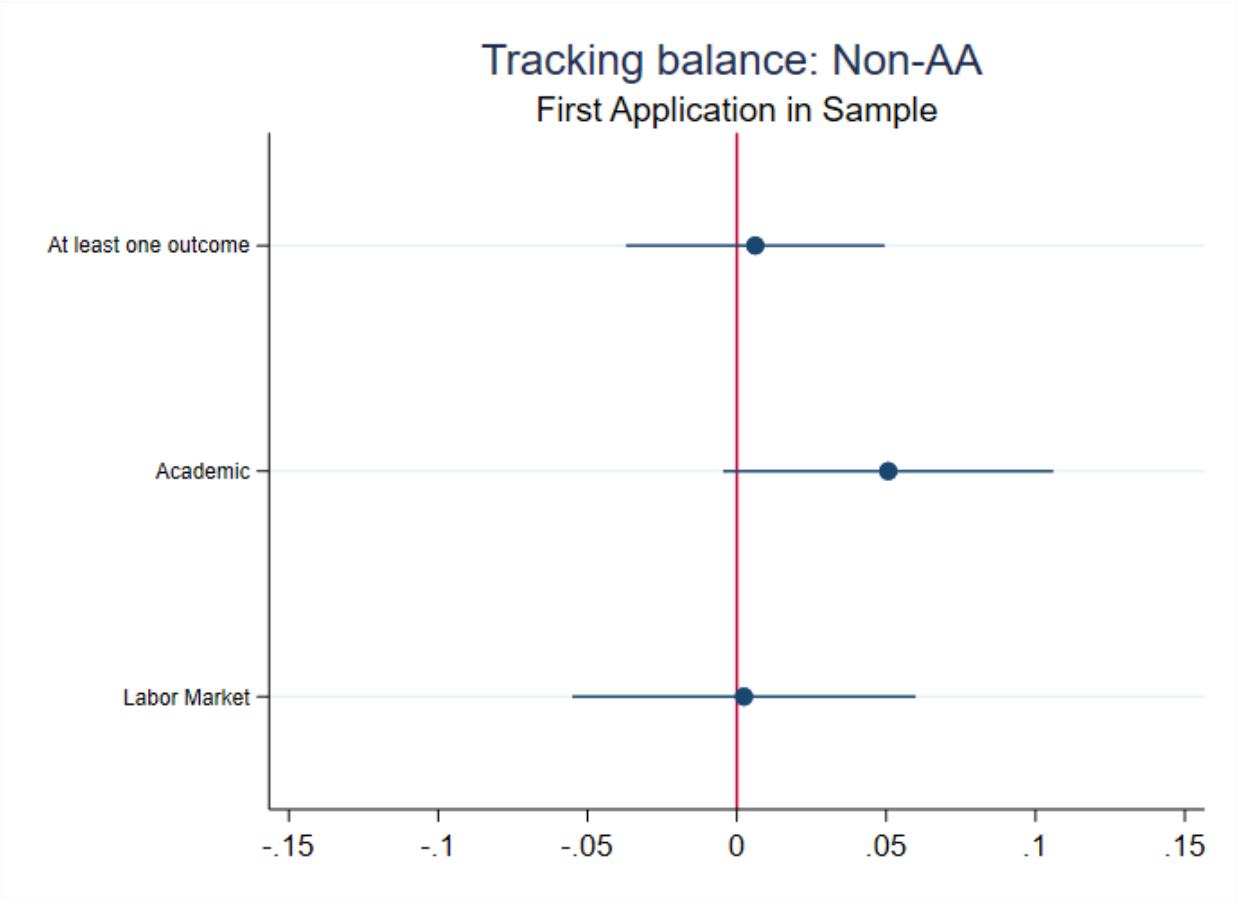
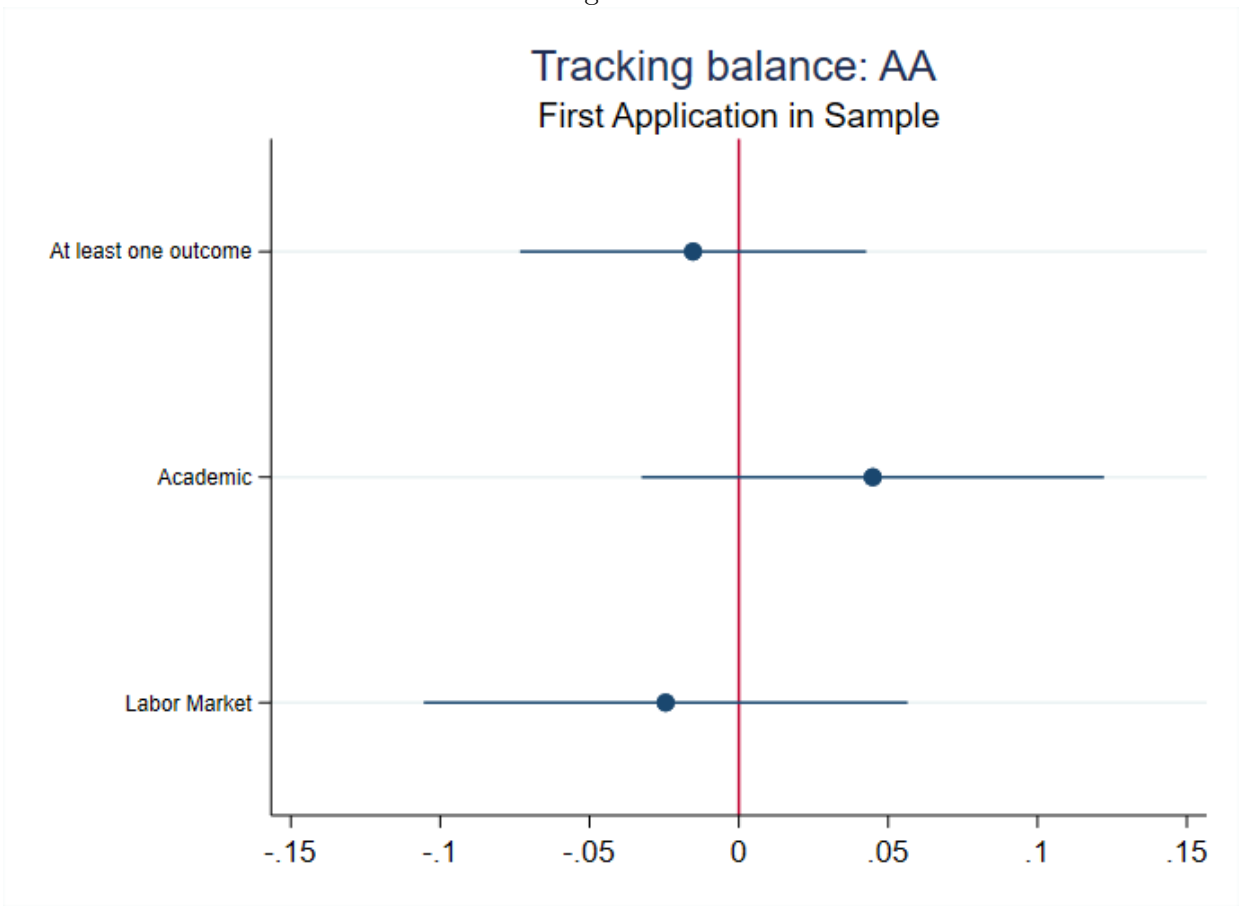

Tracking balance: Non-AA
First Application in Sample
At least one outcome
Academic
Labor Market
-.15
-.1
-.05
0
.05
.1
.15

Figure 8:


Tracking balance: AA
First Application in Sample
At least one outcome
Academic
Labor Market
-.15
-.1
-.05
0
.05
.1
.15

Outcomes

Figure 9:

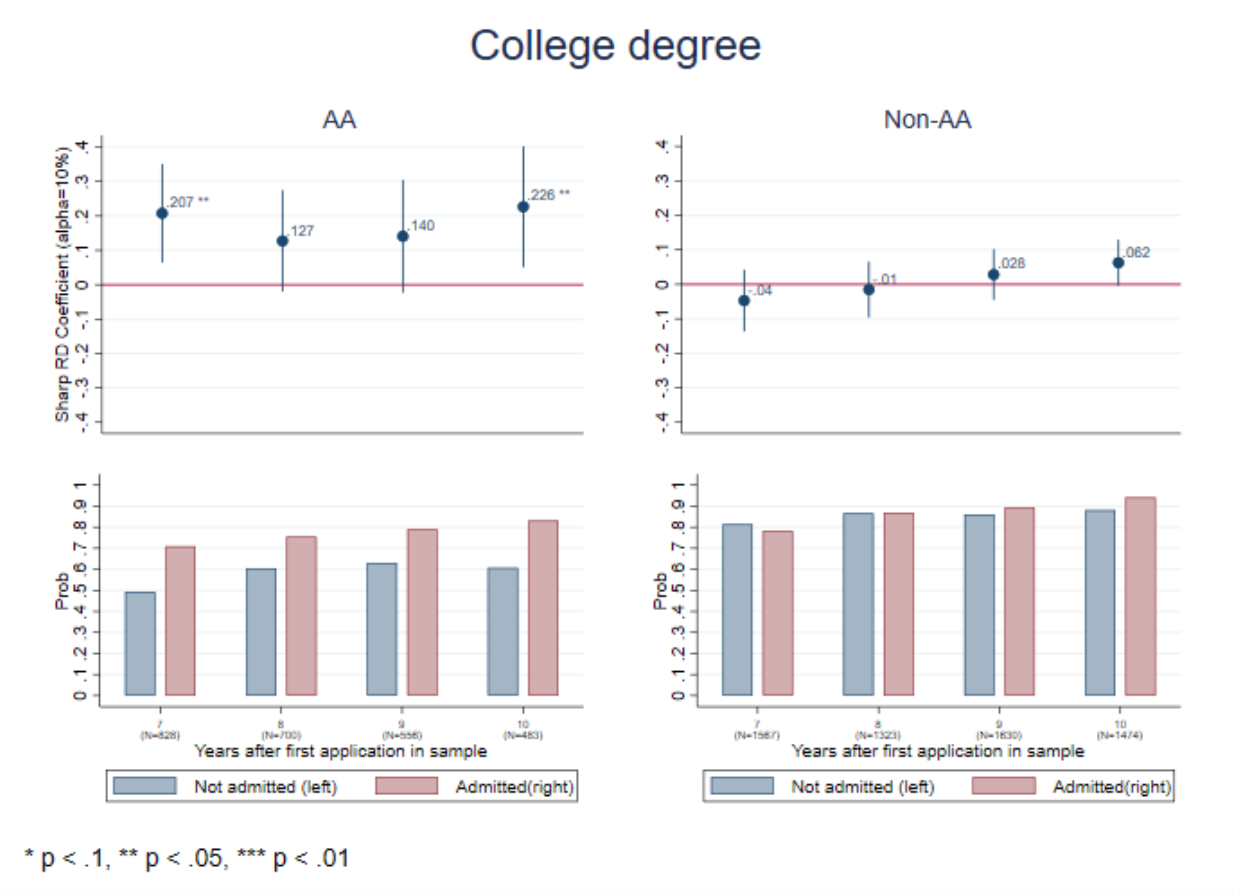


Figure 10:

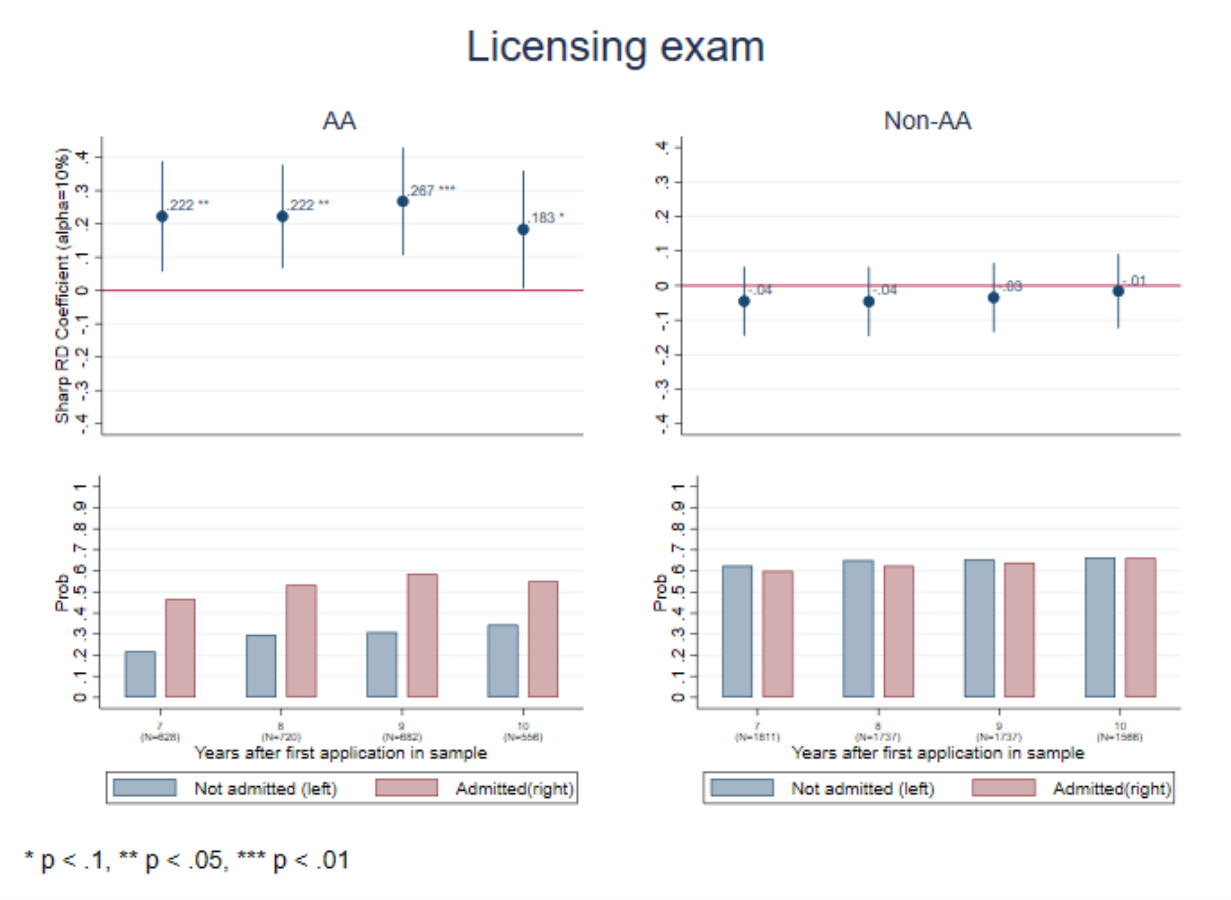

Licensing exam
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
.222 **
.222 **
.267 ***
.183 *
.04
.04
.03
.01
Prob
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 11:

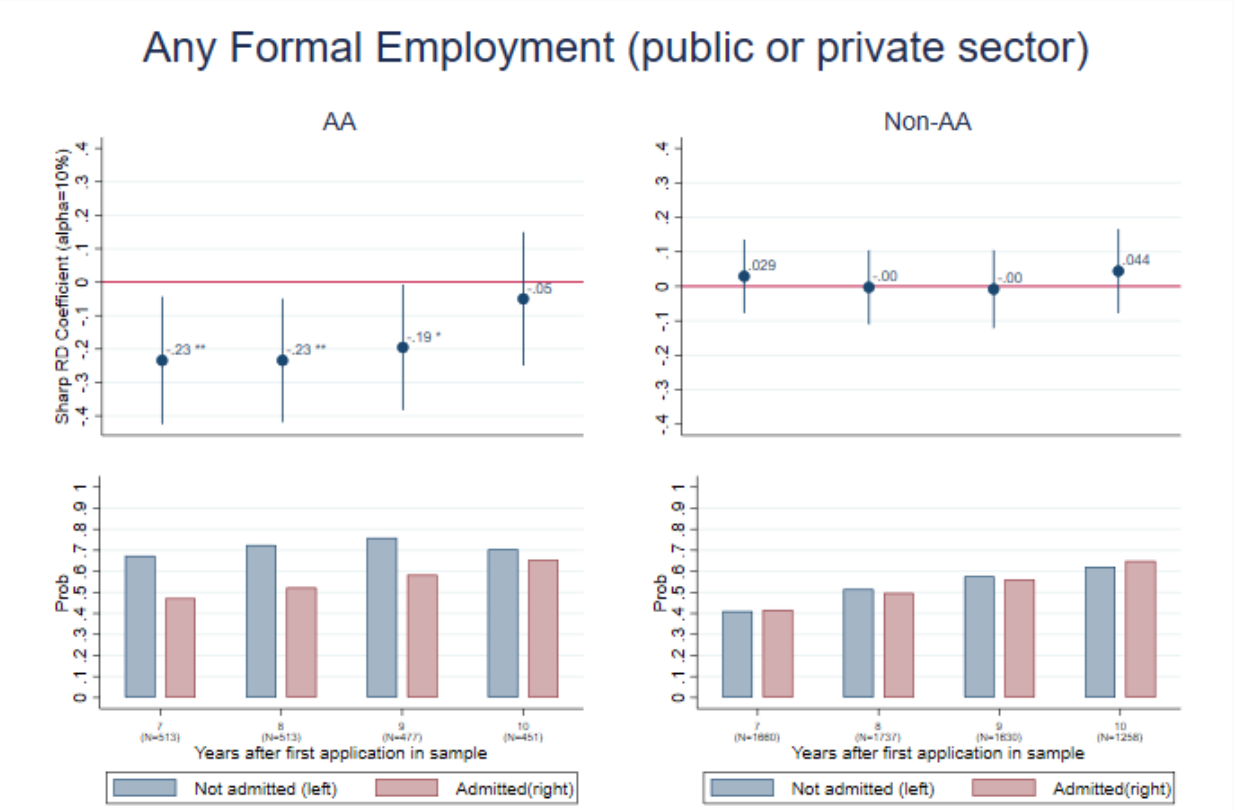

Any Formal Employment (public or private sector)
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
-.23 **
-.23 **
-.19 *
-.05
.029
-.00
-.00
.044
Prob
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 12:

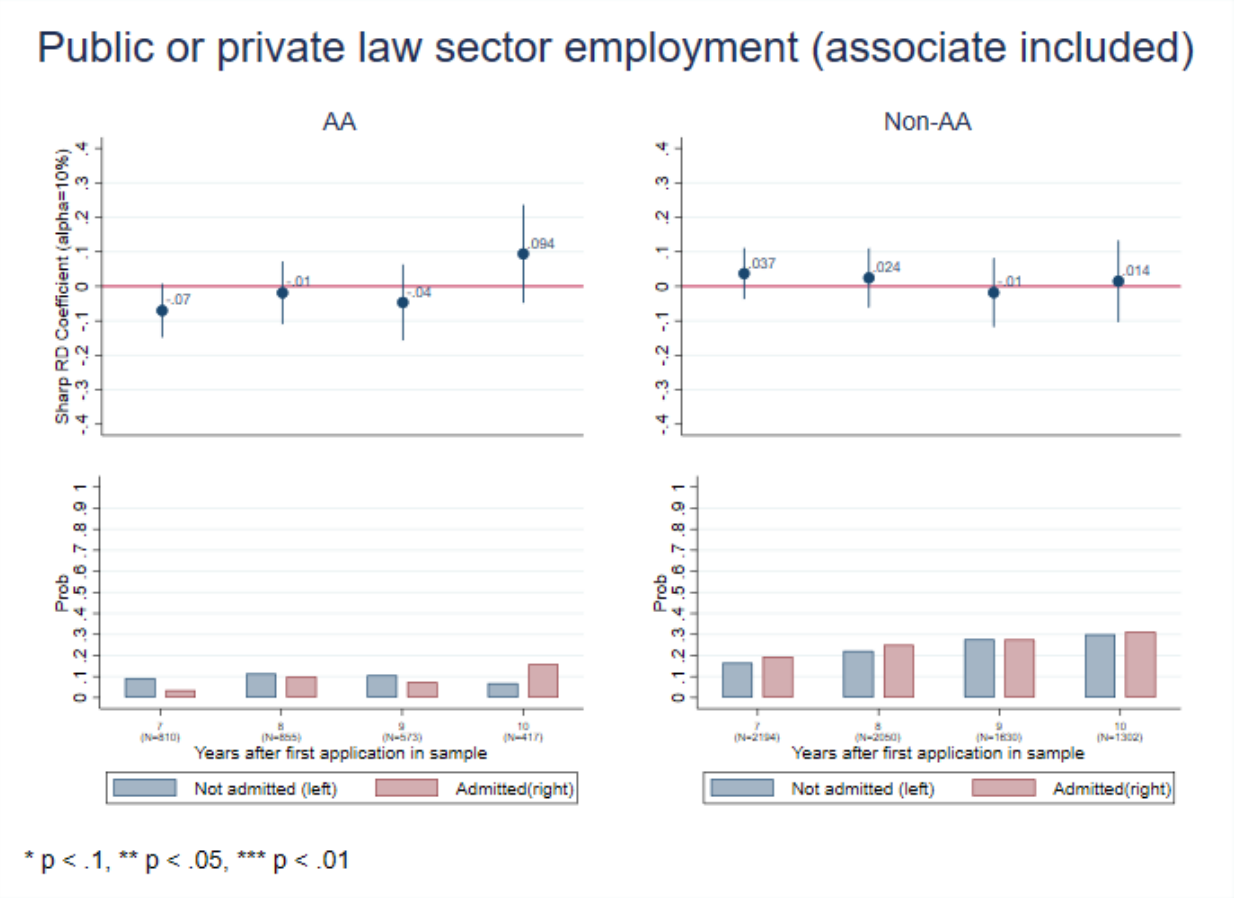

Public or private law sector employment (associate included)
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
-.07
.01
-.04
.094
.037
.024
.01
.014
Prob
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 13:


Employed as a lawyer (associate included)
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
-.4 -.3 -.2 -.1 0 .1 .2 .3 .4
-.00
.029
.042
.169 **
-.00
.000
.02
.02
Prob
0 .1 .2 .3 .4 .5 .6 .7 .8 .9 1
7 (N=720)
8 (N=720)
9 (N=602)
10 (N=461)
7 (N=2050)
8 (N=1878)
9 (N=1957)
10 (N=1302)
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 14:

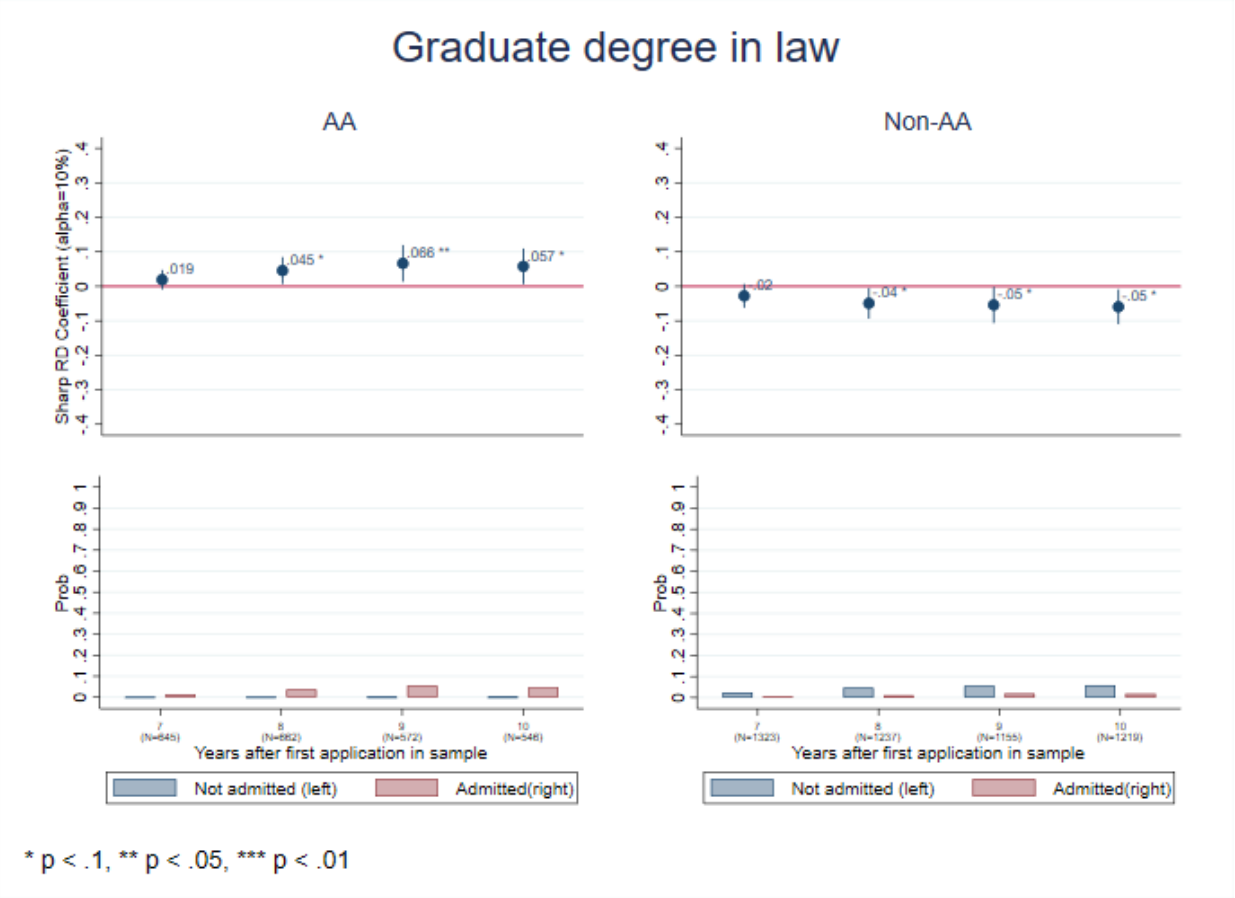

Graduate degree in law
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
.019
.045 *
.066 **
.057 *
.02
-.04 *
-.05 *
-.05 *
Prob
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 15:

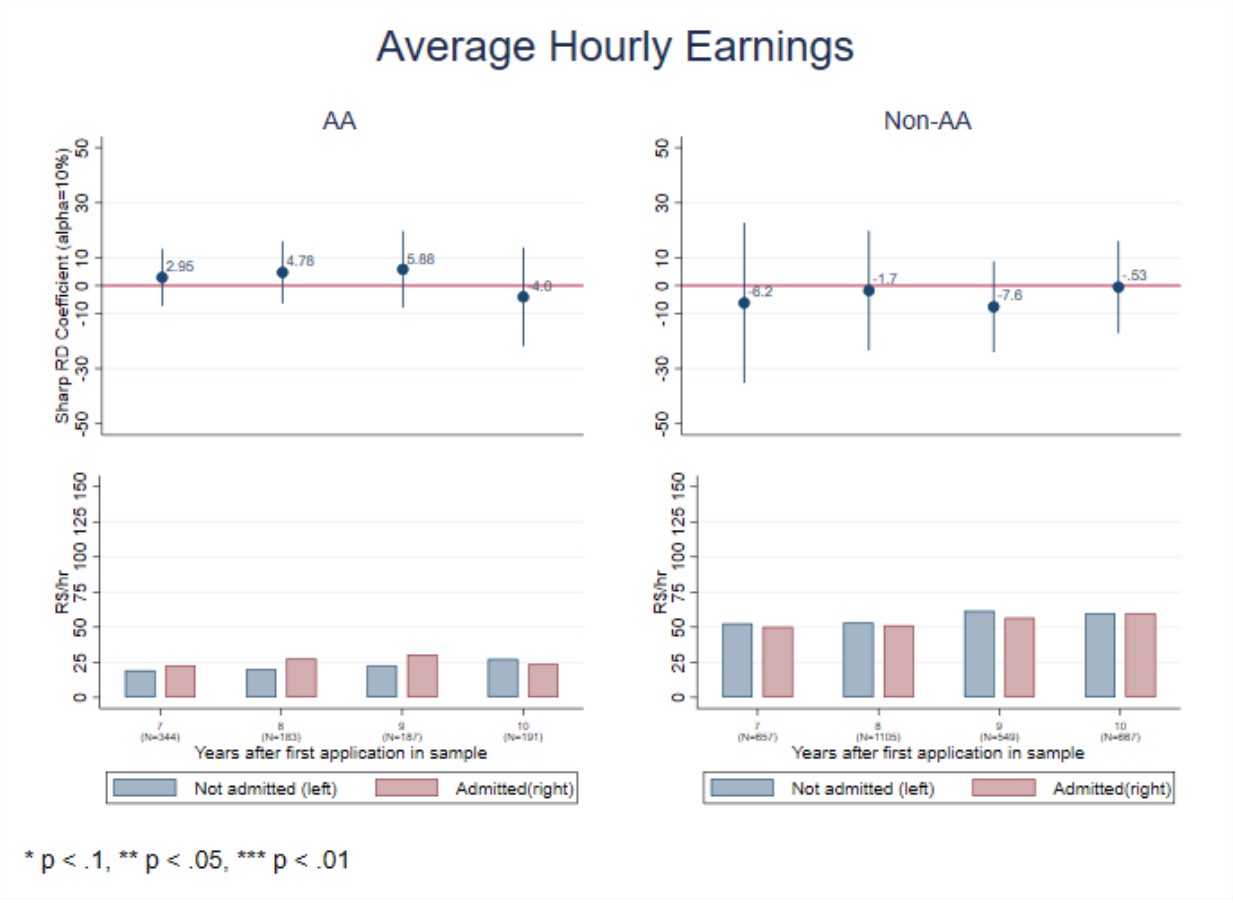

Average Hourly Earnings
AA
Non-AA
Sharp RD Coefficient (alpha=10%)
2.95
4.78
5.88
-4.0
-6.2
-1.7
-7.6
-.53
R$/hr
Years after first application in sample
Not admitted (left)
Admitted(right)
* p < .1, ** p < .05, *** p < .01

Figure 16:

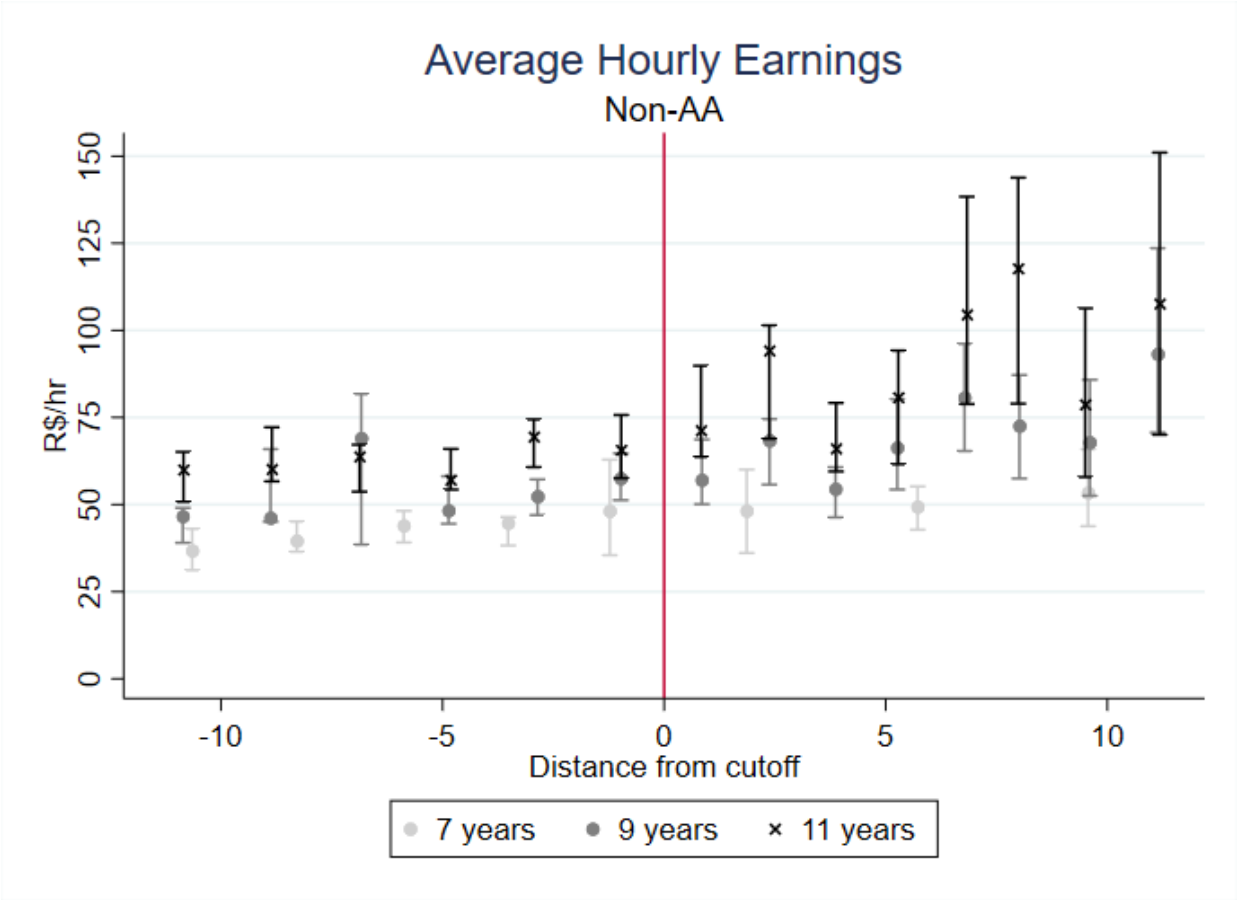

Average Hourly Earnings
Non-AA
R$/hr
0
25
50
75
100
125
150
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 17:

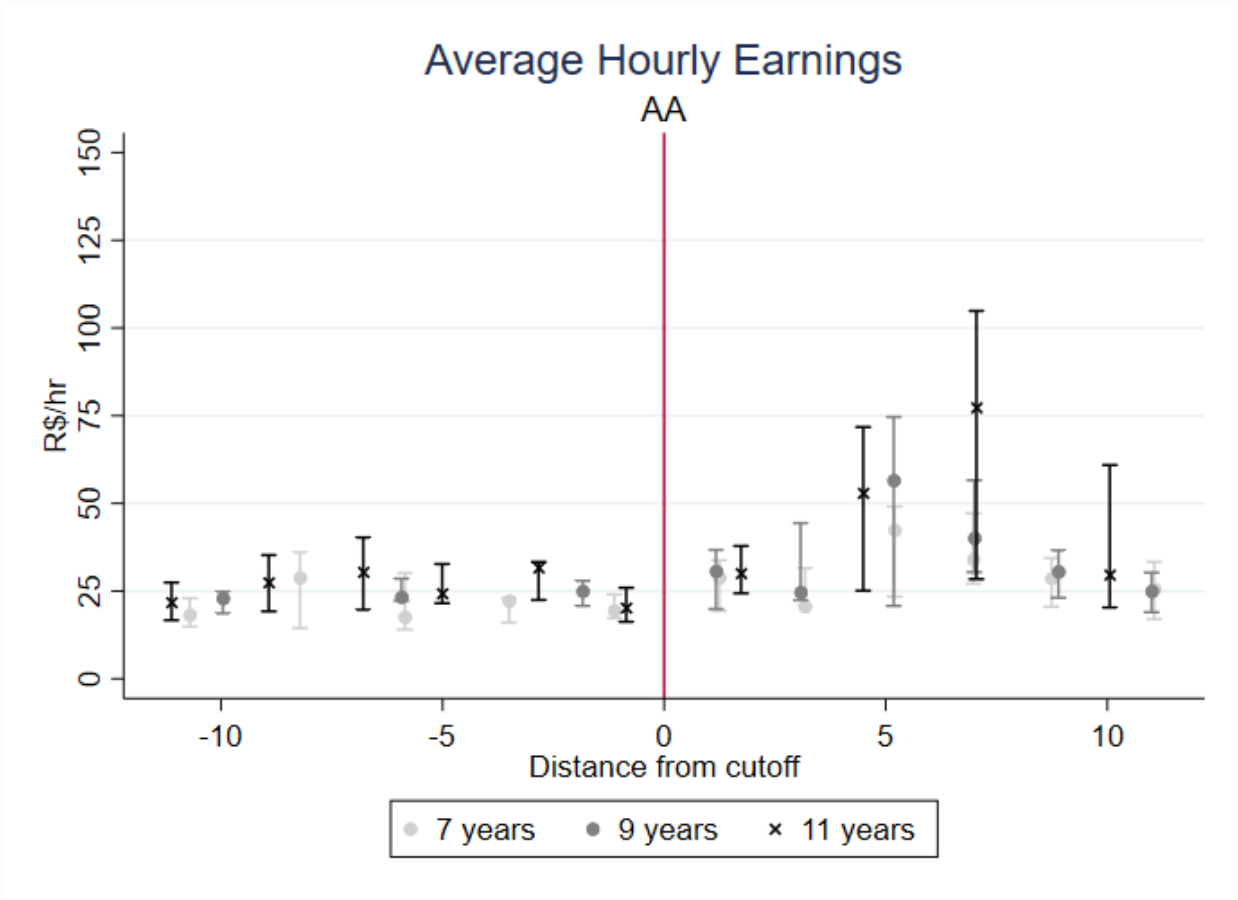

Average Hourly Earnings
AA
R$/hr
0
25
50
75
100
125
150
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 18:

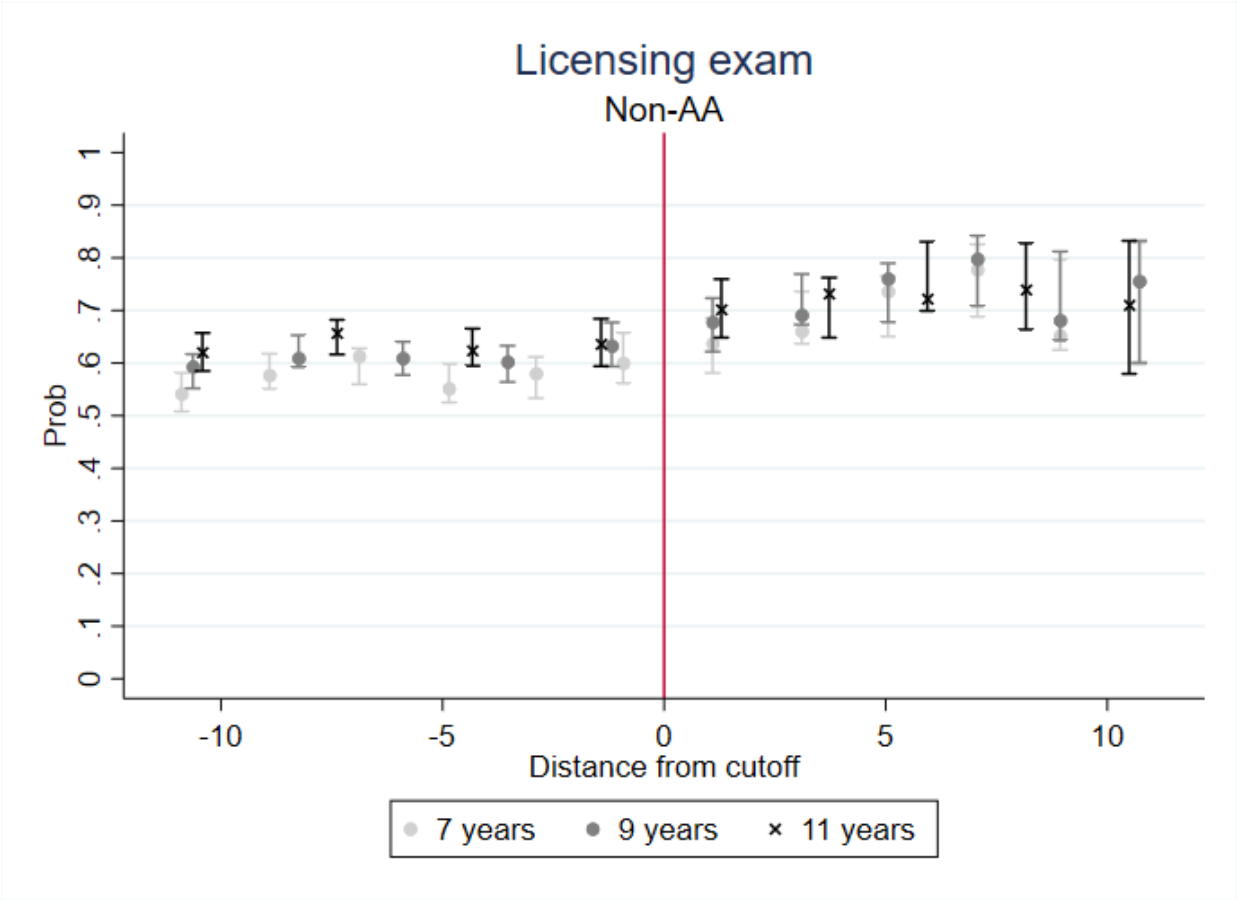

Licensing exam
Non-AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 19:

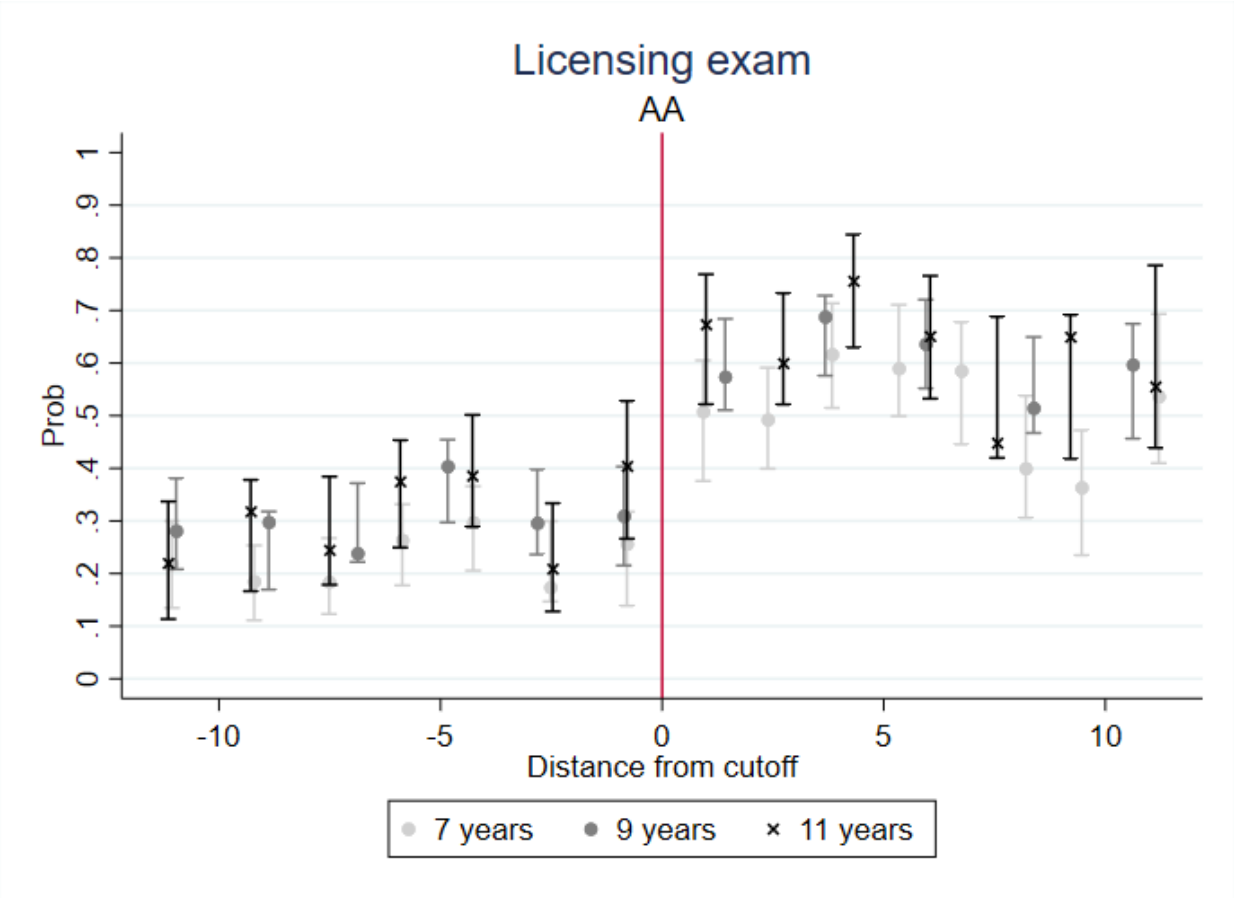

Licensing exam
AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 20:


Employed as a lawyer (associate included)
Non-AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 21:


Employed as a lawyer (associate included)
AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 22:

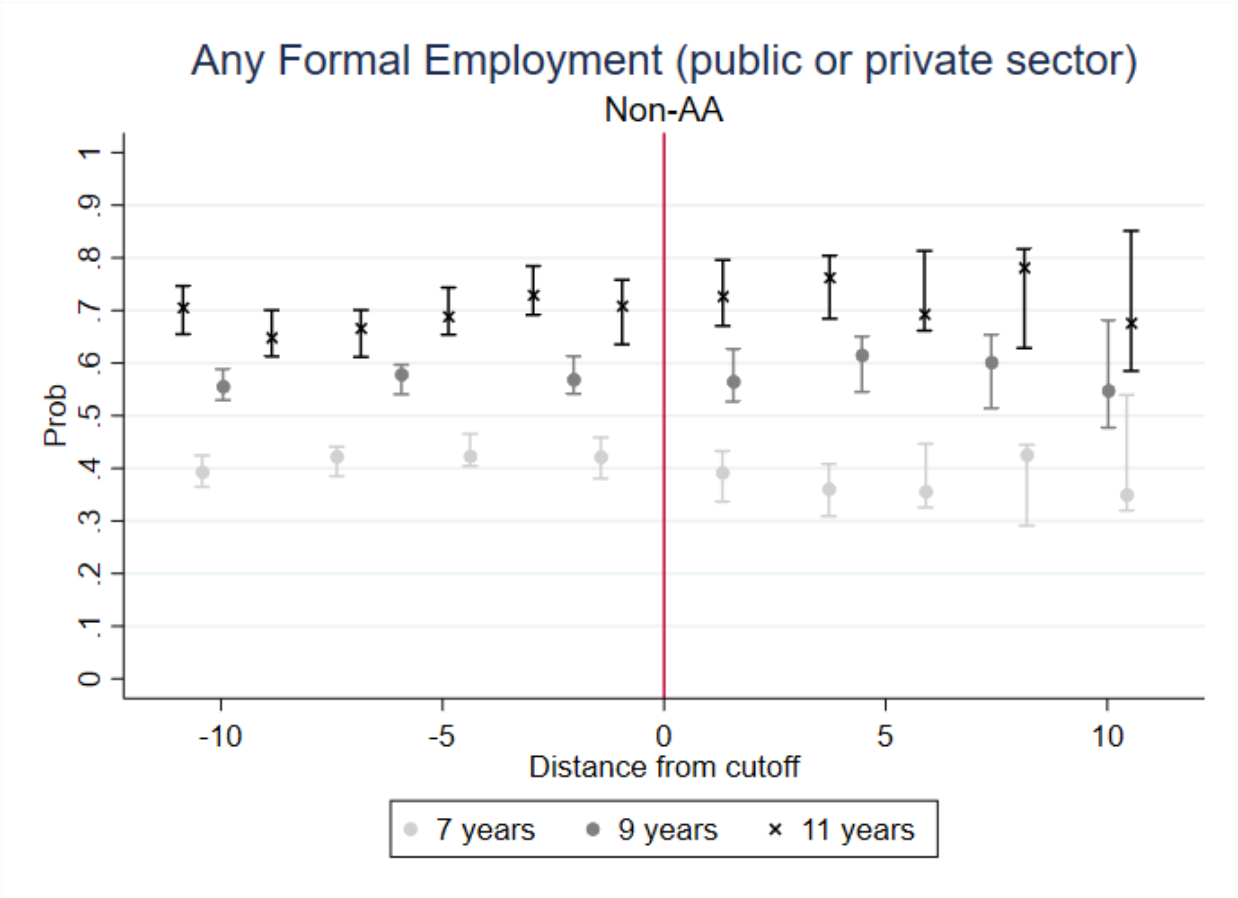
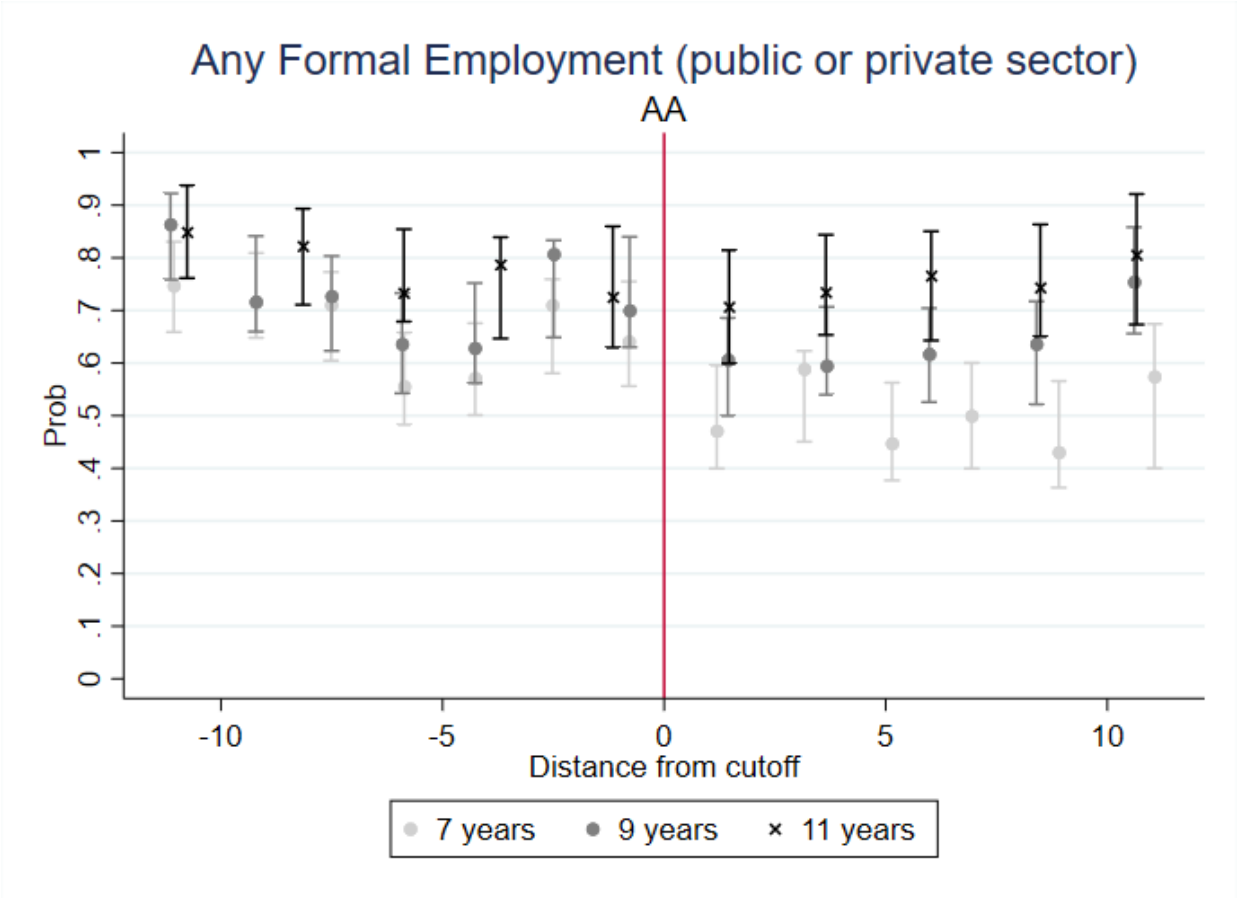

Any Formal Employment (public or private sector)
Non-AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

Figure 23:


Any Formal Employment (public or private sector)
AA
Prob
0
.1
.2
.3
.4
.5
.6
.7
.8
.9
1
-10
-5
0
5
10
Distance from cutoff
7 years
9 years
11 years

C Variables available for each year in admissions dataset

Table 1: Dataset Variables and Admission years

	1997	1998	1999	2000	2001	2003	2004	2005	2006	2007	2008	2009	2010
Name	x	x	x	x	x	x	x	x	x	x	x	x	x
Vestibular Score per subject	x	x	x	x	x	x	x	x	x	x	x	x	x
Total Score	x	x	x	x	x	x	x	x	x	x	x	x	x
General Ranking	x	x	x	x	x	x	x	x	x	x	x	x	x
Graduation year (if admitted)	x	x	x	x	x	x	x	x	x	x	x	x	x
If still enrolled in 2015.2	x	x	x	x	x	x	x	x	x	x	x	x	x
Admission Status	x	x	x	x	x	x	x	x	x	x	x	x	x
School Type (Public or Private)						x	x	x	x	x	x	x	x
Seat Type						x	x	x	x	x	x	x	x
Ranking per Seat Type						x	x	x	x	x	x	x	x
Bonus earned in the Qualification Fase						x	x	x	x	x	x	x	x
Date of Birth									x	x	x	x	x
Socioeconomic Profile:													
Daytime or nighttime school									x	x	x	x	x
Attended prep school									x	x	x	x	x
Took vestibular previously									x	x	x	x	x
Previously enrolled in college									x	x	x	x	x
Number of motorvehicles owned									x	x	x	x	x
Contributes to family income									x	x	x	x	x
Family with more than 4 members									x	x	x	x	x
Knows how to use a computer									x	x	x	x	x
Owns a computer									x	x	x	x	x
Internet access									x	x	x	x	x
Has email account									x	x	x	x	x
Reads newspaper									x	x	x	x	x
Watches TV news									x	x	x	x	x
Exercises									x	x	x	x	x
Studied a foreign language									x	x	x	x	x
Opinion on quotas									x	x	x	x	x
Living Status									x	x	x	x	x
If worked before vestibular									x	x	x	x	x
Source of income									x	x	x	x	x
Family income ranges									x	x	x	x	x
Father and Mother education									x	x	x	x	x
Self-declared skin color									x	x	x	x	x
Amount of books read									x	x	x	x	x