

1 Background and Significance

Despite the gradual decline in U.S. incarceration rate, U.S. still has the highest incarceration rate in the world, with the incarceration rate of 639 per 100,000 people of any age (Pew Research Center, 2021). According to Doleac and Hansen (2020), individuals are being released from state and federal prisons more quickly than they are being admitted; however, about two-thirds of those released will be rearrested within three years (Cooper et al, 2014). Given that a criminal record can be interpreted as a "negative credential" that can be used to restrict opportunities (Gaddis, 2015), those released from prison may see their opportunities restricted and face difficulties adjusting to normal life.

Higher education is a pathway to future opportunity, enhances critical thinking, and leads to higher-paying and stable employment (Center for Community Alternatives, 2010); in other words, higher education can be interpreted as a "positive credential". However, in order for individuals to benefit from education, in addition to focusing on characteristics such as student-faculty ratio and Professor's quality, one would need to address the opportunities for individuals to gain access to education in the first place. Therefore, I will examine the presence of criminal history questions on initial college applications which may prevent individuals from even getting their feet into their education journey. Criminal history questions in college applications are very expansive since they apply to all types of conviction including misdemeanors and juvenile adjudications (Brookings, 2017). This poses an issue since there is a large overlap between those applying to college and those with a criminal record (Brame et al, 2014). Brookings (2017) reported that over 120,000 college applicants each year have felony convictions, with this number being an underestimate since colleges and universities ask for information that spans more than felony convictions especially given the high likelihood that misdemeanors are more common among applicants. According to former U.S. Secretary of Education John B. King Jr., asking prospective students for information about their criminal history is a barrier especially to disadvantaged students (LA Times, 2016). While there are several research on the effects of information on criminal background and criminal history questions in job applications, research analyzing the effects of criminal history questions in higher education contexts are scarce. Using a large panel data of all colleges and universities in the U.S., I am the first to provide a causal analysis of a policy pertaining to the presence of criminal history questions in a higher education setting.

2 Research Questions

My main research question is quantitatively analyzing the effects of the Common Application system requiring member colleges and universities to add criminal history questions to their undergraduate college applications beginning in 2006 on total Fall undergraduate enrollments as well as total Fall undergraduate enrollments separately for public and private

universities. I use enrollments instead of applications for the following reasons: (1) Applications can be affected by more colleges and universities joining the Common Application, which makes it more convenient for students to apply, so the effects on applications may not be due to the presence of criminal history questions. (2) Students tend to spend more time making enrollment decisions, since where they study can have long-term impacts. (3) Colleges and universities care more about enrollments due to money from tuition and fees, prestige, and diversity (Romero Jr., 2016). (4) Even if students with criminal records successfully submitted their applications, colleges and universities that ask criminal history questions may delay their enrollment on purpose (Center for Community Alternatives, 2016). Hence, enrollment is a better outcome measure to examine whether individuals were able to begin their education journey. In addition, I also examine whether changes in enrollments are driven by applications and admissions decisions.

3 Data

Panel data for colleges and universities of all types from 2002 to 2010 in the U.S. is obtained from the Integrated Postsecondary Education Data System (IPEDS). In addition to information on a variety of characteristics for each university, the data also contains information on total Fall undergraduate enrollments across both public and private universities, which are the main variables of interest. I focus on undergraduate enrollments since Common Application is only for undergraduate students and graduate and professional programs tend to use different applications across programs within the same university; Common Application is a unified application system used by around 900 colleges and universities in the U.S. as of 2022 in order to streamline the application process by allowing undergraduate applicants to use the same application to apply to any colleges and universities that use the Common Application. Moreover, I requested the most recent data on the year that each university first joined the Common Application directly from the Common Application organization. In addition, since my outcomes pertain to undergraduate students, I restrict my sample to degree-granting universities with undergraduate offering.

4 Methods

In order to examine the average effects of adding criminal history questions on undergraduate enrollments, I use variation in the timing of when universities became a member of the Common Application and estimate a two-way fixed effects (TWFE) difference-in-differences equation where the treated group consists of universities with Common Application and control group consists of the non-Common Application universities. To examine the dynamic effects of the policy, I also use a TWFE difference-in-differences that incorporates a staggered event study design based on the year of Common Application adoption. Even though the policy is implemented in 2006, the staggered adoption set-up takes into account the fact that colleges and universities became a member of the Common Application at different years. One strong benefit of using the event study design is that it allows the parallel trend condition to be tested; in other words, if parallel trend holds, this means that both the treated and control group follows similar trends in enrollments during the pre-policy period.

However, even if the parallel trend holds, the standard TWFE model with staggered treatment adoption may suffer from biases. The first bias comes from the possibility that treatment effects may vary for early and late adopters of the Common Application, which would lead to the coefficient estimates of a given lead or lag being contaminated by effects from other periods when using the standard two-way fixed effects estimator (Borusyak et al., 2021; Goodman-Bacon, 2021; Sun and Abraham, 2021). Another bias coming from heterogeneity across time is negative weighting. Therefore, I estimate the effects of this policy using the interaction weighted estimator as proposed by Sun and Abraham (2021) where the relative period indicators are interacted with cohort indicators. This gives the cohort-specific average treatment effects on the treated (CATT), where the weights are equal to the share of each cohort in the relevant periods relative to the treatment and are non-negative.

5 Main Results

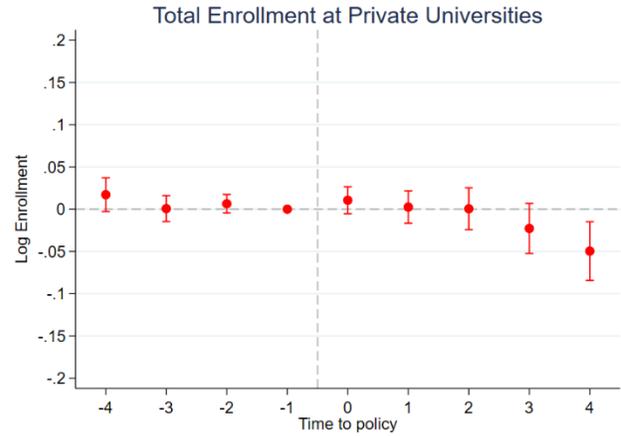
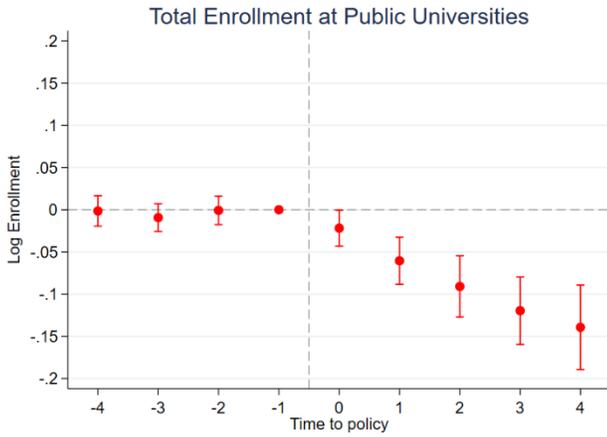
As a result of adding criminal history questions to undergraduate college applications, total Fall undergraduate enrollment decreases by 3.3%. Furthermore, enrollments within public universities decrease by 6.1% while enrollments within private universities is statistically insignificant and very small in magnitude. Since those with criminal records are more likely to come from lower income backgrounds and given the fact that public universities have lower tuition fees compared to private universities, it follows that public universities are more attractive to those with criminal records; this explains a much larger decrease in enrollments within public universities compared to private universities as a result of criminal history questions being added. Based on the event study results in the following graphs, there is a long-term negative impact of adding criminal history questions on enrollment since the decrease in enrollment is still statistically significant even four years after the policy.

Table 1: Adding Criminal History Ques

	Total	Public	Private
Common App	-0.0328*	-0.0612***	-0.00843
	(0.019)	(0.013)	(0.012)
Observations	25547	13462	12083

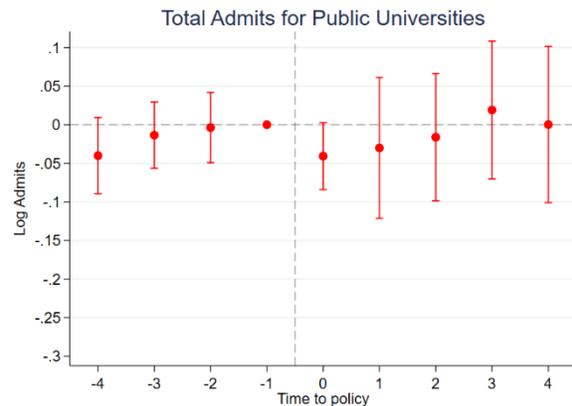
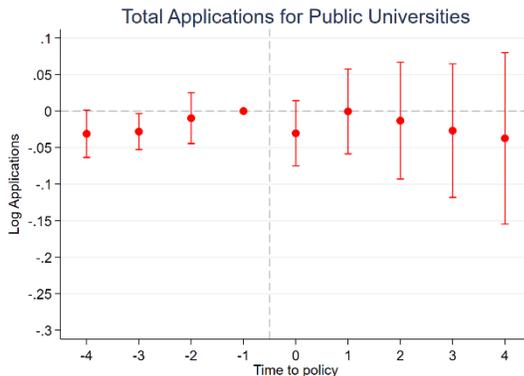
This table provides difference-in-differences estimates of the effect of adding criminal history questions to undergraduate college applications on the log of Fall undergraduate enrollments as well as across public and private universities. In addition to the control variables, the estimation equations contained university and time fixed effects as well as standard errors clustered at the university level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$



6 Discussions

Since enrollment within public universities is the most affected, I also examine whether this decrease in enrollment is driven by applications or admissions decisions. As can be seen by the graphs below, the policy of the Common Application adding criminal history questions starting from 2006 does not affect the number of undergraduate applications or admissions. This may indicate that there is no statistical discrimination in the college admissions process, which is in contrary to the evidence of statistical discrimination found in Agan and Starr (2018) when criminal history questions were removed from job applications. In a higher education context, statistical discrimination implies that, without knowing the criminal records of each individual, college admissions staff might incorrectly assume that a particular group of individuals are more likely to have criminal records. Hence, admissions for that particular group may decrease. In contrast, knowing the criminal histories of each individual through the addition of criminal history questions should increase admissions. However, without admissions data separated by race, any conclusions about statistical discrimination are purely conjectural. The key idea is that those with criminal records may be discouraged from enrolling due to the fear that their criminal records could be a barrier to other opportunities during their college years; for this reason, those with criminal records may prefer not to waste their time and money on going to school altogether. Therefore, there is suggestive evidence to show that changes in enrollments are more likely the result of decisions from would-be students rather than that of the admissions committee.



7 Conclusions

In conclusion, as more people are being released from prison, policies that can open up opportunities and facilitate reentry into communities and normal life may not only reduce the probability of these people returning to a life of crime, but also increase the chances of them becoming productive members of society. Since higher education is a pathway to future opportunities, enhances critical thinking, and leads to higher-paying and stable employment (Center for Community Alternatives, 2010), policies that can expand access to education for those newly released from prison may be beneficial. Providing a causal analysis of the nationwide policy concerning criminal history questions on undergraduate U.S. college applications, I found that adding criminal history questions to undergraduate college applications decreases total Fall undergraduate enrollment with the largest decrease in enrollments coming from public universities (negative impact). Therefore, the main and most striking result is that criminal history questions on college applications have the complete opposite impact compared to criminal history questions on job applications. Furthermore, preliminary analysis of possible mechanisms provides suggestive evidence that: (1) unlike in the job hiring process, there may be no statistical discrimination in the college admissions process, (2) prior to the 2006 Common Application's criminal history question policy, becoming a member of the Common Application does not lead to changes in universities' observable characteristics (number of students receiving aid, total expenditures, tuition for full-time undergrads, and the number of instructional staff), undergraduate students' quality (SAT verbal and math scores), or demographic composition (share of total undergraduate enrollments by white males and non-white males), and (3) changes in enrollments resulting from the policy are not due to applications or admissions decision. Therefore, in order to provide educational opportunities especially for those who have criminal records, colleges and universities should focus on making sure that there are no discriminatory questions, especially criminal history questions, on initial college applications that could prevent those with criminal backgrounds from enrolling in colleges and universities and obtaining the education that they needed, desired, and deserved.

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