

FAFSA Applications on College Enrollment

Veronica Wisniewska

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1. Introduction

Within the United States, college enrollment remains divided by socioeconomic status, usually with low - income students to be less likely to pursue college compared to their high - income counterparts. A significant barrier to college enrollment is the complexity of filing for financial aid, more specifically the Free Application for Federal Student Aid (FAFSA). FAFSA completion is required to obtain subsidized and unsubsidized loans, yet many eligible student fail to complete the application, which then reduces their likelihood of enrolling in college. In response to low FAFSA completion rates, several states have adopted policies that mandate FAFSA as part of high - school graduation requirements. Louisiana was one of the first states to implement this policy, beginning in the 2017 - 18 school year. This policy increased FAFSA completion rates, which allows us to study whether reducing barriers to financial aid has an impact on college enrollment.

In the paper, "College Enrollment and Mandatory FAFSA Applications: Evidence from Louisiana", Christa Deneault examines the impact of Louisiana's FAFSA mandate on both FAFSA completion and college enrollment. The study finds the mandate increases both FAFSA completion rates and college enrollment. These findings are important for policymakers because it shows how administrative actions can impact access to higher education. Using data from the Louisiana Department of

Education and from the Office of Federal Aid, this paper replicates the results from the original paper, by focusing on the difference - in-difference and instrumental variable estimates. Then, this paper extends the analysis by examining the effects of the FAFSA mandate by school size. Understanding the heterogeneity effects of school size allows us to see whether larger or smaller schools were affected differently by the mandatory FAFSA policy.

2. Background

As mentioned earlier, filing FAFSA is required to obtain subsidized and unsubsidized loans, which is one of the main sources of financial aid available. The application also determines eligibility for Pell Grants, and other state - level and institutional aid programs. Despite the benefits of completing the application, completion rates are low, especially for low - income students.

Louisiana has historically had low rates of education compared to other US states. It has had low rates of both high school graduation, as well as college enrollment. However, in the past decade, Louisiana has experienced an increase in high school graduation, yet college enrollment rates have remained the same. Louisiana has implemented a few policies including promoting career education as well as providing dual – credit classes to encourage college enrollment (Deneault, page 5). However, the Louisiana Department of Education decided to implement a policy which mandates the completion of the FAFSA as part of high school graduation requirements. Following the passing of the law, high school seniors had the following options: submit a FAFSA form, submit a Taylor Opportunity Program for Students (TOPS) which is a Louisiana financial aid form that integrates FAFSA in its completion, get written permission from a parent or guardian to opt out of FAFSA, or request a waiver. Additionally, Louisiana Department of Education (LDOE) provided information on their website along with phone assistance in completing the FAFSA form (Deneault, pages 6-7).

The policy targeted the application process, in order to reduce informational barriers to accessing the aid. The policy was created to encourage low – income students to apply and attend college, as policy makers believed financial barriers were the main issue against low college enrollment. Since the mandate was applied broadly across school, it created an exogenous treatment in FAFSA completion that can be observed for causal inference. Additionally, the mandate allows for the difference - in - differences estimation since schools with a low pre-policy FAFSA completion rate experienced a higher "treatment" intensity following the policy's passing.

3. Data

Deneault's paper provided a replication package containing data from the Louisiana Department of Education (LDOE) and the Office of Federal Student Aid. The data includes information high school graduation rate, college enrollment rates and FAFSA completion rates by school from 2014 to 2019. Additionally, the data includes information on student demographics, school characteristics and school resources. The datasets are merged by school – year as the policy was implemented in the 2017 – 18 school year. Therefore, the years 2014 - 2017 represent the pre - policy period, and 2018 - 2019 represents the post - policy period. Within the sample, there are 259 high schools, excluding special education, charter and private schools. Additionally, schools that had missing or incomplete FAFSA observations were dropped from the sample to maintain consistency in the study.

The key outcome variables are the college enrollment rate and the FAFSA completion rates. The FAFSA completion rate is defined as the number of FAFSA applications divided by the number of high school graduates. The college enrollment rate is calculated as a percentage of high school graduates who enroll in college, and as a percentage of the ninth-grade cohort enrolled in college. The key explanatory variable is the treatment intensity variables that studies the effect of the FAFSA

mandate. The treatment variable is coded as $(1 - \text{FAFSA completion (2015-2016)} * \text{post - 2018 dummy})$. By coding the variable like this, this shows how schools with a lower pre - policy completion rate experience a higher "treatment intensity" once the mandate passed. The regressions are weighted by the size of student cohort to account for differences in school enrollment levels. Additionally, standard errors are clustered at the school level. School fixed effects and year fixed effects are included to account for individual school characteristics and statewide trends.

While the data is extensive, there are some limitations to it. Firstly, as mentioned earlier, only public schools were in the data set as their data was publicly available compared to private and charter schools. Additionally, some schools were dropped for lack of FAFSA observations. This shows that there was some selection bias in choosing the schools. Additionally, since the data relies on school - level aggregates rather than individual student data, there is no way to accurately verify the matching between FAFSA completion rates and graduation rates. Despite these limitations, we can still estimate a causal analysis because the study relies on policy - induced variation, which created exogenous variation in treatment intensity per school.

4. Methodology

An ideal experiment for this paper would be to randomly assign schools to require FAFSA completion as part of graduation requirements. The random assignment would show that the differences in FAFSA completion and college enrollment are solely because of the policy, eliminating the idea of omitted variable bias. However, this experiment is infeasible to do, as education policies are usually made and applied on a state level rather than to individual schools. Instead, this paper uses Louisiana's mandate as a natural experiment, and turns to other estimation methods for analysis.

Louisiana's FAFSA mandate was implemented statewide, beginning with the

2017 - 2018 school year. The timing of the mandate was determined by the state rather than the individual schools, which allows the policy's implementation to be an exogenous variable to school trends in college enrollment. While the mandate was applied to all schools simultaneously, each school differed in their pre - policy FAFSA completion rates. Therefore, the mandate created different increases of FAFSA completion across schools, since schools with lower completion rates experienced larger increases after the policy. This heterogeneity in the policy exposure created the variation in treaty intensity, which I use for a causal analysis.

The first type of estimation method used is difference - in - differences (DiD). In this estimation, I compare the changes in FAFSA completion and college enrollment before and after the mandate passed across schools. Each regression includes school fixed effects, which control for varying differences in school characteristics, and year fixed effects, which control for any statewide trends that may have affected schools. DiD estimation relies on the parallel trends assumption, which states that the outcomes of the treated and control groups would've had the same path over-time if the treatment didn't occur (Angrist and Pischke, page 125). I believe this assumption holds since all schools were affected by the policy at the same time, the policy was implemented externally, and treatment intensity was based on pre - policy trends. Therefore, I am able to make a causal interpretation, since the features of the regression shows how changes in FAFSA completion and college enrollment are because of the mandate, rather than unobserved trends.

The second type of estimation method used is instrumental variable estimation. In this estimation, I use the mandate as an instrument for FAFSA completion rates. For an instrument to be valid, it must be both relevant and exclusive (Angrist and Pischke, page 119). Relevant means that the instrument is correlated with the explanatory variable. This condition is satisfied as shown by the statistically significant effects of the policy on FAFSA completion rates from the DiD model. Exclusive means that the instrument affects the dependent variable through its effect on the

explanatory variable. This condition is also satisfied as the policy simply requires FAFSA completion, and it has no impact on other factors affecting enrollment such as tuition costs or the amount of financial aid given. Therefore, the instrumental variable isolates the exogenous variation in the FAFSA completion, which is unrelated to outside factors affecting college enrollment. This allows for the coefficients from this estimation to be interpreted as a causal effect.

5. Key Results: Tables 2 and 3

Beginning with the replication of Table 2, this table reports on the difference - in - differences estimates of the impact of Louisiana's policy on FAFSA completion rates and college enrollment. Columns 1 and 2 represent the results of the FAFSA completion rates, without and with controls respectively. Across the specifications, the policy increased FAFSA completion by about 38 to 42 percentage points. These estimates are statistically significant. Columns 3 and 4 represent the results of college enrollment, without and with controls respectively. Across the specifications, the policy increased college enrollment by about 7 to 13 percentage points. These estimates were also statistically significant, however, column 3 is statistically significant at 0.1 level. Overall, Table 2 shows that the FAFSA mandate had a strong causal effect on both FAFSA completion and college enrollment.

Table 1: Effect of Mandatory FAFSA on Completion and Enrollment (Table 2 Replication)

	Comp. Rate (1) b/se	Comp. Rate (2) b/se	Enrolled (3) b/se	Enrolled (4) b/se
Average Completion x Post	0.385*** (0.06)	0.421*** (0.06)	0.070* (0.04)	0.133*** (0.03)
Observations	1294	1294	1554	1554
R-squared	0.799	0.816	0.886	0.909

Moving on to the replication of Table 3, this table reports on the instrumental variable estimates, which uses the mandate as an instrument to estimate the effect of FAFSA completion on college enrollment. Columns 1 and 2 represent the

ordinary - least squares (OLS) regressions on college enrollment for high school graduates and the 9th grade cohort. In the OLS regressions, a one - unit increase in FAFSA completion is associated with an 18 to 21 percentage point increase in enrollment. Columns 3 and 4 represent the IV estimates for the high school graduates and 9th grade cohort respectively. For the high school graduates, FAFSA completion increased enrollment by about by 23.2 percentage points. For the 9th grade cohort, FAFSA completion increased enrollment by about 33.4 percentage points. All the estimates are statistically significant. Overall, Table 3 shows that the policy - induced increase in FAFSA completion significantly raised college enrollment.

Table 2: IV Estimates using FAFSA Mandate as an IV (Table 3 Replication)

	OLS: HS Grad b/se	OLS: Cohort b/se	IV: HS Grad b/se	IV: Cohort b/se
FAFSA Completion Rate	0.207*** (0.028)	0.180*** (0.026)	0.232*** (0.077)	0.334*** (0.074)
Observations	1294	1294	1294	1294

Looking at both tables together, Tables 2 and 3 provide strong evidence that Louisiana's mandate substantially increased both FAFSA completion and college enrollment. The difference - in - difference estimates represent the reduced - form effect of the policy, while the instrumental variable estimates support the causal relationship between FAFSA completion and college enrollment. These results show the importance of cutting administrative obstacles towards college education.

6. Extension: Heterogeneity Effects of School Size

While the DiD and IV estimates provide the average effects of the mandate on FAFSA completion and college enrollment, these estimates can hide other heterogeneity effects across schools. For my extension, I extend the original paper by examining whether the effect of the mandate varies by school size. Schools differing in size can also differ in resources, which can affect the mandate's ability to affect enrollment.

To do this, I divide schools into five quintiles based on enrollment size, with Q1 representing the smallest schools and Q5 representing the largest schools. I chose quintiles to remain consistent with Deneault's paper as she also uses quintiles for heterogeneity effects. Then, I re-estimate the DiD estimates for each specification based on the quintile. All the regressions use the same controls and fixed effects as to remain consistent with the original analysis.

For the smallest schools (Q1), the estimated coefficient is -0.095, yet it is not statistically significant. The same is for Q2, with the estimated coefficient being -0.164, and it is also not statistically significant. The largest negative coefficient estimate is with Q3 at -0.195, and the estimate is statistically significant at the 0.1 level. In Q4, the estimated coefficient is -0.123, yet is again statistically insignificant. Lastly, for the largest schools at Q5, the estimated coefficient is 0.013, but it is also statistically insignificant.

Table 3: Effect of FAFSA Policy on Enrollment by School Size Quintile

	(1)	(2)	(3)	(4)	(5)
	Q1	Q2	Q3	Q4	Q5
	b/se	b/se	b/se	b/se	b/se
Average Completion x Post	-0.095 (0.145)	-0.164 (0.133)	-0.195* (0.082)	-0.123 (0.154)	0.013 (0.079)
Observations	312.000	312.000	312.000	312.000	306.000
R-squared	0.464	0.547	0.529	0.678	0.820

Overall, this extension doesn't show strong evidence that the FAFSA mandate had different effects on enrollment across school size categories. While most of the estimates were negative, most of them were statistically insignificant, with only one quintile showing weak statistical significant. These results show that school size alone is unlikely to determine the effect of the policy on college enrollment. Instead, these results indicate that there are different administrative resources for each schools which affect college enrollment, such as college advisement or individualized financial aid advisement.

7. Conclusion

To sum it all up, this paper aimed to replicate and extend the study of Christa Deneault, which analyzed the effects of Louisiana's FAFSA mandate on FAFSA completion rates and college enrollment. My replication confirms the original key results, which shows a statistically positive significant effect on both FAFSA completion and college enrollment. In my extension, I explored the heterogeneity of the policy's effects by school size. While there weren't consistent trends across the quintiles, the negative effect for mid-sized schools can suggest that administrative resources also play a part in college enrollment. However, the results aren't strong enough to make any definitive conclusions.

However, I believe these results may not have much external validity. I believe the results might only be specific to Louisiana, and it may not fully generalize to other states with different educational systems. For example, New York has strong public college systems, which offer students the opportunity to attend college at affordable rates. Therefore, a FAFSA mandate in New York may not affect college enrollment rates, as New York students are already given the opportunity to go to college at a cheaper rate. Thus, I would want to see a comparative study if a FAFSA mandate would hold similar results in another state, such as New York. Therefore, despite the strong evidence of the study, the analysis does have some limitations. Future work could focus on exploring other institutional factors that can affect the policy's impact.

8. References

Angrist, J. D., and Pischke, J.-S. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press.

Deneault, Christa. (2022). College Enrollment and Mandatory FAFSA Applications: Evidence from Louisiana. *American Economic Journal: Economic Policy*.