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POSTSECONDARY OUTCOMES FOR TRADITIONAL SCHOLARS

Evaluating the Kansas City Scholars College Scholarship Program

Addressed to:

EWING MARION KAUFFMAN FOUNDATION

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EFFECTS OF THE KCS TRADITIONAL SCHOLARSHIP ON POSTSECONDARY ENROLLMENT AND RETENTION

This brief presents estimated impacts of the traditional KCS scholarship on postsecondary enrollment and retention for the first cohort. It complements an earlier brief from August 2019, which examined impacts on high school and college preparation outcomes.

When students apply for a traditional scholarship, the Kansas City Scholars (KCS) program uses a rubric to assign points to various characteristics and achievements. The program has a target number of scholarships to award, and applicants with the highest “scores” (and who meet all eligibility criteria) receive the scholarship until the target is reached. The minimum number of points needed to receive a scholarship is called the “cut score” or threshold.¹ This procedure permits a rigorous method for estimating the impact of the traditional scholarships on outcomes: a regression discontinuity design (RDD). The logic of this method is to compare outcomes for scholarship awardees whose scores are “just above” the threshold to non-awardee students whose scores are “just below” the threshold. Because the scores for the two groups are similar, and we confirm other student characteristics that may affect outcomes are similar as well, we infer that the only difference between the groups is the scholarship award, and that any differences in outcomes can be attributed to it.

In this brief, we estimate the impacts of the scholarship on postsecondary enrollment and retention for the first cohort of traditional scholarship awardees, which were announced in Spring 2017, at the end of students’ junior year. The source of the postsecondary outcomes is the StudentTracker database of the National Student Clearinghouse (NSC), a nonprofit that tracks college enrollment and degree attainment of nearly all students for financial aid verification purposes. We collected these data from NSC in February 2020, allowing us to examine enrollment through the fall of the second year of college (fall 2019) for students from the first cohort. Specifically, we estimate impacts for initial fall enrollment and the type of this enrollment, as well as retention in college through the following fall.

RESULTS

Figures 1 through 3 present the impact estimates graphically. The graphs display the differences in enrollment rates between students with cut scores just above and below the threshold that determined KCS scholarship receipt.²

Figure 1 shows impacts on initial fall (2018) enrollment. Students awarded the KCS scholarship are no more likely to enroll in college overall: 85 percent of students near the score cutoff do so, regardless of whether they receive the scholarship or not. Given that KCS applicants near the cutoff are relatively meritorious, this lack of KCS impact may not be surprising. However, the second barbell indicates they are far more likely to enroll in a 4-year institution. Indeed, nearly all KC Scholars near the cutoff who enrolled at college did so at 4-year institutions, whereas about one-fourth of enrolled students in the control group enrolled in a 2-year college. As a result, KC Scholars are 21 percentage points more likely to enroll in a 4-year college, and about 21 percentage points less likely to enroll in a 2-year college.

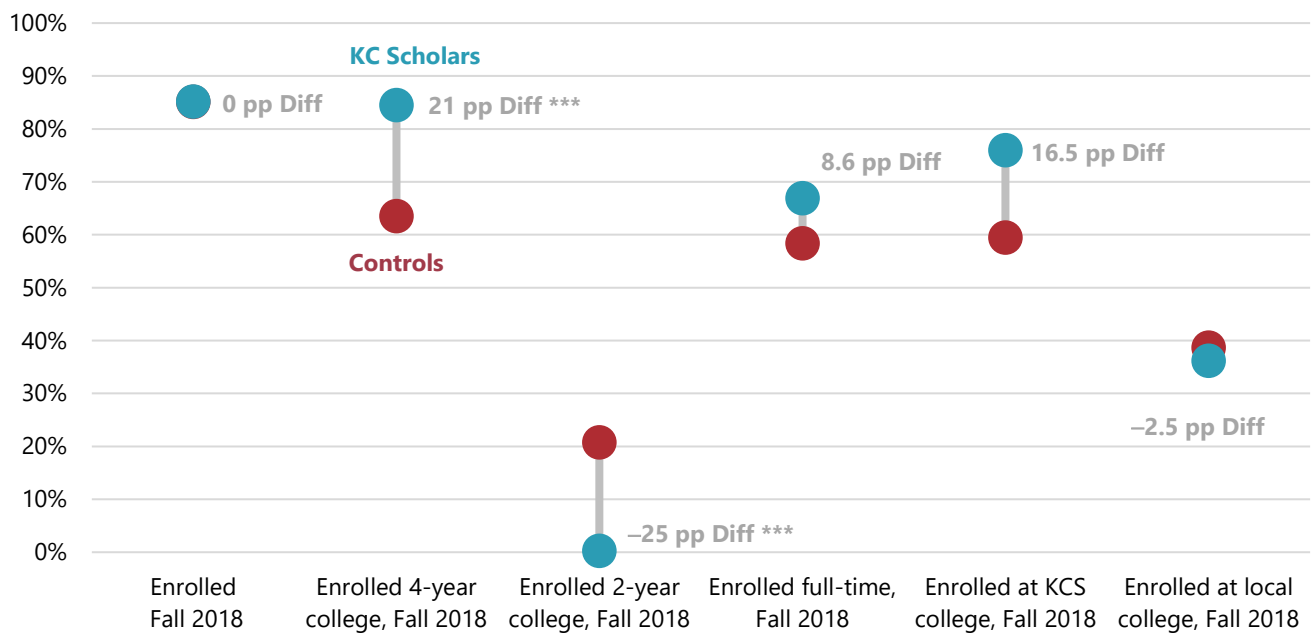
¹ If there is a tie at the cut score, and more students have achieved the points threshold than can be awarded scholarships, ties are broken by a random drawing.

² Note that some students above the cutoff and who were initially awarded the scholarship may have declined it. Including these students in the “treated” group is normal in evaluations.

Both effects are statistically significant, and they are in line with predictions students made when asked about how their college choices would change if they were to be awarded the scholarship.

Students scoring just above the cutoff were also somewhat more likely to be enrolled full-time and at a KCS partner college, although the respective 8.6 and 16.5 percentage-point differences are too imprecise to be confident of a true impact.³ The last barbell in the figure shows that there was relatively little difference in the likelihood that students scoring above the threshold were enrolled in a college in the six-county Kansas City metro area.

Figure 1. Students Awarded the KCS Scholarship are No More Likely to Enroll in College Overall in the First Fall, but They are 21 Percentage Points More Likely Initially to Enroll in a 4-year College

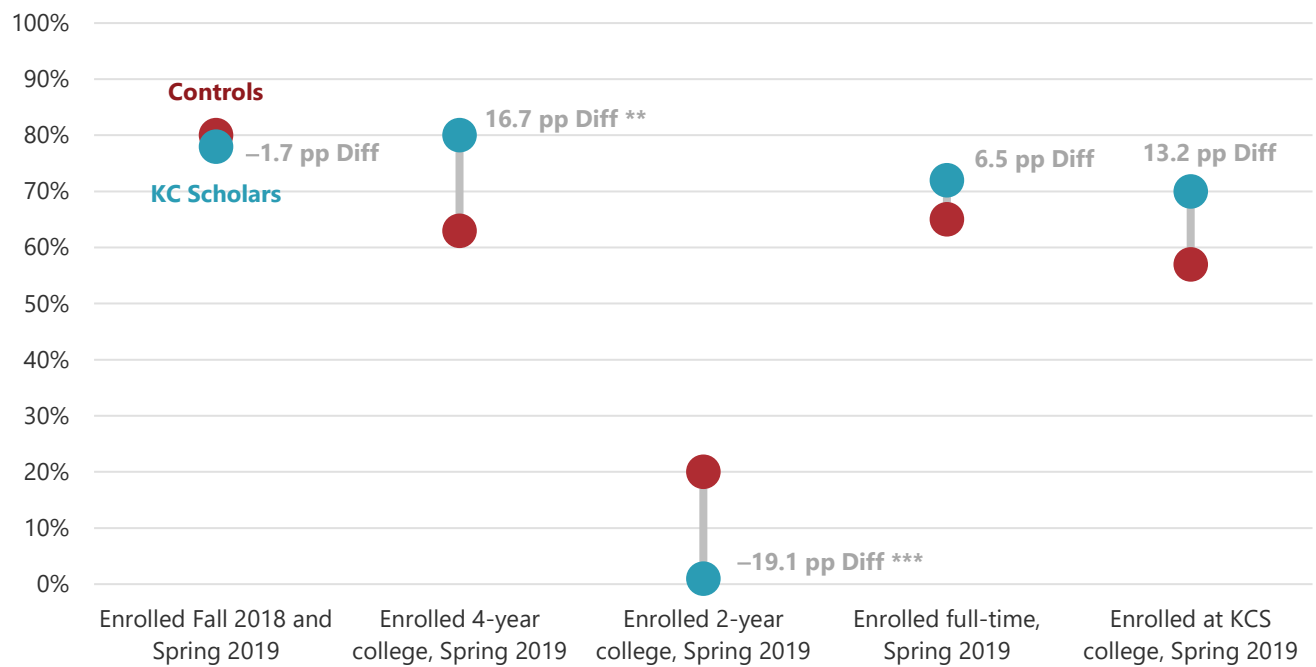


NOTE: * significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level.

Figure 2 displays impacts for Spring 2019. College retention from fall 2018 to spring 2019 is high for all students near the cutoff: 78-80 percent of students are enrolled both semesters, a slight dropoff from the 85 percent enrolled in the fall. Otherwise, the substitution between the 4-year and 2-year sector shown in Figure 1 for the fall largely carries over to the spring, as students above the cutoff are 17 percentage points more likely to have been enrolled in a 4-year college and 19 percentage points less likely to have been enrolled in a 2-year college. Impacts on full-time attendance and enrollment in a KCS partner college are also similar, if slightly smaller, and again are too imprecise to be conclusive.

³ Approximately 9 percent of students scoring just above the cutoff enrolled in a non-KCS partner college. Most of these attended college outside of Kansas and Missouri and presumably declined the scholarship.

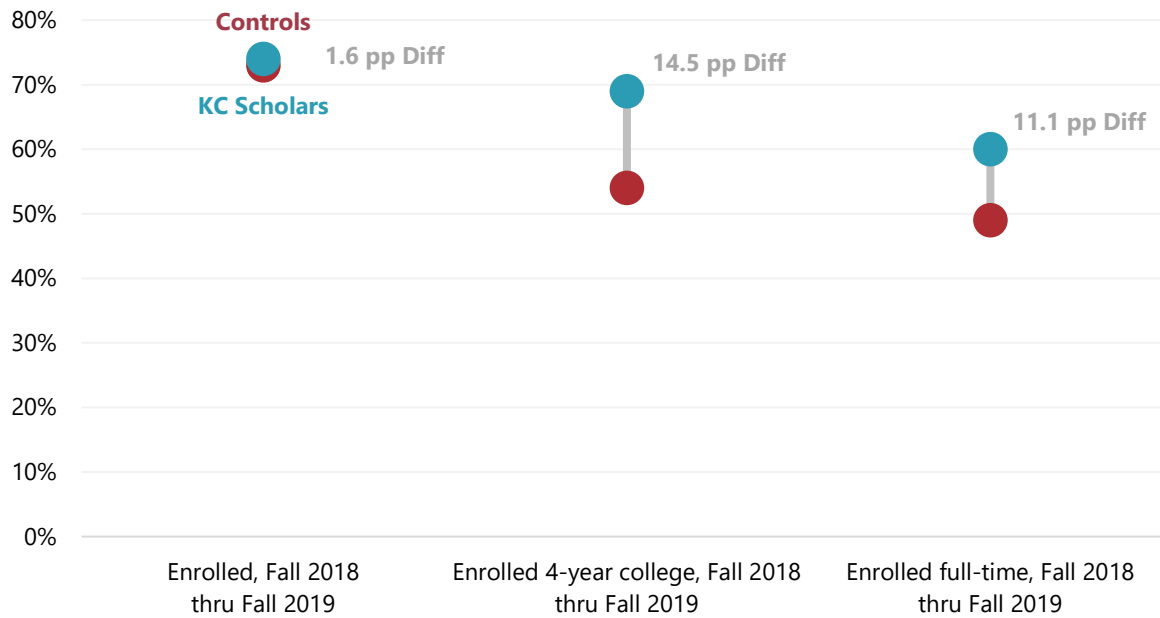
Figure 2. The Differences Apparent in the First Fall Largely Carry Over to the Spring, with Students Awarded the KCS Scholarship More Likely to be Enrolled in a 4-year College and Less Likely in a 2-year College



NOTE: * significant at the 0.10 level; ** significant at the 0.05 level; *** significant at the 0.01 level.

The third figure displays impacts on student retention between fall 2018 and fall 2019. Continuous enrollment from fall-to-fall is roughly the same for students just above and just below the cutoff, around 73-74 percent. This implies that fall-to-fall retention is about 86-87 percent (73 percent / 85 percent). The significant gain in 4-year college enrollment for students above the cutoff attenuates slightly by the second fall, but is still sizable, even if it now just misses statistical significance. The impact on steady full-time enrollment is slightly larger than in the first two semesters, but is also still relatively imprecise.

Figure 3. Impacts on Fall-to-Fall Enrollment at 4-year Colleges and as Full-Time Students are Suggestive but Not Conclusive



SUMMARY

Using NSC data, our analyses indicate that the KCS traditional scholarships significantly increase enrollment at 4-year colleges in the initial fall following high school graduation (significantly reducing enrollment at 2-year colleges). Furthermore, although the impacts are not statistically significant, the scholarships appear to increase full-time enrollment and enrollment at one of the KCS partner postsecondary institutions.

The scholarships do not seem to affect retention rates as measured from Fall 2018 to Spring 2019, or as measured from fall-to-fall. However, there is evidence of persistence in the positive impact on enrolling in a four-year college and on a full-time basis. But this evidence is not statistically conclusive.

METHODOLOGY NOTES

For the RDD analysis employed above to be valid, individuals on either side of the threshold must be similar, and, ideally, we would have data on all applicants.

Of the 1,050 valid, scored applicants for the traditional scholarship from the first cohort, 55 were not able to be matched to NSC records. Some of these non-matches, up to nine of them, are due to FERPA-block requests, in which either students or their postsecondary institutions disallow the release of their NSC records. The remaining non-matches are due to a minor processing error, in which we were unable to confirm eligibility criteria in the application data precisely matched final award determination. To err on the side of caution when conducting the evaluation, these additional students were not included in the NSC match. However, when we checked school and demographic characteristics from the applications for these 55 students, we found no substantive differences from the remaining group of applicants for which we do have NSC matches. Thus, the non-matched students would not be expected to materially affect the impact estimates shown above.

After receiving and cleaning both the NSC data, we confirmed that everyone above the threshold received a scholarship, and that no one below the threshold received it; this is known as a “sharp” discontinuity. Most applicants’ scores were quite close to the threshold; approximately 54 percent of scores were within +10 points of the threshold.

In a regression framework, the RDD can be represented by the following equation:

$$Y_i = \alpha + \beta X_i + \gamma \text{SCORE}_i + \delta (\text{SCORE}_i > 0) + \theta \text{SCORE}_i * (\text{SCORE}_i > 0) + \varepsilon_i,$$

where Y_i is the high school outcome for student i , X_i are observed characteristics of student i that do not directly affect the application score (e.g., race/ethnicity and county of residence), SCORE_i is the application score of student i minus the cut score, and $(\text{SCORE}_i > 0)$ takes the value of 1 if the student’s SCORE is above 0 and takes the value 0 otherwise. The key coefficient is θ , which represents the “discontinuity” in the outcome at the threshold—that is, the effect of the KCS scholarship. Following current practice, we estimate the above equation on students sufficiently close to the threshold, using the approach of Calonico, Cattaneo, and Titiunik (2014, 2015).⁴

TABULAR RESULTS

Table 1 presents the results in Figures 1 through 3 in tabular form, showing the estimated KCS impact, 95-percent confidence intervals for these impacts, and the baseline averages for students who do not receive the KCS scholarship. (The baseline averages correspond to the “Controls” in the figures and represent averages for non-recipients close to the score cutoff; these averages plus the estimated effects correspond to the “KC Scholars.”)

⁴ Calonico, Sebastian, Mattias Cattaneo, and Rocio Titiunik. 2014. “Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs.” *Econometrica* 82(6): 2295–2326; Calonico, Sebastian, Mattias Cattaneo, and Rocio Titiunik. 2015. “Optimal Data-Driven Regression Discontinuity Plots.” *Journal of the American Statistical Association* 110(512): 1753–1769.

Table 1. Effects of KCS on Scholarship on Postsecondary Outcomes

Outcome	Effect	95% CI	Mean for Non-Recipients
Enrolled, Fall 2018	0.000	(-0.118, 0.198)	0.851
Enrolled 4-year college, Fall 2018	0.210	(0.126, 0.507)	0.635
Enrolled 2-year college, Fall 2018	-0.205	(-0.372, -0.129)	0.208
Enrolled full-time, Fall 2018	0.086	(-0.084, 0.294)	0.584
Enrolled at KCS college, Fall 2018	0.165	(-0.062, 0.343)	0.595
Enrolled at local college, Fall 2018	-0.025	(-0.300, 0.103)	0.387
Enrolled Fall 2018 and Spring 2019	-0.017	(-0.177, 0.161)	0.800
Enrolled 4-year college, Spring 2019	0.167	(0.019, 0.418)	0.631
Enrolled 2-year college, Spring 2019	-0.191	(-0.357, 0.116)	0.201
Enrolled full-time, Spring 2019	0.065	(-0.114, 0.269)	0.653
Enrolled at KCS college, Spring 2019	0.132	(-0.131, 0.294)	0.567
Enrolled, Fall 2018 thru Fall 2019	0.016	(-0.161, 0.206)	0.727
Enrolled 4-year, F2018 thru F2019	0.145	(-0.035, 0.387)	0.542
Enrolled full-time, F2018 thru F2019	0.111	(-0.074, 0.333)	0.493

Figure A.1 A “Sharp RDD” – No Applicants with Scores Below the Threshold Received a KCS Scholarship, While All Applicants with Scores Above the Threshold Did

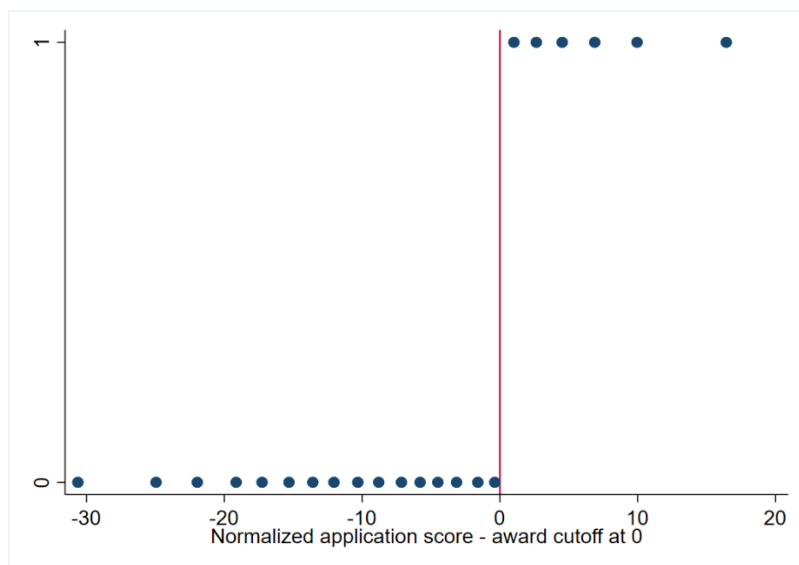


Figure A.2 Enrolled in College, Fall 2018

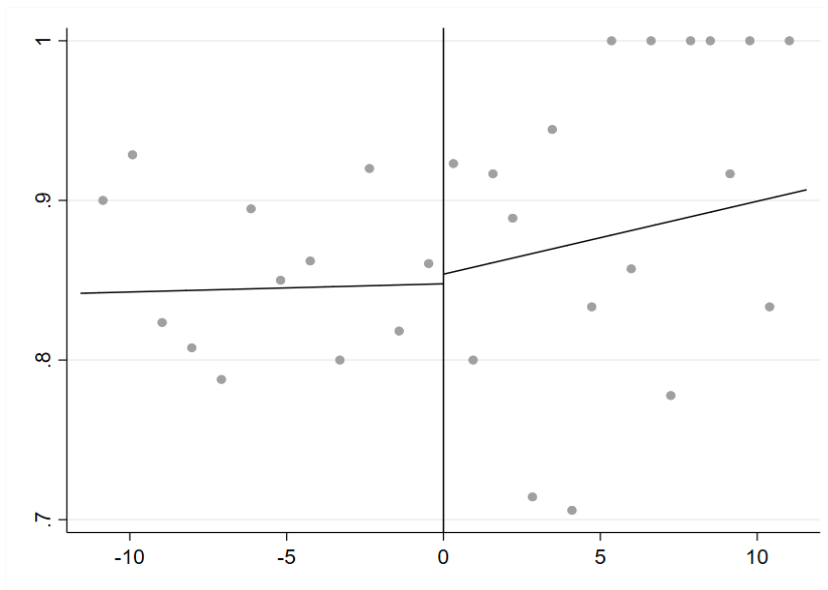


Figure A.3 Enrolled 4-yr College, Fall 2018

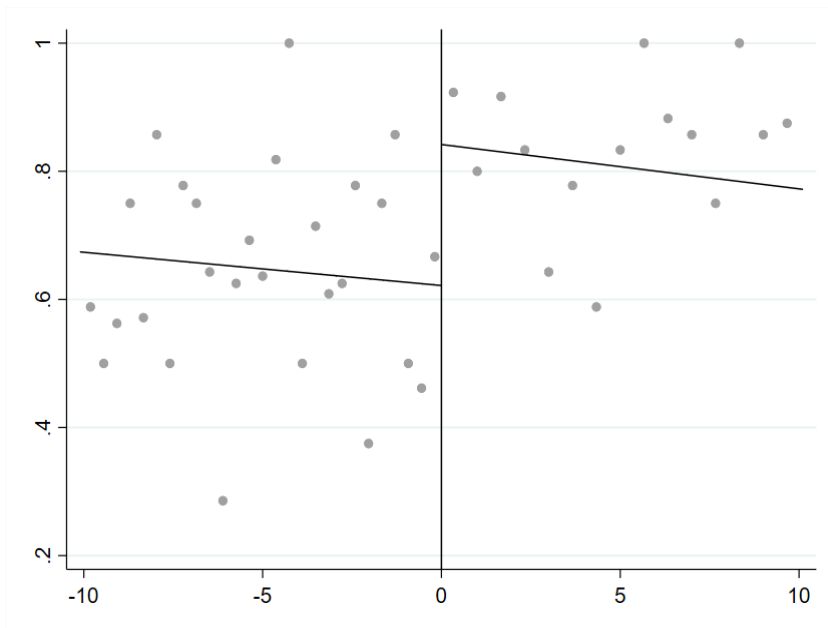


Figure A.4 Enrolled 2-yr College, Fall 2018

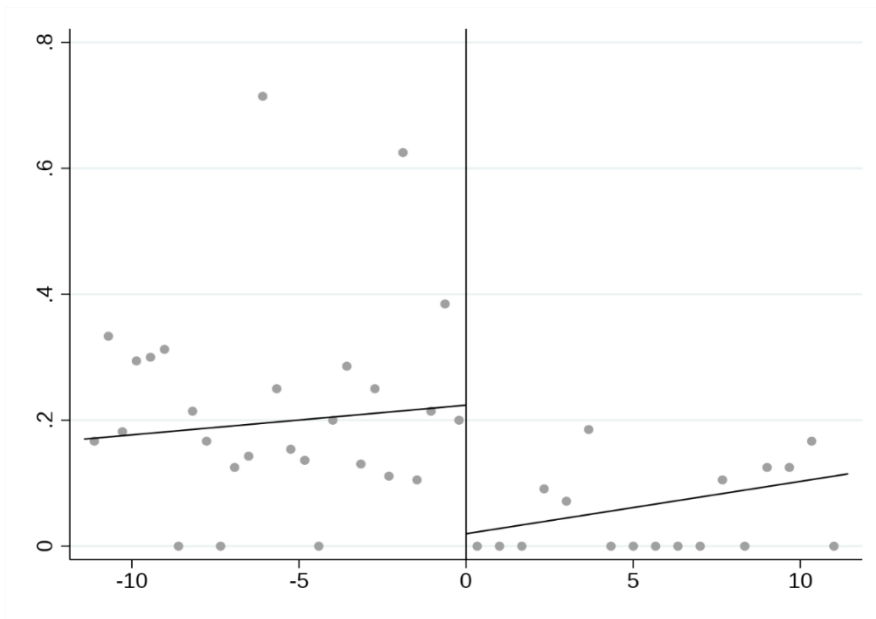


Figure A.5 Enrolled Full-Time, Fall 2018

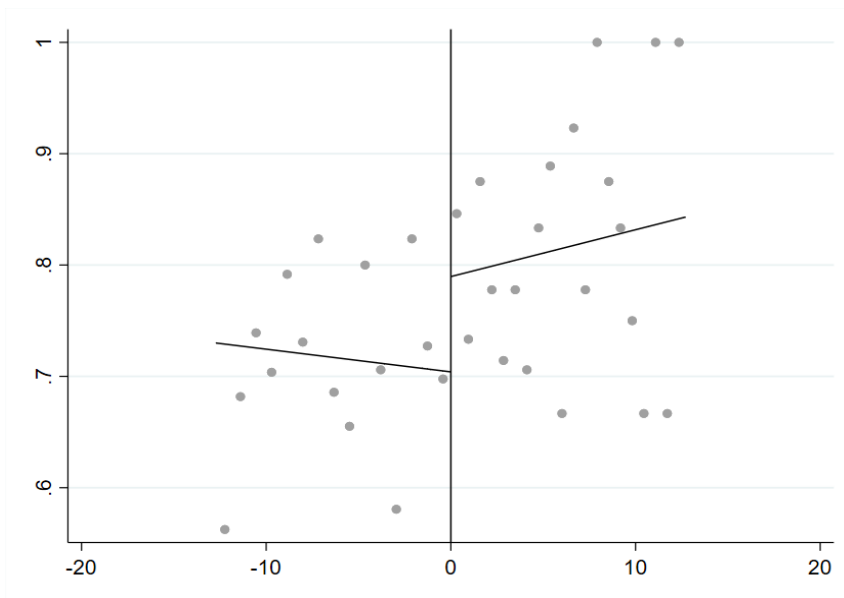


Figure A.6 Enrolled at KCS College, Fall 2018

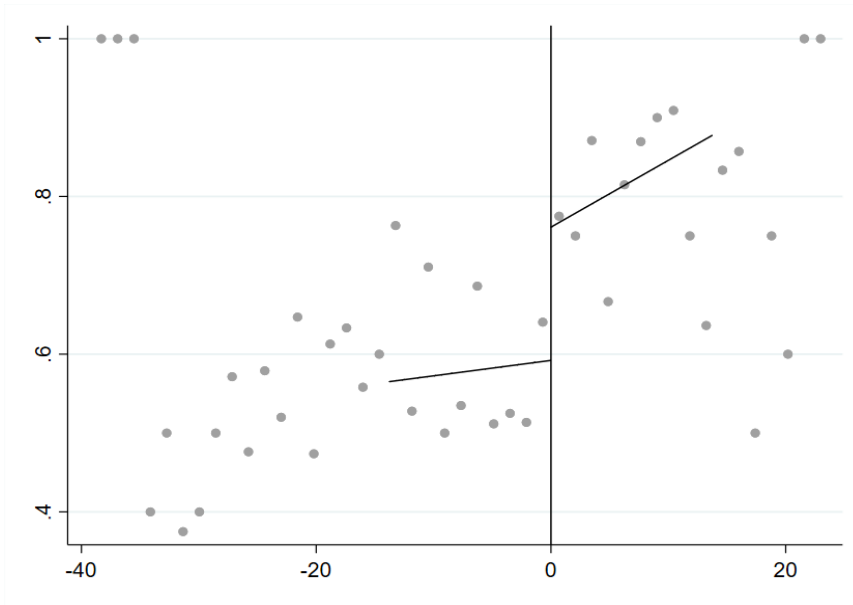


Figure A.7 Enrolled at Local College, Fall 2018

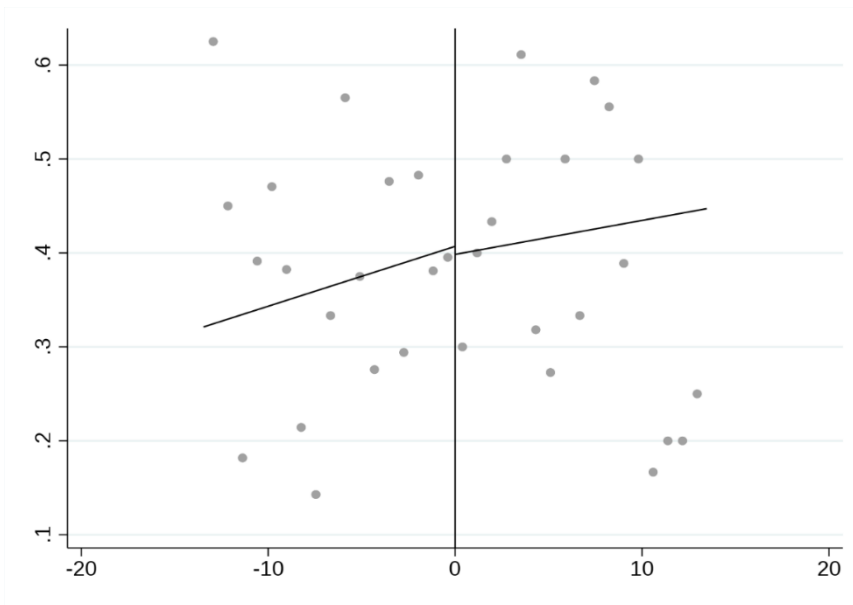


Figure A.8 Enrolled Fall 2018 and Spring 2019

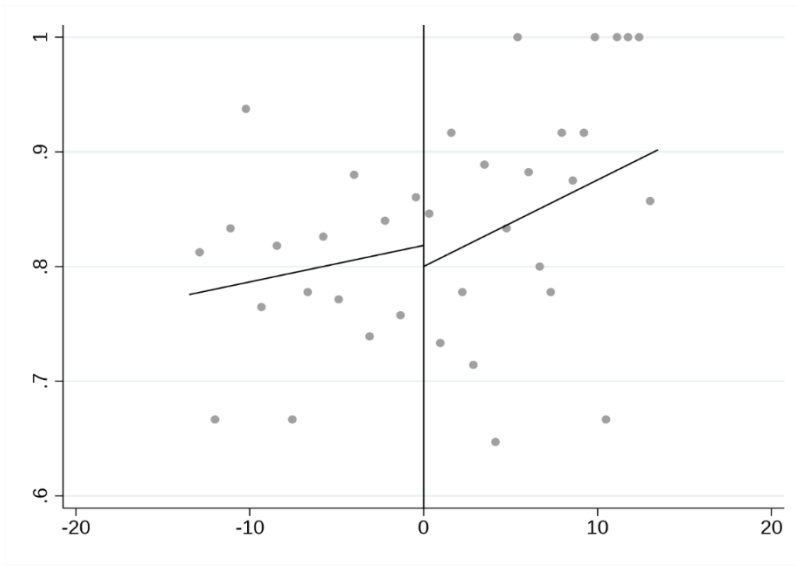


Figure A.9 Enrolled 4-yr College, Spring 2019

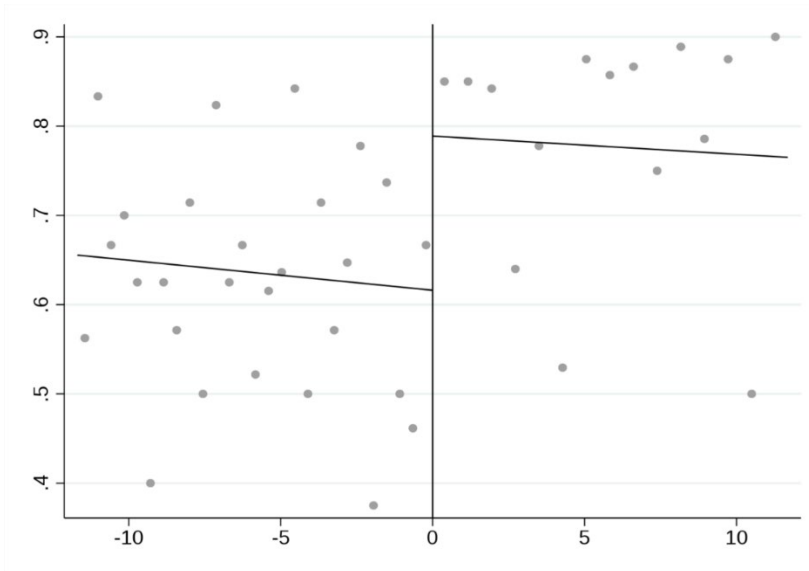


Figure A.10 Enrolled 2-yr College, Spring 2019

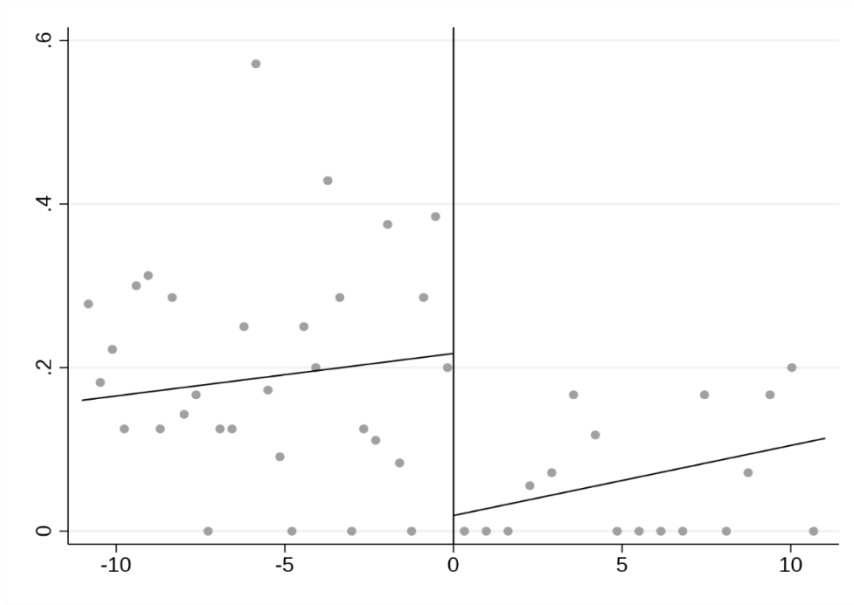


Figure A.11 Enrolled Full-Time, Fall 2018

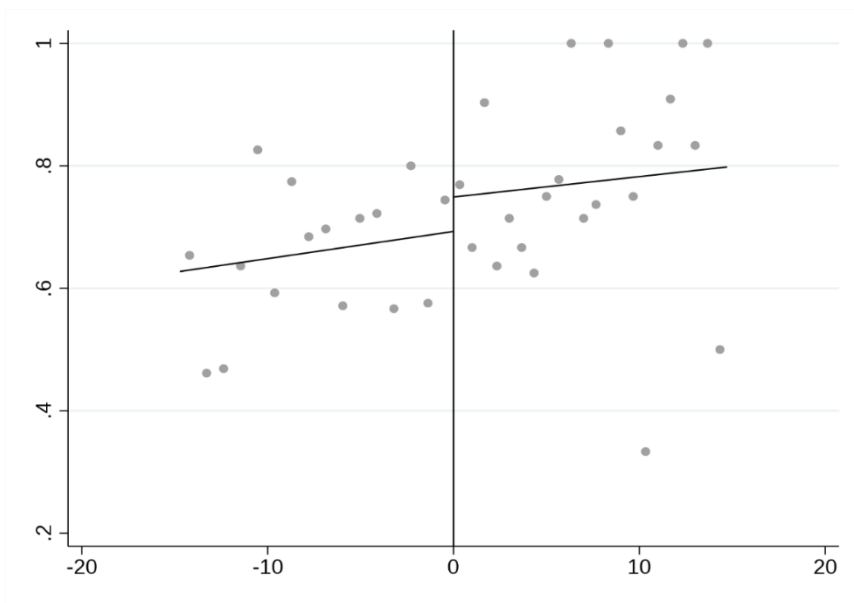


Figure A.12 Enrolled at KCS College, Spring 2019

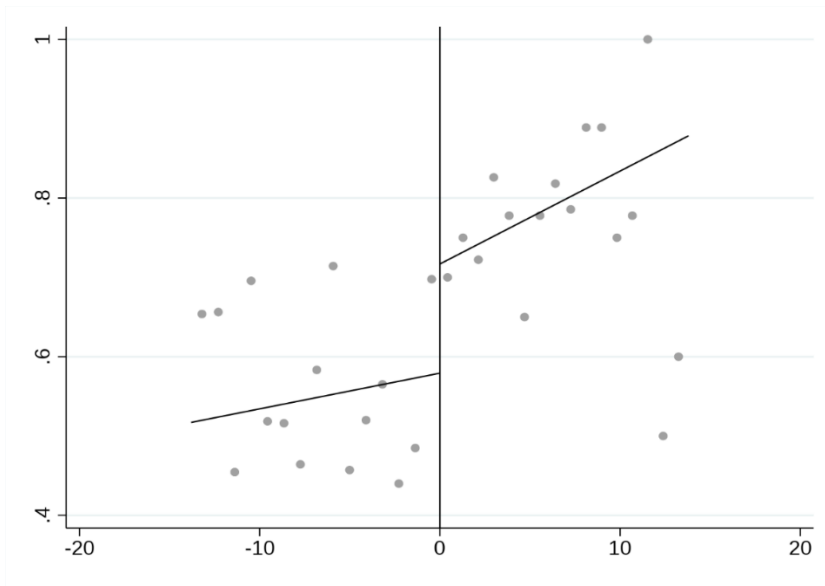


Figure A.13 Enrolled, Fall 2018 thru Fall 2019

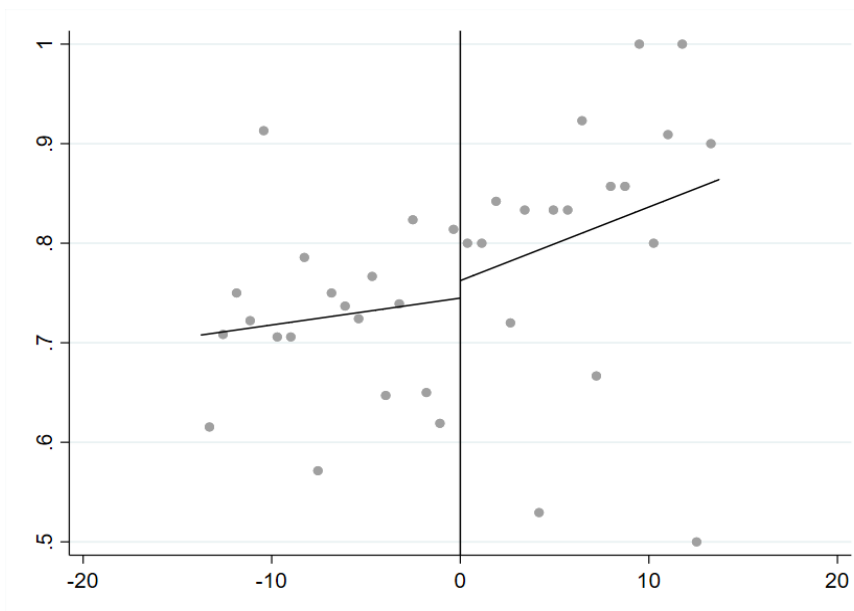


Figure A.14 Enrolled 4-year, Fall 2018 thru Fall 2019

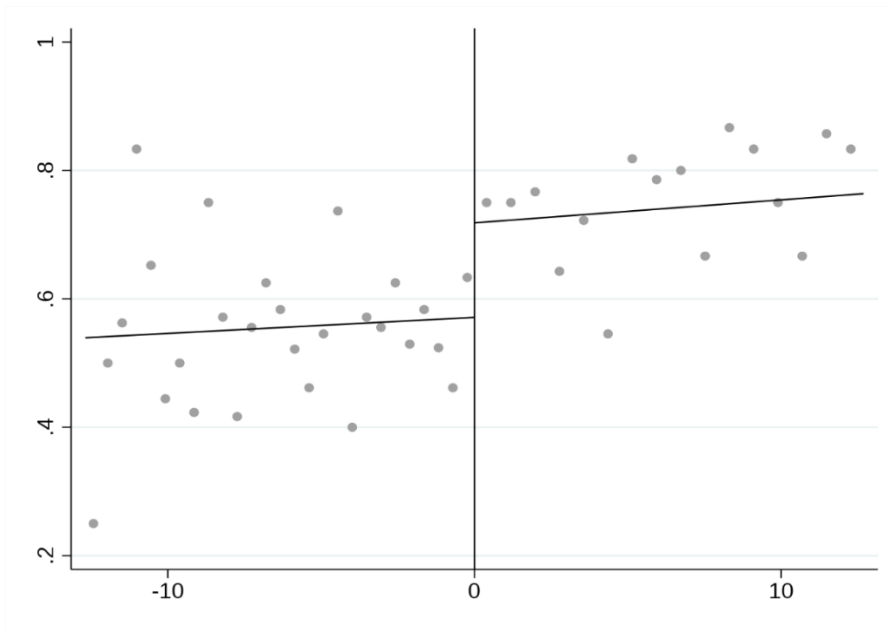


Figure A.15: Enrolled Full-Time Fall 2018 thru Fall 2019

