

The Impacts of Texas Educational Opportunity Grants on Student's Outcomes

Findings and Implications for Policy and Practice

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TEOG Impact: Overview

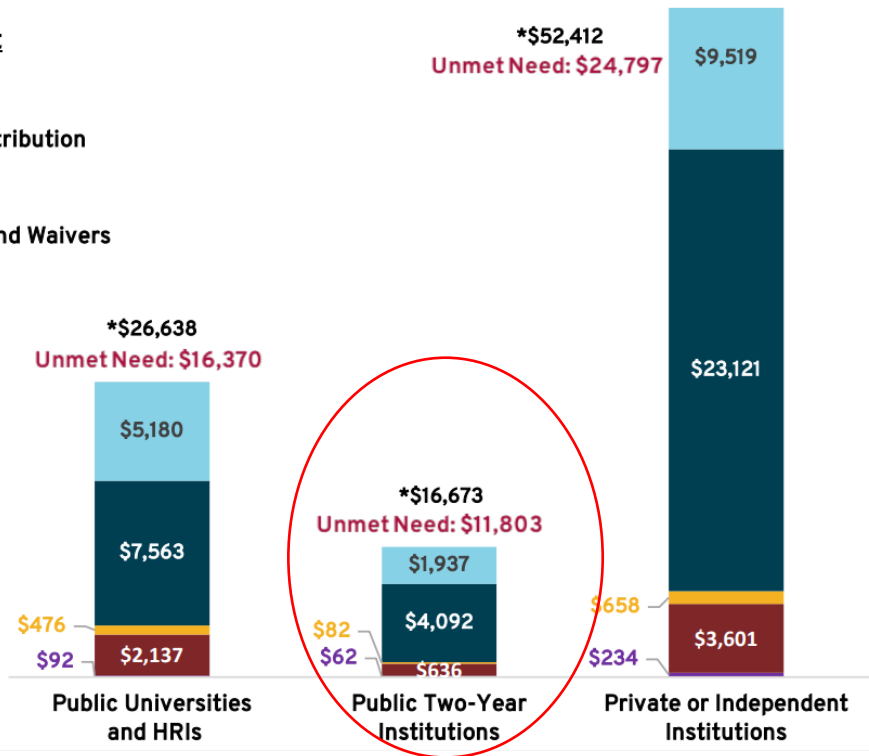
- Financial aid for two-year institutions
- TEOG program development
- TEOG Now
- Research design
- Findings
- Summary and implications



TEOG Impact: Financial Aid for Public Two-year Institutions Students

Average Per Recipient

- *Cost of Attendance
- Expected Family Contribution
- Gift Aid
- Tuition Exemptions and Waivers
- Need-Based Loans
- Work-Study



Source: Report On Student Financial Aid In Texas Higher Education FY 2023, THECB.

- Enrollment in Texas public two-year institutions currently covers **51%** among all enrollment in Texas public Institutions in 2024.
- Students attending two-year institutions have a **lower expected family contribution** compared to students in other type of institutions in Texas.
- Texas residents attending Texas two-year public institutions still had a **substantial amount of unmet need** despite the \$12.9 billion in financial aid distributed through federal, institutional, private, and state funding in FY 2023.

TEOG Impact:

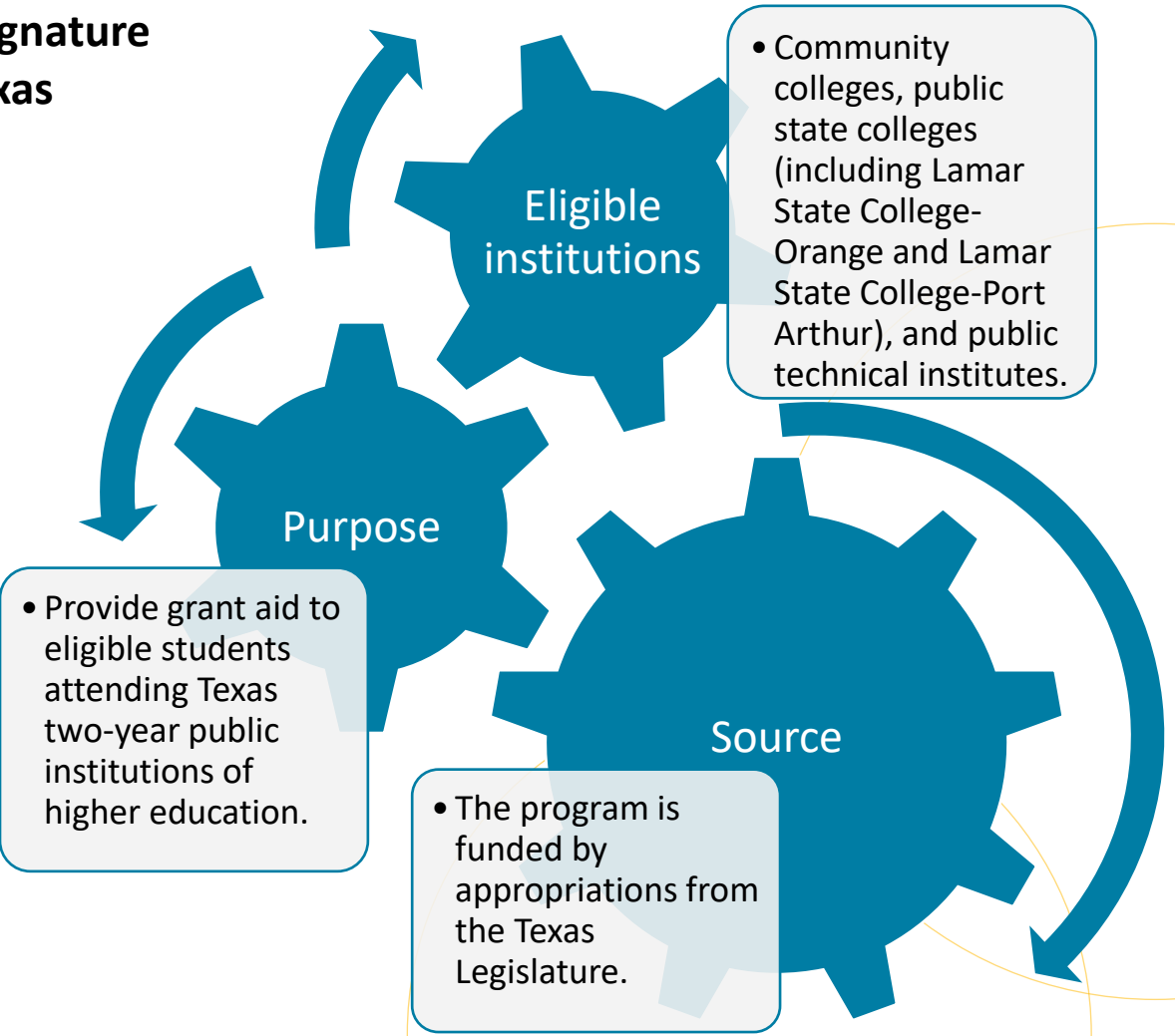
TEOG Program Development

The TEOG Program has remained one of the state's three signature grant programs providing access to higher education for Texas students who have financial need.

**77th Legislature
SB 1596**
Create a TEXAS Grant II program for students enrolled in two-year colleges

**79th Legislature
SB 1227**
Changes the name of the TEXAS Grants II program to the Texas Educational Opportunity Grant.

**88th Legislature
HB 8**
1. Increased by \$133.5 million above the current level
2. Removes the existing prohibition against using Pell Grants for the institutional match



TEOG Impact:

TEOG Eligibility Requirements

To receive an initial year award through the Program, a student must:

- (1) be a resident of Texas;
- (2) show financial need;
- (3) have applied for any available financial aid assistance;
- (4) be enrolled at a participating institution on at least a half-time basis as an entering student; and
- (5) be enrolled in an associate degree or certificate program at a participating institution.

(b) To receive a continuation award through the Program, a student must:

- (1) have previously received an initial year award through this program;
- (2) show financial need;
- (3) be enrolled on at least a half-time basis;
- (4) be enrolled in an associate degree or certificate program at an eligible institution; and
- (5) make satisfactory academic progress towards an associate degree or certificate, as defined in §22.257 of this subchapter (relating to Satisfactory Academic Progress).

Source: Texas Educational Opportunity Grant FY 2024 Program Guidelines, THECB.

Source Note: The provisions of this §22.256 adopted to be effective August 3, 2020, 45 TexReg 5342; amended to be effective February 15, 2024, 49 TexReg 686

TEOG Impact:

TEOG Program Facts

Semester Maximum ([TAC, Title 19, Section 22.261](#))

Students receiving a TEOG award cannot exceed the **semester** maximum amount. Students may be issued a total of three awards (fall, spring, and summer) in an academic year. Proration is not required for this program, but institutions have discretion in determining the grant amount, up to the semester maximum.

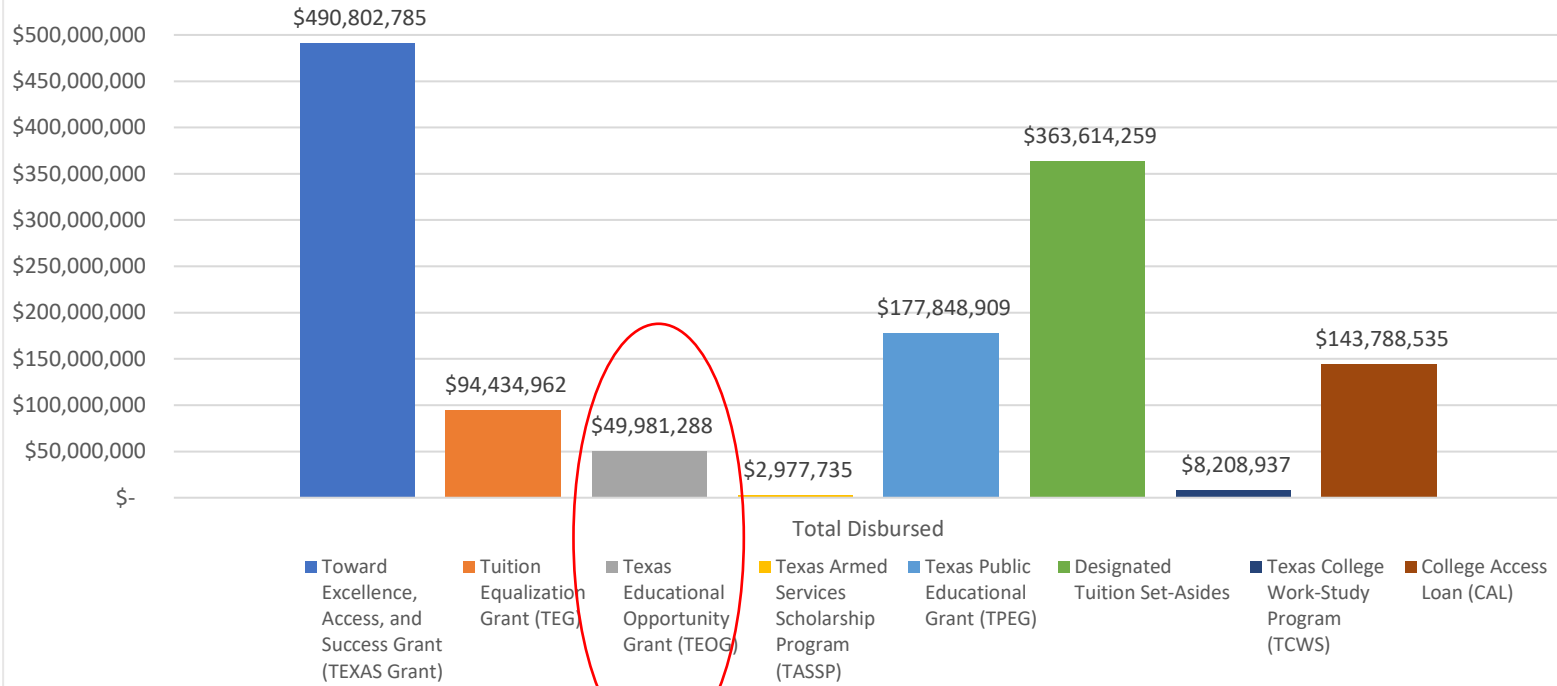
2024-25 Award Maximums		
Students may be issued a total of three awards (fall, spring, and summer) in an academic year.		
Institution Type	Year Max	Semester Max (fall, spring & summer)
Public State Colleges	\$5,190	\$1,730
Public Technical Institutes	\$12,855	\$4,285
Public Community Colleges	\$8,658	\$2,886

Covering Tuition and fees:

Institutions are required to match funds for all TEOG recipients, regardless of whether the student is charged in-district or out-of-district tuition and fees. Institutions are required to cover the cost of tuition and required fees that exceed the TEOG award amount using other non-loan funds from federal, state, institutional, or outside sources.

FY 2023 TEOG Disbursement and Recipient Profile

Table 1. Total Disbursed State Financial Aid FY2023



FY 2023 TEOG Recipient Profile

Avg. Income	\$26,047
\$0 EFC	65%
At or Below Pell/EFC	98%
Income Below Poverty	58%

Source: data is from the Report On Student Financial Aid in Texas Higher Education FY2023, THECB.

Program	# Recipients	Avg. Disbursed
Texas Armed Services Scholarship Program (TASSP)	331	\$8,969
Texas College Work-Study Program (TCWS)	3,521	\$2,328
College Access Loan (CAL)	7,485	\$19,126
Texas Educational Opportunity Grant (TEOG)	19,835	\$2,518
Tuition Equalization Grant (TEG)	25,534	\$3,695
Toward Excellence, Access, and Success Grant (TEXAS Grant)	88,468	\$5,541
Texas Public Educational Grant (TPEG)	123,651	\$1,434
Designated Tuition Set-Asides	132,783	\$2,735

TEOG Impact: Research Questions

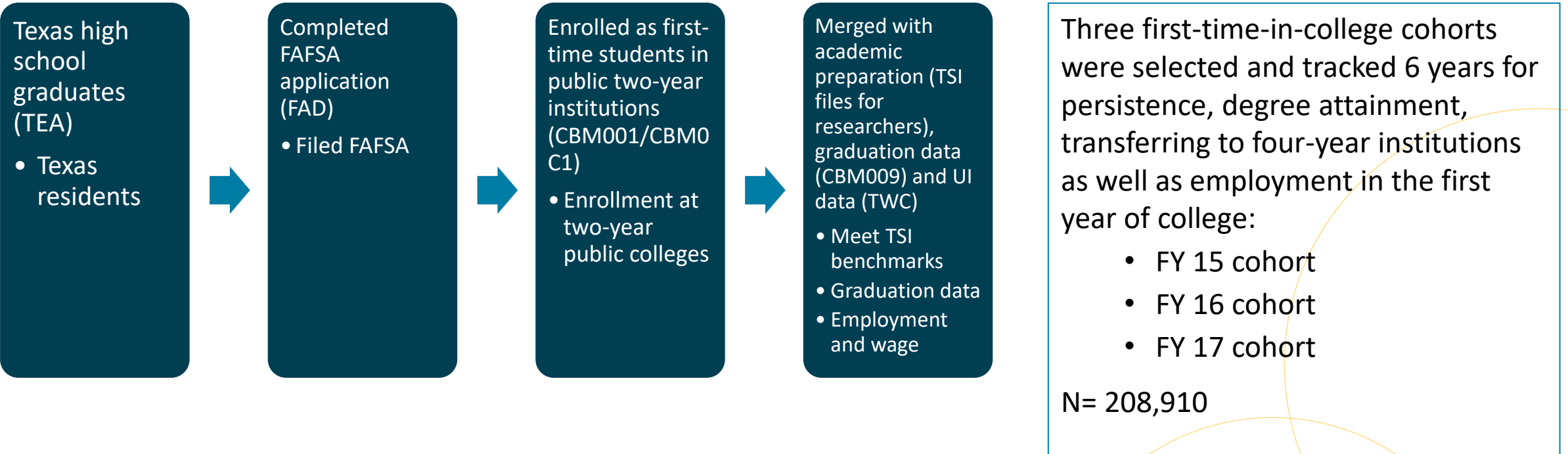
1. How are the demographic, financial, academic characteristics and outcomes of TEOG awardees compared to non-TEOG awardee students?

2. Does TEOG financial aid have causal effects on community student's persistence, transfer to four-year institutions, associate degree attainment and working in the first-year?

3. What is the pattern of TEOG disbursements among Texas two-year public institutions ?

4. Do the causal effects of TEOG on student's outcomes vary by institution's aid disbursement circumstances?

TEOG Impact: Study Sample



TEOG Impact: Data Sources



Background Characteristics

- Age, gender, race
- Limited English proficiency
- First-gen college status*
- *Calculated using Father's and mother's highest education level; Neither parent has earned a four-year degree from FAD

Sources: CBM0C1/001, TEA, FAD



Financial Characteristics

- Have even received TEOG in six year
- Pell grants recipient status
- Expected family contribution
- Students on Free/Reduced Lunch or with Other Financial difficulties

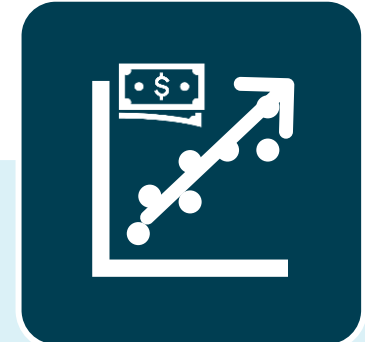
Source: FAD, TEA



Academic Characteristics

- Students who met TSI benchmark in math in the first year of college
- Attempted credit hours in first year: ≥ 30 or < 30

Source: CBM002, CBM0CS



Outcomes

- Persisted to second year
- Earned an associate degree
- Transferred to four-year institutions
- Have worked in the first-year

Sources:
CBM009, CBM0C1/001, CBM0CS, TWC UI Wage data.

TEOG Impact: Analyses

- **Descriptive analysis**

Q1: How are the demographic, financial, academic characteristics and outcomes of TEOG awardees compared to non-TEOG awardee students?

- Chi-squared test, T-test

Q3: What is the pattern of TEOG disbursement circumstances among Texas two-year public institutions?

- K-means cluster analysis

- **Quasi-experimental analysis**

Q2: Causal effects of TEOG on student's outcomes

- Propensity score matching

Q4: Do the causal effects vary by institutional disbursement characteristics?

- PSM and subgroup analysis

TEOG Impact:

Percentage of Students Received TEOG funding

- 9% of students in the study sample have received TEOG in their first-year of college;
- 11% of students in the study sample have received TEOG within six years.



Q1: How do TEOG recipients compare to students who did not receive TEOG on background characteristics?

Demographic Characteristics	TEOG Recipients	Students didn't receive any TEOG Grants in six years	Statistically Significant Difference
Pct. Hispanic/Latino Students	60.9%	49.8%	Y
Pct. Black/African American Students	16.6%	14.3%	Y
Pct. Female Students	58.3%	52.5%	Y
Pct. First-generation College Students	58.3%	49.6%	Y
Pct. Limited English Proficient Students	36.4%	25.9%	Y

Q1: How do TEOG recipients compare to students who did not receive TEOG on financial characteristics?

	TEOG Recipients	Students didn't receive any TEOG Grants in six years	Statistically Significant Difference
Median Expected Family Contribution by TEOG Recipients Status	\$60	\$2,011	Y
Pct. Students on Free/Reduced Lunch or with Other Financial difficulties	76.50%	58.50%	Y
Pct. Students by Pell Status	99.60%	65.20%	Y

Q1: How do TEOG recipients compare to non-TEOG recipients on academic characteristics?

	TEOG Recipients	Students didn't receive any TEOG Grants in six years	Statistically Significant Difference
Pct. Students met TSI Benchmark in Math in the First-year of College	46.80%	48.50%	Y
Pct. Students Took 30 Semester Credit Hours or More in the First-Year	17.60%	15.40%	Y

Q1: How do TEOG recipients compare to non-TEOG recipients in terms of outcomes?

	TEOG Recipients	Students didn't receive any TEOG Grants in six years	Statistically Significant Difference
Pct. Students Persisted to Year 2	52.7%	45.4%	Y
Pct. Earned Associate Degrees	32%	24%	Y
Pct. Students worked in First-year of College	76.4%	80.6%	Y
Pct. Students Transferred to four-year institutions	24.5%	25%	N

Q2: Propensity score matching

- Addressing selection bias in observational studies
 - Treatment is not randomly selected
 - People in the treatment group could differ systematically from those in the control group
- Propensity score: the probability of treatment assignment conditional on observed baseline characteristics.
- Forming matched sample based on propensity scores from treatment and control group will address the issue of difference in baseline characteristics.

Q2: Data preprocessing before impact analysis

- Class imbalance affects the prediction accuracy of propensity score.
- Use stratified random sampling to undersample the group of students that didn't receive TEOG grants.

Non-TEOG recipients	N before resampling	N after resampling	Pct./Mean before resampling	Pct./Mean after resampling
Female	184,999	21,638	52%	52%
White	184,999	21,638	32%	32%
Black	184,999	21,638	14%	14%
Hispanic	184,999	21,638	50%	50%
Asian	184,999	21,638	3%	3%
Limited English Proficiency indicator	184,999	21,638	26%	25%
Financial difficulty indicator	184,999	21,638	58%	58%
Pell Recipients	184,999	21,638	65%	65%
Working in Year one	184,999	21,638	81%	81%
Took 30 or more credits in year one	184,999	21,638	15%	15%
Enrolled full-time in Year One	184,999	21,638	59%	59%
First-gen students	130,272	15,184	50%	50%
Passed TSI Math	146,754	17,095	48%	49%
Family Expected Contribution	174,692	20,454	\$8,660	\$8,700
Persisted to Year 2	184,999	21,638	45%	45%
Earned associate degree	184,999	21,638	24%	23%
Transferred to four-year inst.	184,999	21,638	25%	24%
Age at entry in Year one	161,575	18,992	18	18.00
Institution clusters	184,999	21,638	100%	100%
Group 1	25,591	4,056	19%	19%
Group 2	142,783	16,919	77%	78%
Group 3	6,625	663	4%	3%

Q2: Using logistic regression to obtain propensity score

Logistic regression (Number of obs = 25,166)

Log likelihood = -13967.226

TEOG recipients Status	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Female (ref: male)	0.16	0.03	5.50	0.00	0.10	0.22
Hispanic (ref: non-Hispanic)	-0.02	0.04	-0.38	0.70	-0.09	0.06
Black (ref: non-black)	-0.01	0.05	-0.30	0.76	-0.11	0.08
First-gen students (ref: continuing-gen)	0.08	0.03	2.71	0.01	0.02	0.14
Limited English proficiency (ref: no LEP)	0.18	0.04	5.06	0.00	0.11	0.25
Financial difficulty (TEA) (ref: no financial difficulty)	0.20	0.04	5.75	0.00	0.13	0.27
Pell grants recipients (ref: non-Pell recipients)	4.96	0.21	23.90	0.00	4.56	5.37
Passed TSI Math (ref: did not pass TSI math)	0.11	0.03	3.64	0.00	0.05	0.17
Semester credit hours taken in Year 1	0.05	0.00	25.96	0.00	0.05	0.06
Expected family contribution	0.00	0.00	-11.72	0.00	0.00	0.00
Age in the first year of college	-0.13	0.02	-5.36	0.00	-0.18	-0.08
cons	-3.46	0.51	-6.82	0.00	-4.46	-2.47

LR chi2(11) = 6486.27

Prob > chi2 = 0.0000

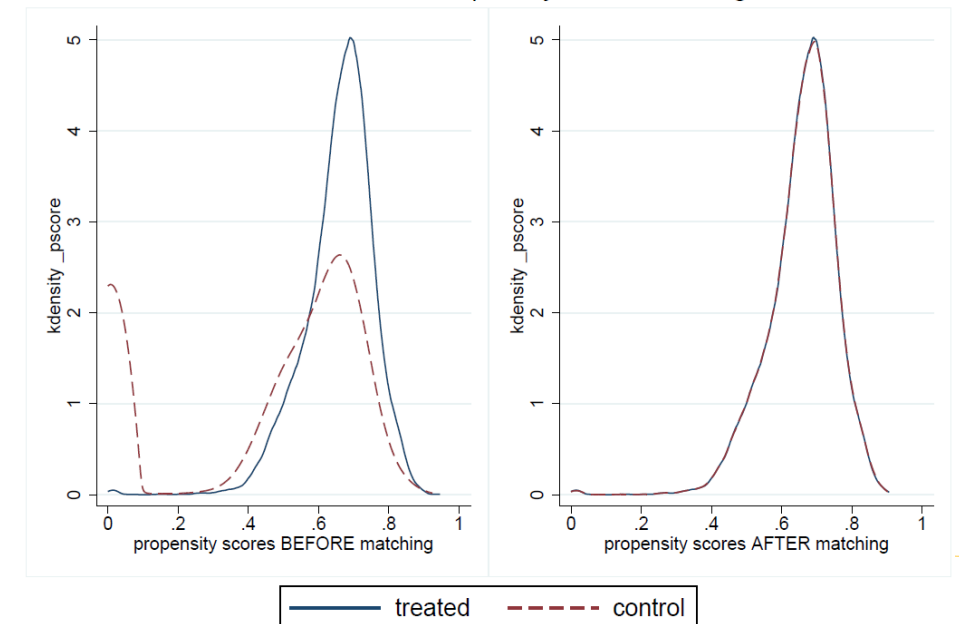
Pseudo R2 = 0.1884

Q2: PSM on resampled data

Treatment-effects estimation			Number of obs = 25,166			
Estimator: propensity-score matching			Matches: requested = 1			
Outcome model : matching			min = 1			
Treatment model: logit			max = 56			
(1 vs 0)Average Treatment Effects on the Treated	Coefficient	Std. err.	z	P> z	95% conf. interval	
Persisted to Y2	0.08	0.01	8.15	0.00	0.06	0.09
Attained associate degree	0.05	0.01	6.62	0.00	0.04	0.07
Working in first-year	-0.03	0.01	-3.90	0.00	-0.05	-0.01
Transferred to four-year institutions	0.01	0.01	1.40	0.16	0.00	0.03

Variable	Unmatched Mean Difference	Matched Mean Difference	Changes
Female	0.06	0.01	↓
Hispanic	0.08	0.01	↓
Black	0.01	0.00	↓
First-gen students	0.08	0.00	↓
Limited English proficiency	0.09	0.01	↓
Financial difficulty (TEA)	0.14	0.00	↓
Pell grants recipients	0.28	0.00	↓
Passed TSI Math	0.01	0.00	↓
Semester credit hours taken in Year 1	2.57	0.05	↓
Expected family contribution	5842.50	8.00	↓
Age in the first year of college	0.05	0.00	↓

Before and After Propensity Score Matching



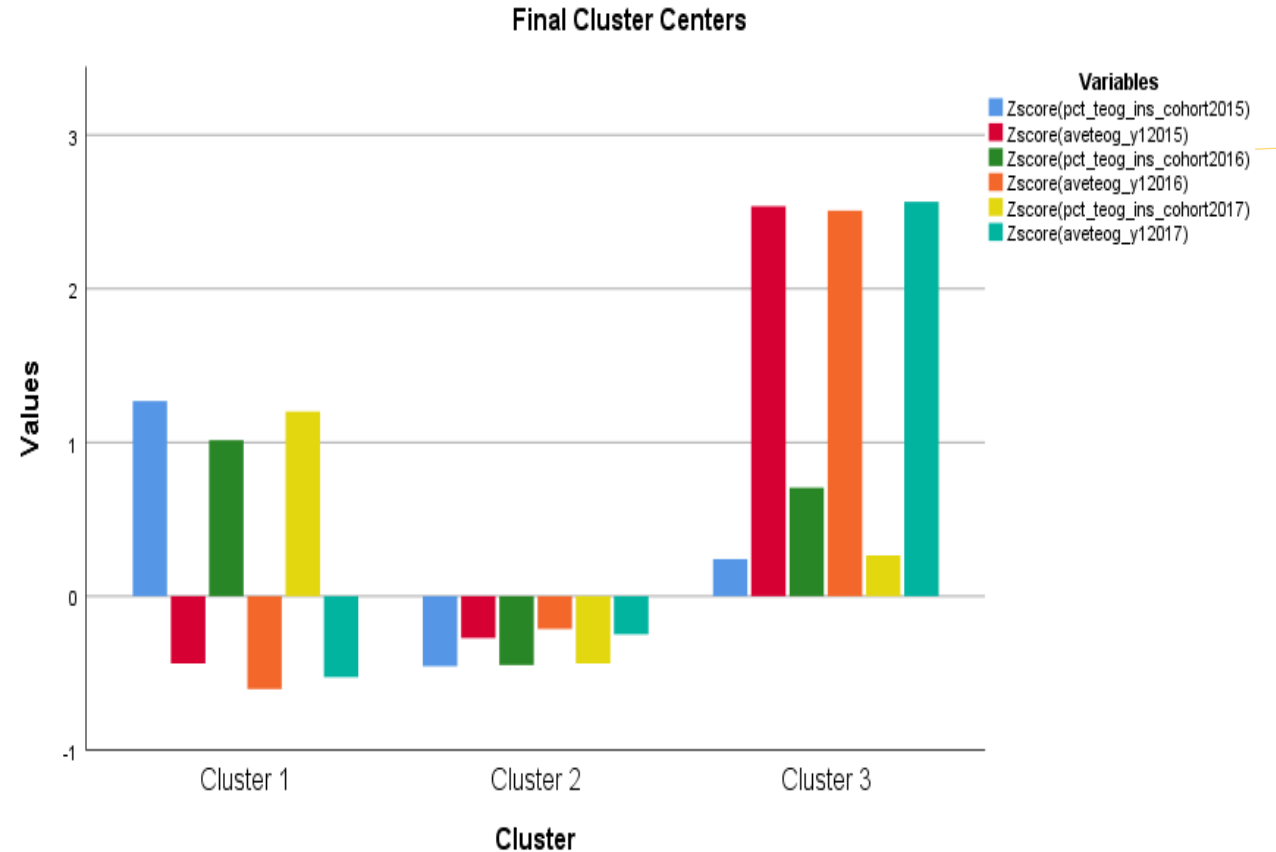
Q3: TEOG Impact: Institution's TEOG disbursement Types

K-means analysis was used to categorize institutions into three clusters by the following key variables:

Key variables used on the institutional level for the three cohorts FY2015-2017:

- The Percentage of students who have received TEOG in the first-year of college out of the whole study sample.
- Average TEOG received per student who has received TEOG.

Cluster	Pct. Students Received TEOG	Average TEOG for TEOG Recipients	Number of Institutions
Cluster 1	18%	\$1,723.79	18 (22%)
Cluster 2	7%	\$1,978.50	55 (67%)
Cluster 3	13%	\$4,512.79	9 (11%)



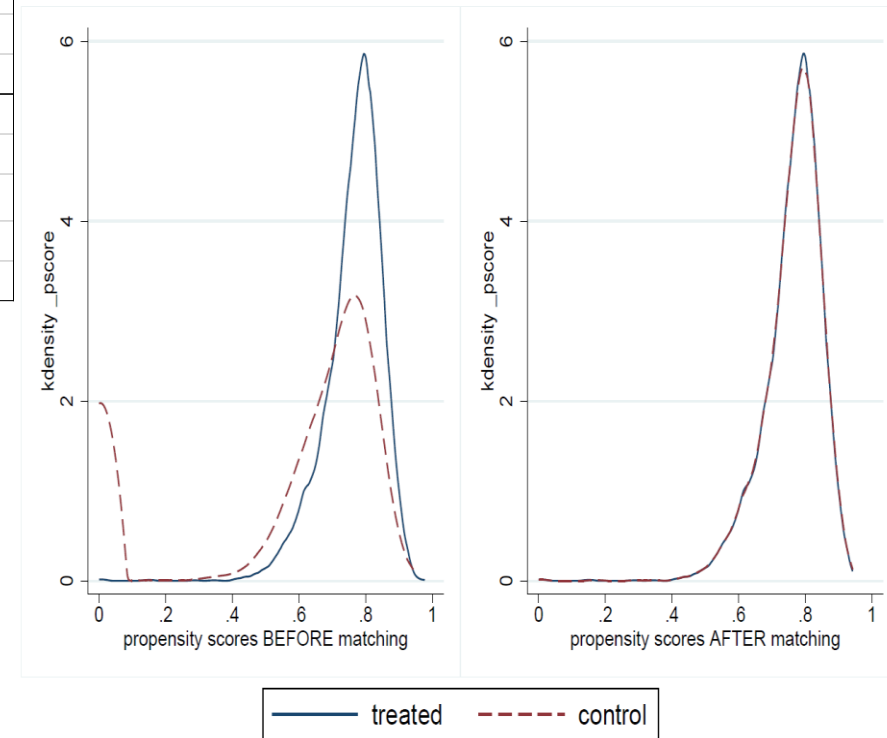
Q4: PSM on resampled data Group 1

Culster	Pct. Students Received TEOG	Average TEOG for TEOG Recipients	Number of Institutions
Cluster 1	18%	\$1,723.79	18 (22%)

Treatment-effects estimation		Number of obs = 7,481				
Estimator: propensity-score matching		Matches: requested = 1				
Outcome model : matching		min = 1				
Treatment model: logit		max = 42				
(1 vs 0)ATET	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Persisted to Y2	0.12	0.02	6.50	0.00	0.08	0.15
Attained associate degree	0.07	0.02	4.19	0.00	0.04	0.10
Working in first-year	-0.01	0.02	-0.84	0.40	-0.04	0.02
Transferred to four-year institutions	-0.01	0.02	-0.69	0.49	-0.04	0.02

Variable	Unmatched Mean Difference	Matched Mean Difference	Changes
Female	0.08	0.00	↓
Hispanic	0.02	0.03	↑
Black	0.02	0.02	▬
First-gen students	0.08	0.00	↓
Limited English proficiency	0.06	0.03	↓
Financial difficulty (TEA)	0.08	0.01	↓
Pell grants recipients	0.21	0.00	↓
Passed TSI Math	0.05	0.02	↓
Semester credit hours taken in Year 1	2.78	0.09	↓
Expected family contribution	4239.20	45.80	↓
Age in the first year of college	0.09	0.02	↓

Before and After Propensity Score Matching: Group 1

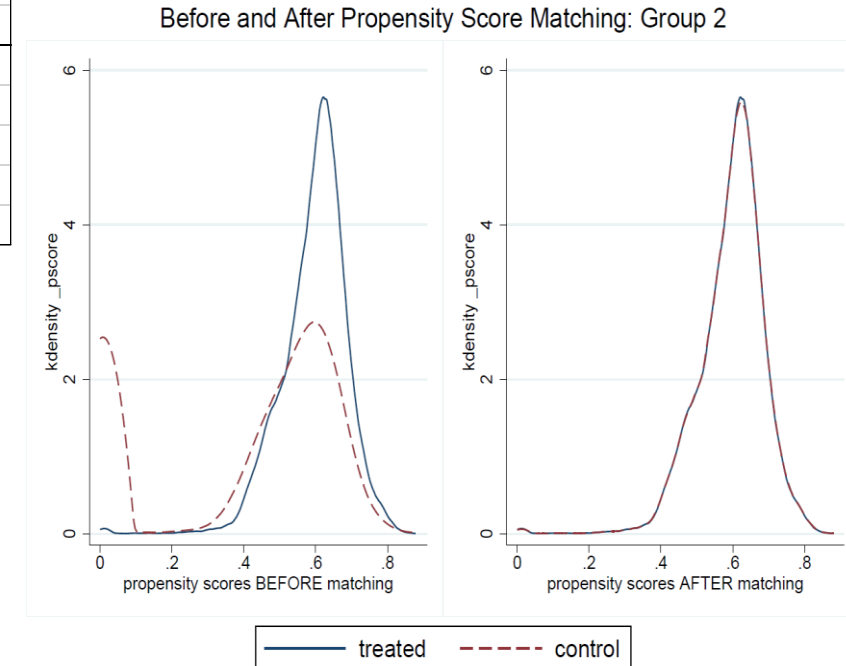


Q4: PSM on resampled data Group 2

Cluster	Pct. Students Received TEOG	Average TEOG for TEOG Recipients	Number of Institutions
Cluster 2	7%	\$1,978.50	55 (67%)

Treatment-effects estimation			Number of obs = 16,577			
Estimator: propensity-score matching			Matches: requested = 1			
Outcome model : matching			min = 1			
Treatment model: logit			max = 24			
(1 vs 0)ATET	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Persisted to Y2	0.04	0.01	3.95	0.00	0.02	0.07
Attained associate degree	0.05	0.01	4.59	0.00	0.03	0.07
Working in first-year	-0.02	0.01	-1.75	0.08	-0.03	0.00
Transferred to four-year institutions	0.02	0.01	2.17	0.03	0.00	0.04

Variable	Unmatched Mean Difference	Matched Mean Difference	Changes
Female	0.06	0.01	↓
Hispanic	0.05	0.01	↓
Black	0.04	0.00	↓
First-gen students	0.09	0.00	↓
Limited English proficiency	0.05	0.00	↓
Financial difficulty (TEA)	0.13	0.01	↓
Pell grants recipients	0.30	0.00	↓
Passed TSI Math	0.01	0.01	↓
Semester credit hours taken in Year 1	2.20	0.02	↓
Expected family contribution	6474.70	13.30	↓
Age in the first year of college	0.00	0.02	↑

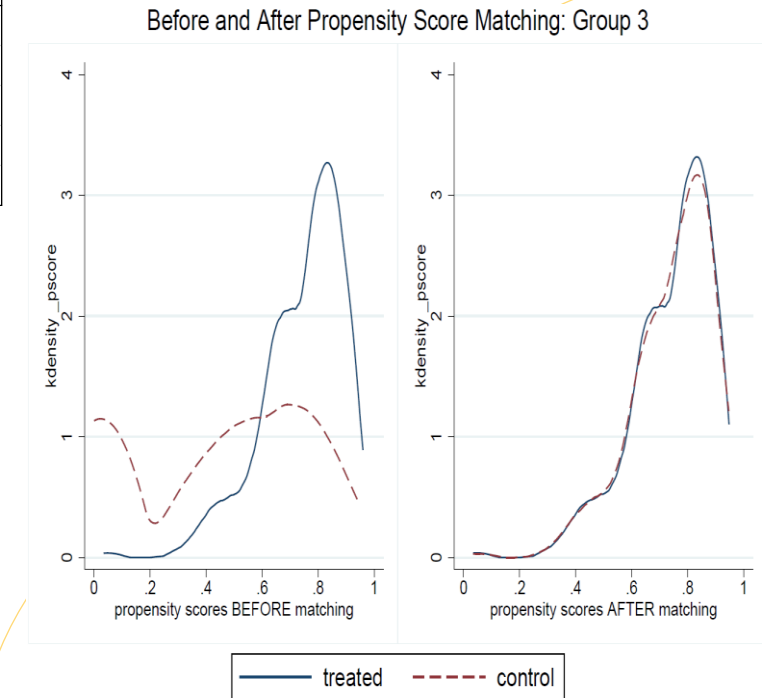


Q4: PSM on resampled data Group 3

Cluster	Pct. Students Received TEOG	Average TEOG for TEOG Recipients	Number of Institutions
Cluster 3	13%	\$4,512.79	9 (11%)

Treatment-effects estimation			Number of obs = 1,273			
Estimator: propensity-score matching			Matches: requested = 1			
Outcome model : matching			min = 1			
Treatment model: logit			max = 2			
(1 vs 0)ATET	Coefficient	Std. err.	z	P> z	[95% conf. interval]	
Persisted to Y2	0.19	0.05	3.89	0.00	0.10	0.29
Attained associate degree	0.10	0.04	2.38	0.02	0.02	0.18
Working in first-year	-0.04	0.04	-0.81	0.42	-0.12	0.05
Transferred to four-year institutions	-0.02	0.04	-0.50	0.62	-0.09	0.05

Variable	Unmatched Mean Difference	Matched Mean Difference	Changes
Female	0.01	0.01	▬
Hispanic	0.03	0.00	↓
Black	0.01	0.01	↓
First-gen students	0.03	0.01	↓
Limited English proficiency	0.05	0.02	↓
Financial difficulty (TEA)	0.05	0.02	↓
Pell grants recipients	0.28	0.00	↓
Passed TSI Math	0.15	0.05	↓
Semester credit hours taken in Year 1	5.94	0.52	↓
Expected family contribution	5006.20	134.80	↓
Expected family contribution in the first year of college	0.03	0.04	↑



Q4: Cross Group Comparisons on ATET

Average Treatment Effect on the Treated by Institution Groups (Treatment effects for TEOG recipients)			
Outcomes	Group 1	Group 2	Group 3
Persisted to Y2	11.61%***	4.46%***	19.46%*
Attained associate degree	6.92%***	4.64%***	9.85%*
Working in Year 1	-1.35%	-1.55%	-3.51%
Transferred to four-year institutions	-1.16%	2.07%*	-1.85%

Limitations

- Data was structured on a yearly basis, and it could not capture the semester-to-semester changes of students instantly.
- Limited data of grant disbursement on the institutional level. TEOG grant was aggregated based on the student level grant aid disbursement.
- First-generation status was a proxy variable generated by using parent's education level in FAD data.
- Degree attainment rate: students who earned associate degrees could go on and pursue higher degrees already and their educational aspirations could be an unmeasured factor that influences their degree attainment.

Summary

- Students who received TEOG are more likely to be female, historically underrepresented minorities, first-generation, a higher percentage of them did not meet TSI benchmark in math, with limited English proficiency and financial difficulties.
- However, TEOG recipients have higher rates to take 30 or higher credits in first year, persist to Y2, and attain associate degrees. A higher percentage of them did not work in the first year.
- The quasi-experimental study shows receiving TEOG grant has the treatment effect on the treated group in terms of increasing persistent rate, associate degree attainment rate while decreasing the first-year working rate.
- Three cluster groups were formed based on percentages of students receiving TEOG and average TEOG grant taken. The effect size comparisons for the treatment effects on the treated group in terms of persistent rate to Y2 and associate degree attainment rate are:
 - Group 3 > Group1>Group2
 - The treatment effects on the treated is the strongest among the group of institutions with highest average TEOG per recipients \$4,513 and 13% of first-time-in-college students received TEOG.

Implications

- **Targeted Outreach:** Focus outreach efforts on demographics of TEOG recipients—females, minorities, first-generation students, and those with financial need—to ensure awareness and access.
- **Monitoring Success:** Track persistence and degree completion rates among TEOG recipients to gauge program effectiveness and identify areas for improvement.
- **Encourage Full-Time Enrollment:** Promote full-time enrollment among TEOG recipients to maximize program benefits and increase degree completion rates.
- **Support Non-Working Students:** Provide additional support services to TEOG recipients who do not work in their first year to help them focus on their studies.
- **Foster Institutional Partnerships:** Collaborate with institutions to understand variations in TEOG impacts and share best practices of TEOG disbursement strategies.
- **Continuous Evaluation:** Conduct ongoing evaluation and research to assess TEOG program effectiveness and inform policy decisions for enhancing student success.

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