Adjusted Predicted Marginal Effects on College Enrollment for Central Texas High School Graduates

CENTRAL TEXAS
Student *Futures*
PROJECT

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Background

Texas *Closing the Gaps* reports (2000, 2004) cited the challenge of Texas' changing demographics to its future economic success.

In 2005, **Greater Austin Chamber of Commerce** formed a Matriculation Task Force to address projected **shortage of college-educated talent** for the region.
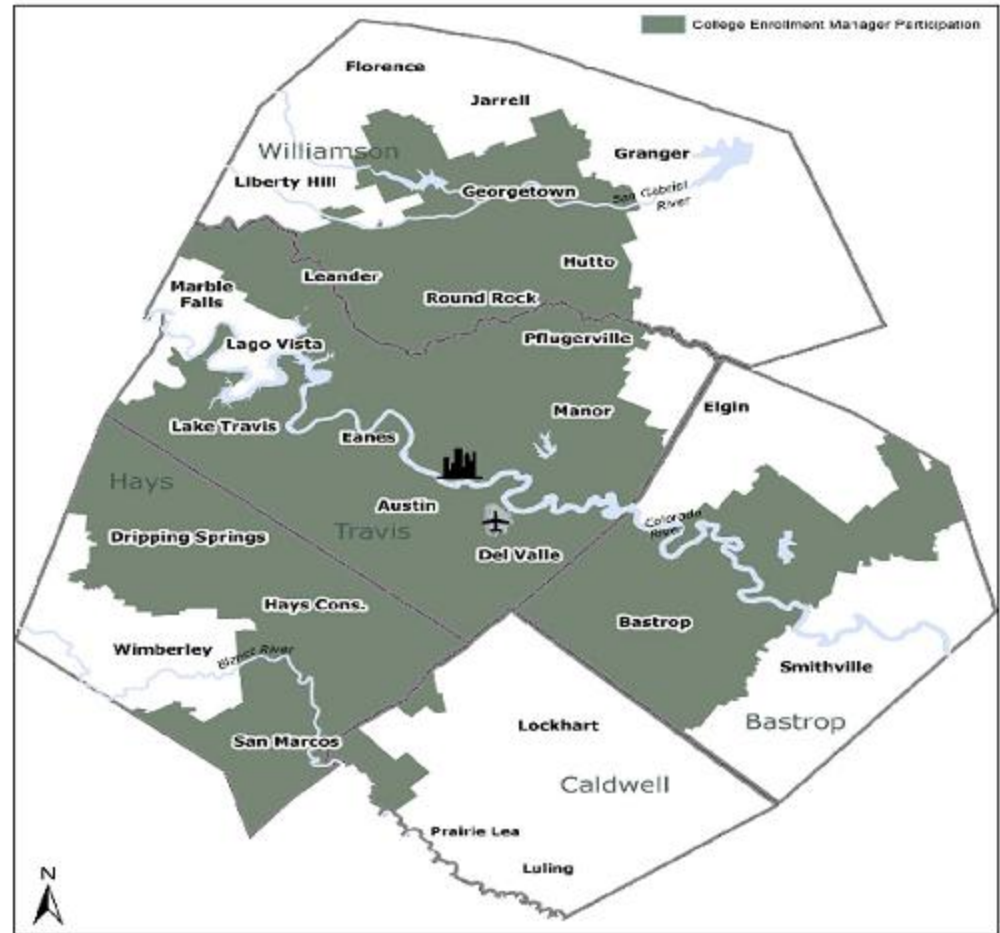
The Student Futures Project, formed in 2005, is a Researcher-Practitioner Partnership involving the Ray Marshall Center, GACC and 10 Central Texas Independent School Districts (ISDs) that examines and analyses outcomes from high school graduates in the region.

Four-County Effort

Goal

To increase the direct-to-college enrollment rate
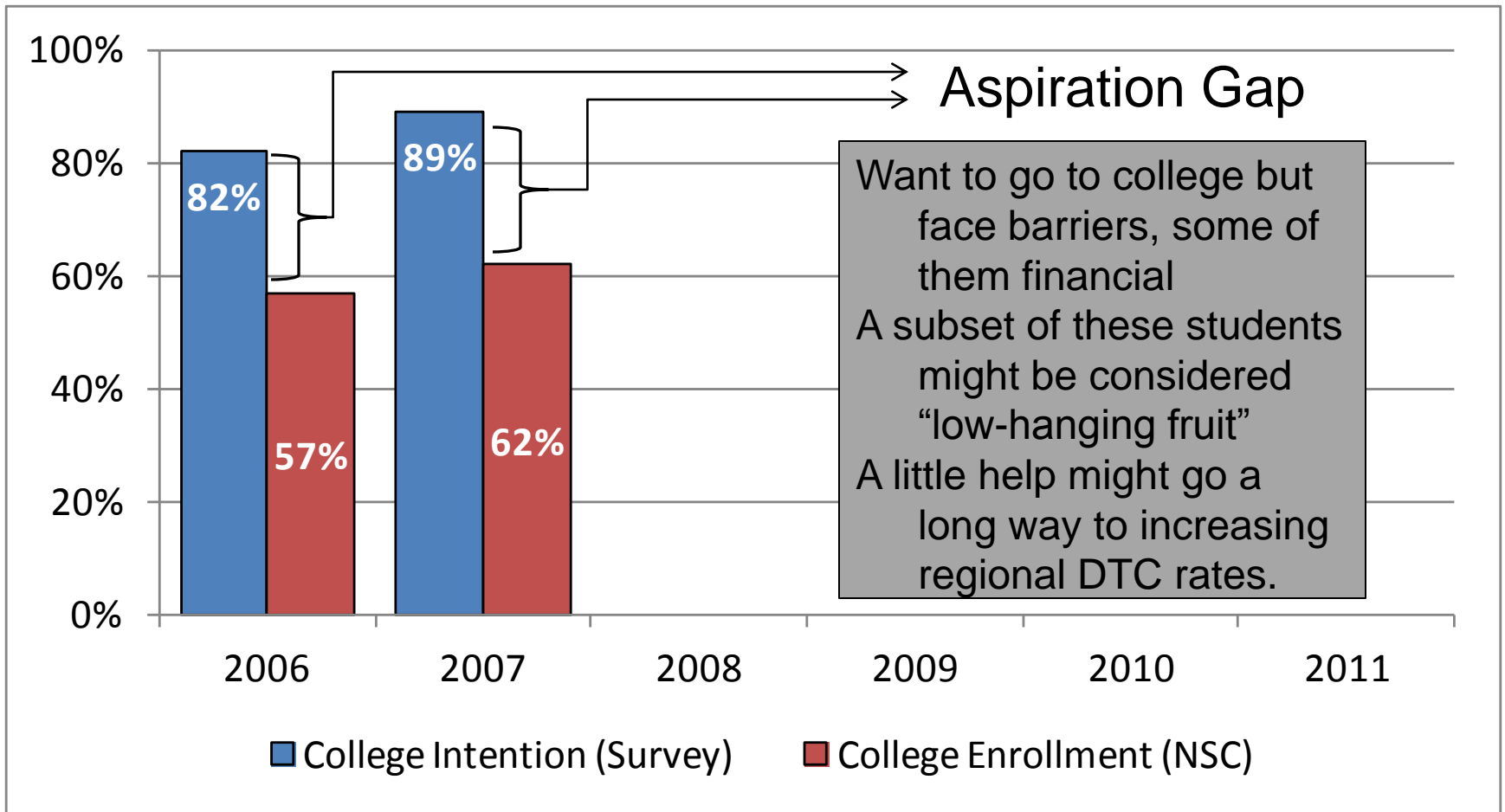
Student Futures Project Activities

For each graduating cohort starting in 2006, Student Futures Project activities at the Ray Marshall Center include the following:

- Collect prior student education records from districts,

- Survey high school seniors in the spring prior to graduation,

- Obtain postsecondary enrollment and employment outcomes information, and

- Produce reports utilizing the above information to determine who goes on to particular postsecondary outcomes and factors related to their choices.

Reports can be found at: www.centexstudentfutures.org

Aspiration Gap in Desire to Go to College and Direct to College Enrollment

Chart showing College Intention (Survey) and College Enrollment (NSC) by year.

- 2006: College Intention (Survey) 82%, College Enrollment (NSC) 57%
- 2007: College Intention (Survey) 89%, College Enrollment (NSC) 62%

Aspiration Gap

Want to go to college but face barriers, some of them financial

A subset of these students might be considered "low-hanging fruit"

A little help might go a long way to increasing regional DTC rates.

Years: 2006, 2007, 2008, 2009, 2010, 2011

Legend: ■ College Intention (Survey) ■ College Enrollment (NSC)
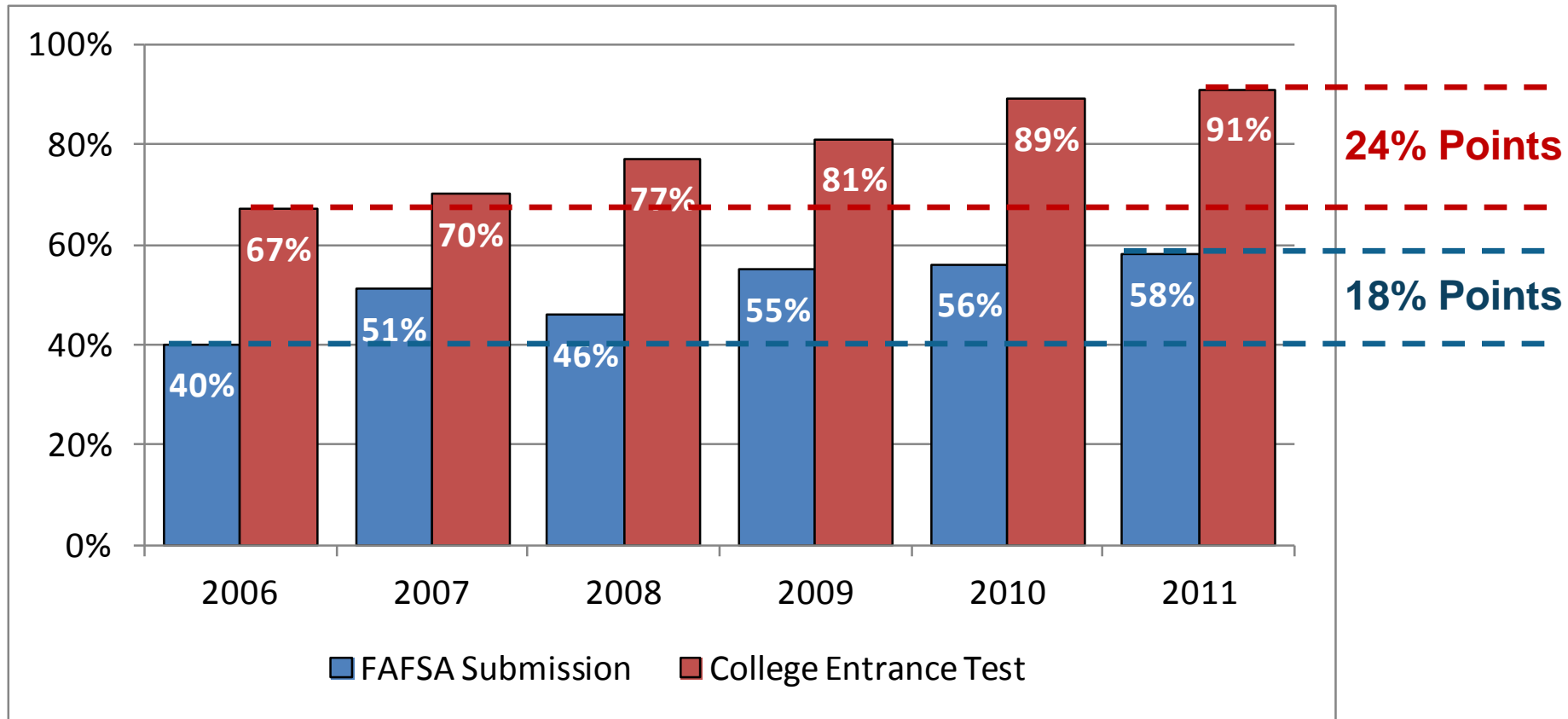
Regional Strategy

Bottom up:
- Austin Community College Connection
- Financial Aid Saturdays
- Common Application to college
- College readiness assistance for high school seniors

Top Down:
- Create College Enrollment Managers positioned in each high school in the region
- Advocate for college readiness in state accountability
- Pilot Strategic Compensation and other initiatives
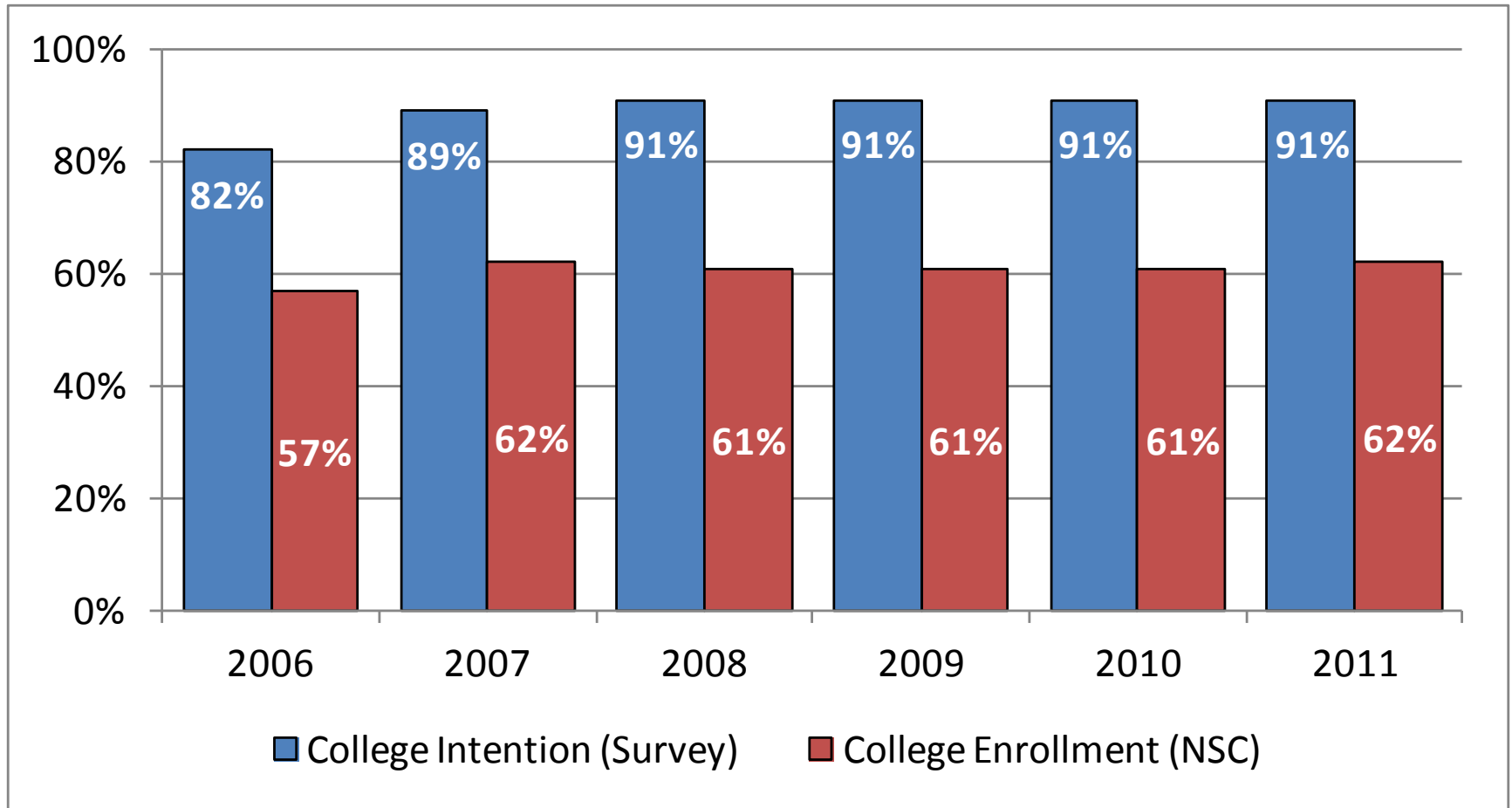- Create and foster real-time management tools (Common Application, FAFSA)

Participation in College Enrollment Activities, 2006 through 2011

Aspiration Gap and Direct to College Enrollment,
2006 through 2011

Bar chart comparing College Intention (Survey) and College Enrollment (NSC) from 2006 through 2011.

Year	College Intention (Survey)	College Enrollment (NSC)
2006	82%	57%
2007	89%	62%
2008	91%	61%
2009	91%	61%
2010	91%	61%
2011	91%	62%

State Funding Changes

Texas budget cuts starting in the spring of 2011 reduced state-provided education funds to local school districts by 6% over the next two years, a $4 billion reduction state-wide.

- Student Futures Project partners meet and seek guidance in determining which activities and student-based knowledge related to student transitions to college should continue.

- Community leaders hoped to more clearly articulate the importance of these activities on college enrollment to school boards, superintendents, and other stakeholders.

Research Questions

Drew Scheberle, Senior Vice President, Education and Talent Development for the Greater Austin Chamber of Commerce, articulated the research questions for this work (I paraphrase):

1) **What are the top 5 things districts and the community can do with students in their junior and senior years outside of the classroom to increase the regional direct-to-college enrollment rate?**

2) **What are the differential effects of these activities for specific groups of students?**

3) **What is the cumulative effect of these activities on direct-to-college enrollment rates?**

Data Sample and Sources

Sample includes 2009 survey takers (N=7,326), which represent 64% of the graduating class.

Historical School Records

- **Student demographics**
- **Courses taken**
- **Graduation rank**

Senior Surveys

- **Family background/ influences**
- **High school experiences**
- **Preparation for life after high school**

Postsecondary Education Records*

- **National Student Clearinghouse (NSC)**

Employment Records*

- **Texas Unemployment Insurance (UI) wage records**

•through 12/09

Variables of Interest

College Preparation Activities
- **Visiting one or more college campuses**
- **Taking the PSAT**
- **Taking ACC courses and/or dual credit**
- **Taking ACT/SAT preparation courses**
- **Participating in a college fair/college night**
- **Submitted a FAFSA**

Knowledge of financial aid

High school counselor interactions related to college

Methods students planned to use to pay for college

Means of the Variables of Interest, Overall and for Specific Populations

	Overall	Hispanic	Low-Income	First-Generation	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
N	7,326	2,247	1,901	1,663	1,988	1,946	1,844	1,548
College Preparation Activities								
Visited one or more college campuses	60%	52%	52%	45%	71%	65%	54%	48%
Took the PSAT	66%	59%	58%	50%	81%	71%	59%	47%
Took ACC courses (early college start, dual credit)	32%	30%	28%	26%	41%	33%	28%	22%
Took SAT/ACT prep course	33%	29%	31%	25%	36%	35%	32%	28%
Participated in a college fair/college night	47%	43%	42%	42%	55%	50%	43%	37%
Submitted a FAFSA	56%	56%	58%	56%	65%	60%	51%	45%
Considered financial aid process easy or very easy	22%	18%	18%	15%	23%	23%	21%	18%
Met with a high school or college counselor about:								
Writing college applications/essays	29%	31%	33%	29%	32%	29%	28%	25%
Scholarship/finanical aid information	43%	46%	49%	47%	52%	46%	40%	32%
College information	55%	54%	53%	54%	56%	59%	56%	49%
Currently plans to pay for college using the following:								
Scholarships and/or grants	60%	59%	61%	60%	69%	65%	56%	47%
Personal or family savings	56%	47%	41%	36%	61%	61%	53%	48%
Loans	42%	41%	39%	40%	46%	43%	41%	38%
Working during the school year/summer	60%	63%	63%	62%	61%	62%	58%	59%

Final Dataset

Outcome variable **in fall of 2009:** 2-year, 4-year, Not enrolled

Variables of Interest: Identified previously

Control Variables: **All other variables from the various data sources including:**
Race/ethnicity, home language, gender, free and reduced lunch status, special program participation, parental education, high school credits in middle school, failed 9th grade course, graduation rank, graduation plan, college readiness indicator, advanced math courses taken, AP courses taken, career and technology courses taken, number of high schools attended, extracurricular activities, time spent studying/ working in high school

Method (Part I)

1) **Multinomial logistic regressions for all individuals and for specific populations.**

2) **These models were then used to calculate the adjusted predicted probabilities* for each of the variables of interest.**

3) **A predicted effect differential was calculated by taking the adjusted predicted enrollment rate and subtracting the actual rate.**

*Adjusted predicted probabilities are calculated by changing the value of a single variable, leaving the value of all other variables unchanged, determining the new predicted enrollment outcomes for each student and then averaging them to find the predicted enrollment rate.

Variables of Interest
(Note on Endogeneity)

Endogeneity: Would anyone who doesn't intend to go to college fill out the FAFSA?

▪The share of students who do not want to go to college is relatively small (less than 10%)

▪The change in the predicted enrollment for most individuals from changing a single variable is very small. Those less likely to go on to college, even after adjusting for this change are still much less likely to go on to college. Thus, the predicted outcome does not often change (anyway) and in particular does not often change for students who do not intend to go to college.

Results 1: PE Differentials for Central Texas 2009 High School Graduates

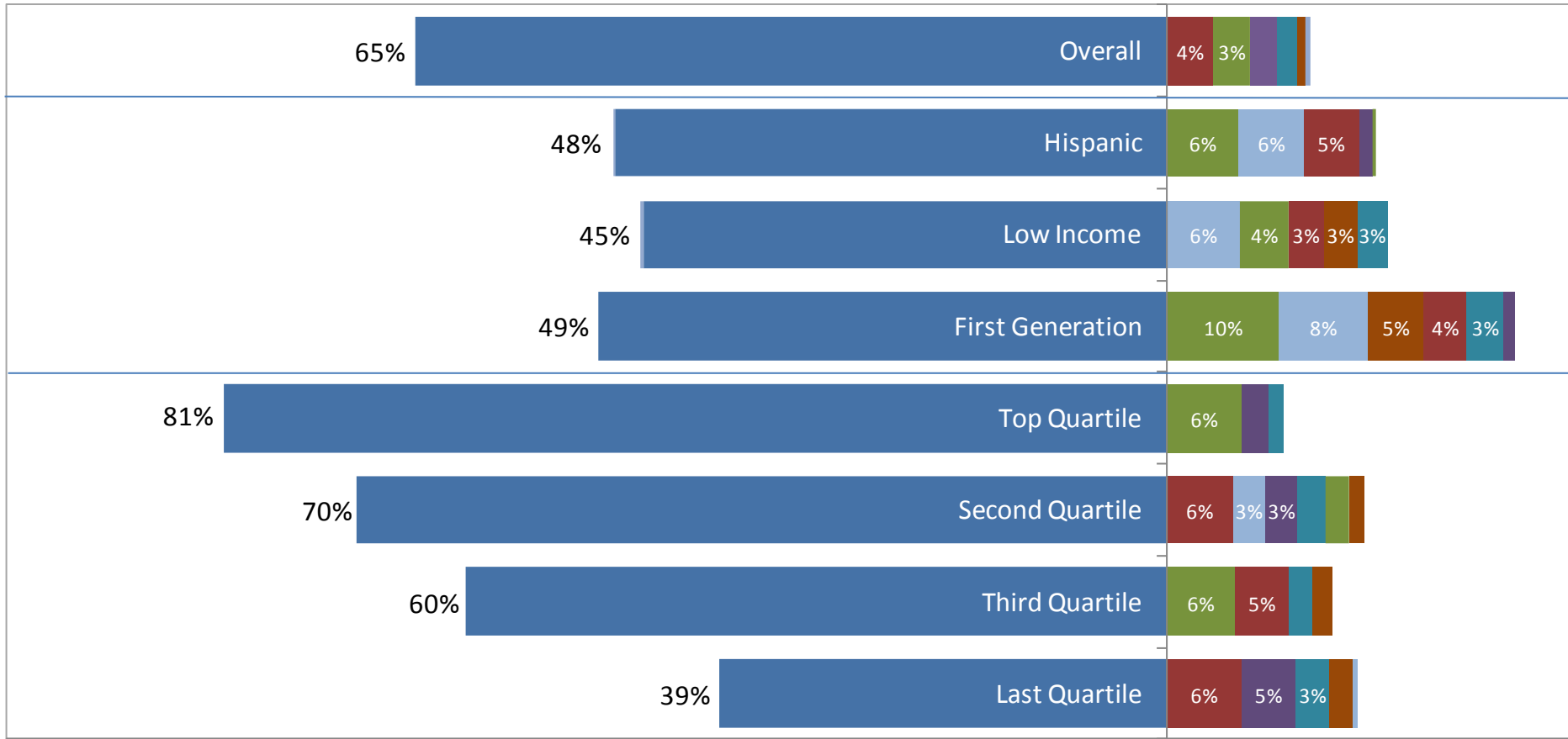|	Overall	Hispanic	Low-Income	First-Generation	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
N	7,326	2,247	1,901	1,663	1,988	1,946	1,844	1,548
Actual College Enrollment (Any)	69%	54%	51%	59%	86%	76%	65%	44%
Predicted Marginal Effect Differential (Predicted-Actual)								
College Preparation Activities								
Visited one or more college campuses	0%	-1%	-1%	-2%	2%	1%	-2%	0%
Took the PSAT	0%	1%	1%	4%	-1%	1%	3%	-2%
Took ACC courses (early college start, dual credit)	1%	1%	1%	-1%	1%	-1%	-1%	4%
Took SAT/ACT prep course	1%	0%	2%	3%	1%	2%	1%	2%
Participated in a college fair/college night	1%	0%	2%	3%	0%	1%	1%	1%
Submitted a FAFSA	1%	3%	2%	4%	2%	1%	3%	0%
Considered financial aid process easy or very easy	2%	5%	7%	9%	0%	5%	3%	2%
Met with a high school or college counselor about:								
Writing college applications/essays	0%	1%	-1%	-2%	0%	-2%	3%	-3%
Scholarship/finanical aid information	-1%	-1%	-1%	-3%	1%	0%	-5%	0%
College information	2%	2%	1%	2%	0%	2%	2%	3%
Currently plans to pay for college using the following:								
Scholarships and/or grants	-1%	1%	1%	1%	0%	-1%	0%	-1%
Personal or family savings	1%	0%	-1%	4%	0%	1%	1%	0%
Loans	1%	1%	0%	1%	2%	2%	0%	3%
Working during the school year/summer	-1%	-1%	-1%	-1%	0%	-2%	-1%	-2%

Method (Part II)

1) **Find all variables of interest that show non-negative differentials for all populations. (Some populations are not identifiable within school districts.)**

2) **Use these variables to find the adjusted predicted probability if none of the activities were engaged in by any students. We term this a baseline rate.**

3) **Find the cumulative effect of engaging in multiple activities by progressively "making" all students engage in each activity.**

4) **Engage in this process for the sample as a whole and for specific populations.**

Results 2: Predicted Cumulative Effects on College Enrollment

Baseline Enrollment ← | → **Cumulative Effect Enrollment**

Category	Baseline	Effects
Overall	65%	4% 3%
Hispanic	48%	6% 6% 5%
Low Income	45%	6% 4% 3% 3% 3%
First Generation	49%	10% 8% 5% 4% 3%
Top Quartile	81%	6%
Second Quartile	70%	6% 3% 3%
Third Quartile	60%	6% 5%
Last Quartile	39%	6% 5% 3%

Axis: 100% 80% 60% 40% 20% 0% 20%

Legend:
- ■ Met w/Counselor about College
- ■ Completed FAFSA
- ■ Plan to Pay for College Using Loans
- ■ Took SAT/ACT Prep. Course
- ■ Participated in College Fair
- ■ Considered Financial Aid Easy

Points of Interest

- The relationship between these activities on college enrollment rates is complex.

- When looking at the individual-level predicted effects, results indicate that the notion that closing the gap between college aspiration and enrollment might need more than a little help.

- Baseline enrollment rates demonstrate that many other factors play a very large role in determining whether students go to college.

- The group with the largest possible return on investment in these activities is not identified through current data systems in Texas K-12 schools—those who would be the first in their families to go to college.

- Not just completing the FAFSA, but knowledge of the financial aid process plays a key role.

Implications for Policy

- Focusing on multiple activities in the region could produce increases in direct-to-college enrollment rates; these efforts should be part of a combined package rather than operating in isolation.

- School districts should work to identify and keep accurate records of students who would be the first generation in their family to go to college. Targeting services to them could show larger potential returns on increasing direct-to-college enrollment rates.

- Financial aid Saturdays are not enough; perhaps having Juniors complete the FAFSA would build their knowledge of, and ease with, the financial aid process. Or working with districts to target specific populations of students might help.

- Is the investment worth the return?

- Are local effects of activities different?

Caveats

- The threshold for this study was to essentially predict what would happen if all students engaged in these activities or possessed certain knowledge. Considering that this would mean getting, potentially, thousands of high school seniors to do the same thing, this analysis should be considered optimistic. (Anyone here every taught in a high school?)

- This study is looking at surveyed students from the class of 2009. More solid conclusions would need to include additional cohorts of students and additional methods.

- This study is designed to meet the needs of the Central Texas Student Futures Project and while many of the demographic trends occurring in the region reflect those across the country, these results may not be completely generalizable.

Thank you! For more information:

www.centexstudentfutures.org

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