



Increasing Graduation Rates

Helping Students Take the Final Leap

Introduction

College attrition comes at a high cost to students, institutions, and state and federal governments. For students, not completing their degree can result in a significant loss of personal income due to lower lifetime wages in addition to the foregone earnings while in school.ⁱ For students who take out loans to finance their education, the personal costs extend to loan and interest repayment and those who do not complete their degree are more likely to become delinquent and default on their loans, impacting their credit ratings and interest rates for years.ⁱⁱ In addition, institutions and the state have invested money and resources into these students for several years; if students do not graduate, the institution's graduation rate suffers as does the state's ability to attract businesses with a well-educated workforce. Compounding that, lower earnings across the population can translate into a loss in potential tax revenue for the broader economy.ⁱⁱⁱ

National research suggests that one third of college dropouts are in good academic standing with more than two years of postsecondary education experience; developing strategies to aid these individuals to return and complete their degrees may be the most economical way to increase graduation rates.^{iv} With this in mind, this paper seeks to better understand a cohort of students at The University of Texas (UT) System academic institutions who have made significant progress towards receiving a baccalaureate degree (attempted 90 or more semester credit hours (SCH) within the UT System), yet have failed to complete their degree within six years.

To this end, this paper will cover three main points:

- The UT System six-year graduation rate for the 2008 cohort would be three percentage points higher if those with 90 or more attempted SCH and a final semester GPA of 2.5 had

Key Findings:

- Overall, students who did not complete their degree but had attempted 90 or more SCH were more likely to be male, Hispanic, student loan borrowers, and Pell Grant recipients compared to those who completed their degree. The students who completed their degree had a higher final semester GPA than those who did not.
- For those with 90 or more attempted SCH and a final semester GPA of 2.5 or higher, results for at least 4 institutions indicate:
 - The higher percentage of semesters in which they enrolled full-time, the more likely they were to complete
 - The higher the number of major changes, the less likely they were to complete
 - Those who had received a Pell Grant were less likely to complete
- Results point toward the potential impact of finances and major advising as critical to the likelihood of these students completing their degree, and thus increasing UT System graduation rates by as much as 10 percentage points, in the case of the 2008 cohort.

completed, and it would be 10 percentage points higher if the more than 1,700 students with 90 or more attempted SCH had earned their degree

- The characteristics of the students who have attempted 90 or more SCH but did not graduate in six years, compared to those who did earn their degree
- The factors that are associated with graduating vs. not graduating for students who attempted at least 90 SCH

The Final Leap

Among The University of Texas System academic institutions, the percentage of students who entered as first-time, full-time undergraduates in Fall 2008 and who graduated from their starting institution within six years ranged from 31 percent to 80 percent.^v However, for some UT System schools, this rate significantly underrepresents the number of successful students since, among other things, the rate does not account for those who transfer to a different institution and graduate. When graduating from a different Texas institution is considered a success, graduation rates increase by 4 to more than 20 percentage points. For example, there is a 22 percentage point difference between San Antonio's "same" (students who started their college education at UTSA and graduated from UTSA) and "same or other Texas institution" (students who started their college education at UTSA and graduated from any public institution in Texas) six-year graduation rates for the Fall 2008 cohort. However, even broadening the definition of success to include graduation from any university, there are still many students who do not graduate.

Although persistence rates suggest many students drop out of college during their first or second year, analysis of enrollment data indicates that two thirds of the cohort attempted at least 90 semester credit hours (SCH) in residence at one or more UT System campuses. For example, more than 1,700 students from the 2008 cohort who attempted 90 or more credit hours failed to receive a degree from a UT System or other Texas institution within six years. In addition, very few students who leave a UT System institution with 90 or more attempted credit hours and no degree go on to graduate from an institution outside of the UT System. Of those 1,700 students with at least 90 credit hours attempted, nearly 600 had a GPA of 2.5 or higher in their final semester of enrollment, suggesting for those students that academic performance is not the primary factor that led to their failure to complete a degree. These students could take that final leap to completing their degree.

If the factors affecting students' ability to successfully earn a diploma had been identified and interventions used to ameliorate those effects, there may have been nearly 600 additional students graduating. For some institutions, in addition to the benefits to the student of completing their degree, this would result in a significant increase in the six-year graduation rate. For example, if the 126 UT El Paso students who attempted 90 or more credit hours and who also had a final semester GPA of 2.5 stayed at the institution and successfully completed, UTEP's "same" six-year graduation rate for the Fall 2008 cohort would have been 44 percent, rather than 38 percent.

Table 1. Six-Year Graduation Rates, Overall and for Students with 90 or More Attempted SCH
First-Time, Full-Time Undergraduate Degree-Seeking Cohort, Fall 2008

Starting Institution	Cohort Size ^{vi}	6-Yr Grad Rate – Same Institution ^{vii}	6-Yr Grad Rate – Same or Other TX Institution ^{viii}	Students Who Attempted 90+ SCH at a UT System Academic Institution				
				% of Graduation Rate Cohort Attempting 90+ SCH ^{ix}	6-Year Graduation Rate – Same or Any UT Campus ^x	6-Yr Grad Rate – Same or Any National Student Clearinghouse Institution	# who did not graduate	# with a final GPA >2.5 and did not graduate
UTA	2,254	42%	53%	57%	79%	80%	250	80
Austin	6,663	80%	84%	85%	91%	92%	474	146
UTD	1,090	71%	76%	75%	91%	91%	70	20
UTEP	2,060	38%	42%	52%	66%	67%	354	126
UTPB	332	34%	45%	43%	82%	84%	23	8
UTSA	4,762	31%	53%	54%	80%	80%	511	199
UTT	584	45%	58%	54%	87%	87%	42	13
Total	17,745	53%	63%	66%	83%	85%	1,724	592

Student Characteristics: Graduating vs. Not Graduating

This section explores various characteristics—including demographics, academic performance, and financial aid status—of students who have attempted at least 90 credit hours. The section compares these characteristics for students who earned their degree in six years from any institution to those who did not finish.

Demographics

Across all institutions, among those who made a final semester GPA of at least 2.5, 94 percent received a bachelor's degree from some school. However, almost 600 of these students who made satisfactory progress did not go on to earn a degree.

- Across all institutions, compared to those who earned a degree, those who did not receive a degree and had a final semester GPA of 2.5 or higher were:
 - more likely to be male (44% vs 52%);
 - more likely to be Hispanic (26% vs 45%); and
 - less likely to be White (48% vs 33%).

Key Definitions:

Except where explicitly stated, the data in this paper is based on the Fall 2008 cohort of first-time, full-time undergraduates at UT System academic intuitions.

Due to data limitations, the semester credit hours (SCH) include only those attempted in residence at a UT System academic institution. The SCH totals do not include transfer credits taken at a community college or other university or that were earned through dual credit, AP, IB, and CLEP. Thus, these SCH totals are likely underestimated.

The Pan American and Brownsville cohorts are not included in this study as these institutions closed at the end of AY 2015. UT Rio Grande Valley began enrolling students in Fall 2015.

Final semester GPA is used in the analysis as a proxy for a student being in good academic standing. Due to data limitations, GPA data is only available from Summer 2011 on, therefore it is not possible to calculate a cumulative GPA for this cohort.

Table 2. Gender and Race/Ethnicity**First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours, Fall 2008 Cohort*

Starting Institution	Received Bachelor's Degree from Any School	Count	% Male	% Female	% African American	% Asian American	% Hispanic	% Native American	% White
UTA	No	250	62%	38%	15%	18%	23%	1%	38%
	Yes	1,024	45%	55%	14%	22%	21%	0%	40%
Austin	No	474	55%	45%	8%	20%	26%	0%	42%
	Yes	5,181	43%	57%	5%	20%	19%	0%	55%
UTD	No	70	76%	24%	10%	23%	16%	0%	47%
	Yes	752	57%	43%	4%	35%	9%	0%	49%
UTEP	No	354	52%	48%	3%	1%	76%	0%	4%
	Yes	718	42%	58%	2%	2%	87%	0%	6%
UTPB	No	23	57%	43%	0%	0%	70%	0%	30%
	Yes	120	41%	59%	3%	1%	42%	0%	52%
UTSA	No	511	59%	41%	13%	10%	40%	1%	33%
	Yes	2,051	45%	55%	10%	13%	34%	0%	42%
UTT	No	42	71%	29%	7%	2%	7%	0%	83%
	Yes	275	37%	63%	8%	5%	8%	0%	79%
<i>FFTDS Students with 90+ SCH and Final Semester GPA of 2.5+</i>									
All	No	592	52%	48%	8%	12%	45%	1%	33%
	Yes	8,815	44%	56%	6%	18%	26%	0%	48%

*Students whose race/ethnicity was classified as "International" or "Unknown" were not included in this analysis. Therefore, the race/ethnicity categories do not total 100%

Academic Performance

- Across all institutions, the GPA for the last semester enrolled is notably higher for completers than for non-completers, suggesting that academic standing may be an important factor that distinguishes students who attempt 90 hours and subsequently graduate within six years from those who do not. This factor may be particularly important for students in programs where a minimum cumulative GPA is required to take courses within the major or to continue in the program.
- For two of the three institutions with a relatively large number of students participating in the Coordinated Admissions Program (CAP)^{xi}, Arlington and San Antonio, the students are more likely to receive their baccalaureate degrees than to not receive them. At Tyler, CAP students make up a larger proportion of non-completers than they do completers.
- Across all institutions, compared to those who earned a degree, those who did not receive a degree and had a final semester GPA of 2.5 or higher:
 - were less likely to have been in the top 25% of their high school class (64% vs 42%),
 - had lower median SAT scores (1190 vs 1040), and
 - had lower median GPA in last term (3.5 vs 3.0).

Table 3. Admissions Status, SAT Score, and Semester GPA for Last Regular Term*First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours, Fall 2008 Cohort*

Starting Institution	Received Bachelor's Degree from Any School	Count	% Admitted Top 10	% Admitted 11-25th	% Admitted Other	% CAP Student	SAT Average	SAT Median	GPA Last Regular Term Average	GPA Last Regular Term Median
UTA	No	250	10%	33%	58%	13%	1064	1065	1.86	2.00
	Yes	1,024	25%	29%	47%	18%	1088	1080	3.21	3.36
Austin	No	474	62%	16%	21%	0%	1212	1220	1.99	2.14
	Yes	5,181	71%	15%	14%	0%	1247	1260	3.39	3.50
UTD	No	70	23%	0%	77%	0%	1223	1210	1.70	1.67
	Yes	752	32%	1%	67%	0%	1271	1280	3.42	3.60
UTEP	No	354	9%	16%	75%	1%	904	890	2.05	2.25
	Yes	718	25%	26%	48%	3%	956	950	3.37	3.50
UTPB	No	23	26%	35%	39%	0%	1016	990	1.87	1.61
	Yes	120	34%	19%	47%	3%	1033	1030	3.39	3.50
UTSA	No	511	6%	17%	77%	27%	1026	1020	2.01	2.21
	Yes	2,051	10%	15%	75%	54%	1061	1060	3.20	3.32
UTT	No	42	12%	17%	71%	20%	810	890	1.81	1.97
	Yes	275	22%	13%	65%	10%	918	990	3.30	3.33
<i>FTFTDS Students with 90+ SCH and Final Semester GPA of 2.5+</i>										
All	No	592	23%	19%	58%	10%	1050	1040	3.19	3.03
	Yes	8,815	48%	16%	36%	9%	1170	1190	3.48	3.53

Financial Aid Status

In general, non-completers with at least 90 attempted hours are more likely to have taken out a least one federal student loan than are completers. At the majority of campuses, students who do not complete their degrees are more likely to have received a Pell Grant than those who do not. This, along with the loan data, suggests that failure to complete a degree, even after attempting 90 or more hours, is associated with financial need. (Table 4)

At all institutions (except Austin), completers are more likely to have received merit aid than are non-completers. In conjunction with the patterns found for high school percentile, SAT scores, and most recent GPA, the evidence suggests completers are more academically prepared than non-completers, or are more frequently financially awarded for their academic achievements.

- Across all institutions, compared to those who earned a degree, those who did not receive a degree and had a final semester GPA of 2.5 or higher were:
 - More likely to have taken out a federal loan (53% vs 68%);
 - More likely to have received a Pell grant (37% vs 56%), a Texas Grant (22% vs 33%), or any aid (70% vs 81%), but less likely to have received merit aid (25% vs 18%); and
 - More likely to have worked at any point while enrolled (72% vs 77%), though this pattern varies by campus.

Table 4. Financial Aid and Work Status*First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours, Fall 2008 Cohort*

Starting Institution	Received Bachelor's Degree from Any School	Count	% Took Out a Federal Loan	% Received a Pell Grant	% Received a TEXAS Grant	% Received Any G/S/T* Aid	% Received Merit Aid	% Received Any Aid	% Worked Any While in School
UTA	No	250	69%	56%	25%	74%	27%	83%	78%
	Yes	1,024	59%	50%	25%	80%	52%	86%	75%
Austin	No	474	55%	42%	29%	55%	17%	63%	59%
	Yes	5,181	49%	30%	19%	52%	13%	60%	71%
UTD	No	70	60%	27%	19%	77%	49%	84%	64%
	Yes	752	61%	27%	13%	84%	67%	91%	74%
UTEP	No	354	64%	68%	43%	81%	26%	84%	73%
	Yes	718	61%	71%	43%	87%	43%	91%	80%
UTPB	No	23	65%	57%	35%	87%	70%	96%	91%
	Yes	120	50%	41%	18%	98%	90%	98%	89%
UTSA	No	511	67%	50%	31%	63%	6%	74%	75%
	Yes	2,051	59%	40%	23%	60%	12%	73%	68%
UTT	No	42	62%	45%	29%	67%	24%	79%	86%
	Yes	275	52%	36%	21%	75%	47%	84%	81%
<i>FTFTDS Students with 90+ SCH and Final Semester GPA of 2.5+</i>									
All	No	592	68%	56%	33%	70%	18%	81%	77%
	Yes	8,815	53%	37%	22%	62%	25%	70%	72%

*G/S/T Aid refers to grants, scholarships, tuition waivers, and other forms of aid that can be applied directly toward tuition.

The average loan debt for non-completers is similar to that of completers, a particularly concerning issue given the increased risk for delinquency and default for individuals who withdraw from school without completing their programs of study.^{xii} In most cases, the difference in debt for completers and non-completers is around \$2,000 or less. At Austin, non-completers owe, on average, \$4,700 more in student loans than do completers, and at Dallas, non-completers owe, on average, \$5,700 more. (Table 5) When looking at TEXAS Grant, as well as merit grant aid, non-completers received lower total amounts over their enrollment than did completers. It is not known whether this is related to the fact that non-completers are likely enrolled for less semesters than completers and therefore don't accumulate as much grant aid, or if this is due to the fact that there are differences in the financial aid received by those who completed vs. those who did not.

Across all institutions, compared to those who earned a degree, those who did not receive a degree and had a final semester GPA of 2.5 or higher had:

- Similar median loan, Pell grant, and total grant and scholarship aid amounts;
- Lower median Texas Grant, merit aid, and total aid amounts; and
- More than double the median wages earned while enrolled. (Note that unemployment insurance (UI) wage records, the source of the earnings data in this analysis, do not include wages from work-study positions. Thus, both the completer and non-completer wages may somewhat underrepresent the actual median earnings for some students).

Table 5. Median Amount of Financial Aid Received and Wages Earned While Enrolled*First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours, Fall 2008 Cohort*

Starting Institution	Received Bachelor's Degree from Any School	Count	Median Total Loans	Median Total Pell	Median Total Texas Grant	Median Total G/S/T** Aid	Median Merit Aid	Median All Aid	Median Wages While in School
UTA	No	250	\$21,519	\$15,337	\$11,360	\$23,281	\$2,750	\$37,508	\$10,000
	Yes	1,024	\$22,042	\$15,281	\$25,240	\$23,400	\$4,700	\$42,683	\$7,913
Austin	No	474	\$33,193	\$15,281	\$11,360	\$35,948	\$5,000	\$67,413	\$4,405
	Yes	5,181	\$28,500	\$15,331	\$23,140	\$29,393	\$6,708	\$63,288	\$3,186
UTD	No	70	\$22,048	\$15,381	\$11,360	\$20,599	\$11,248	\$32,063	\$11,756
	Yes	752	\$16,368	\$14,303	\$22,510	\$37,790	\$32,245	\$48,017	\$6,699
UTEP	No	354	\$15,530	\$19,551	\$11,360	\$26,839	\$2,073	\$40,915	\$10,428
	Yes	718	\$13,406	\$21,850	\$22,689	\$38,546	\$3,574	\$48,492	\$8,289
UTPB	No	23	\$11,000	\$16,650	\$7,249	\$20,600	\$3,278	\$30,460	\$14,711
	Yes	120	\$13,010	\$8,150	\$6,097	\$16,802	\$4,500	\$26,756	\$8,007
UTSA	No	511	\$27,916	\$16,909	\$11,360	\$21,025	\$1,000	\$47,221	\$10,687
	Yes	2,051	\$26,038	\$16,450	\$19,890	\$14,076	\$2,000	\$46,059	\$5,667
UTT	No	42	\$20,821	\$17,453	\$13,055	\$19,103	\$6,910	\$38,887	\$7,423
	Yes	275	\$23,180	\$11,100	\$21,542	\$13,278	\$9,000	\$33,595	\$6,523
<i>FTFTDS Students with 90+ SCH and Final Semester GPA of 2.5+</i>									
All	No	592	\$22,757	\$15,932	\$11,360	\$24,460	\$2,500	\$43,134	\$9,474
	Yes	8,815	\$23,717	\$16,310	\$22,989	\$26,742	\$6,000	\$51,271	\$4,572

*G/S/T Aid refers to grants, scholarships, tuition waivers, and other forms of aid that can be applied directly toward tuition.

The Critical Factors: Logistic Regression Models

A comparison of those students who earned a degree vs. those who did not, but had 90 or more credit hours attempted and earned a final semester GPA of 2.5 or higher, reveal patterns very similar to those presented in the previous section (see Appendix for more detail). Nevertheless, the data suggest that, among students who attempted 90 or more semester credit hours, one of the biggest differences between those completing their degree within six years and those who did not is the fact the average GPA during the last enrolled term for completers was more than 3.2 but less than 2.2 for non-completers. To test the significance of this and other characteristics in predicting graduation status, a series of logistic regression models were developed for each institution (with the exception of Permian Basin and Tyler) which were combined to increase the sample size. The variables of interest and their sources can be found in Appendix A.

Logistic Regression Model 1 Results: All Students with 90+ SCH

Table 6. Significant Student Characteristics: Logistic Regression Results

First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours, Fall 2008 Cohort

Factor	UTA	Austin	UTD	UTEP	UTPB & UTT	UTSA
GPA (Last Regular Term)	✓	✓	✓	✓	✓	✓
% Semesters Enrolled Full-Time	✓	✓	✓	✓		✓
Received a Pell Grant	✓	✓		✓		✓
Race/Ethnicity	✓		✓	✓		
Number of Major Changes		✓			✓	✓
Gender	✓				✓	✓
Cumulative G/S/T Aid*				✓	✓	✓
Cumulative Merit Aid	✓					✓
SCH Attempted Year 1	✓					✓
Admissions Acceptance	✓					
SAT			✓			
Cumulative Wages						✓
CAP Student		N/A	N/A		✓	

✓ = significance at $p < .05$

Overall Results. When a characteristic was found to be an important predictor of graduation, the direction of that association was, with the exception of grant/scholarship/tuition waiver aid, the same across all universities for which the factor was statistically significant.

Findings for Four or More Institutions:

- Students who completed their programs within six years had a higher GPA overall during their last semester than those who did not (all UT System institutions in the study).
- Students who had a higher percentage of semesters in which they enrolled full-time were more likely to be a completer than those who enrolled part-time during some semesters (Arlington, Austin, Dallas, El Paso, and San Antonio).
- Students who had ever received a Pell Grant were less likely to graduate than those students who had not (Arlington, Austin, El Paso, and San Antonio).

Other Findings:

- The higher the number of times a major was changed, the more unlikely the student was to graduate within six years (Austin, Permian Basin/Tyler, and San Antonio).
- Males were less likely to graduate within this timeframe than were females (Arlington, Permian Basin/Tyler, and San Antonio).

- At El Paso, students who received more cumulative dollars in grant, scholarship, and tuition waiver aid were more likely to graduate than students with lower levels of this aid. At Permian Basin/Tyler and San Antonio, non-graduates had higher levels of cumulative grant, scholarship, and tuition waiver aid than did graduates.
- Individuals who received higher amounts of merit aid (exclusive of TEXAS Grants) had an increased likelihood of graduating than those with lower amounts (Arlington and San Antonio).
- There is a consistent positive association between the number of hours completed during the first year and successful completion (Arlington and San Antonio).

Logistic Regression Model 2 Results: All Students with 90+ SCH and a Final Semester GPA of 2.5+

Because final semester GPA was an important characteristic associated with graduating within six years at all of the UT System academic institutions, a second set of logistic regression models was developed, focusing on the population of students who had a final term GPA of 2.5 or higher. Of interest was, among students who demonstrated an ability to be academically successful on an above-average level, what factors distinguish those who complete their degrees in a timely manner from those who did not. Descriptive characteristics for this study population overall are called out in Tables 1-5 above. For a summary by institution, see Appendix B.

Overall Results. Similar to the first set of models, when a characteristic was found to be an important predictor of graduation, the direction of that association was, with the exception of SAT scores and grant/scholarship/tuition waiver aid, the same across all universities for which the factor was statistically significant or approaching significance.

The Students

2008 Cohort | 90+ SCH
2.5+ GPA | No Degree

- More men
- More Hispanics
- Lower SAT scores
- Lower class rank
- More part-time semesters
- More major changes
- More Pell Grant recipients (low-income)
- More loan recipients
- Less Texas Grant dollars

Table 7. Significant Student Characteristics: Logistic Regression Results

First-Time, Full-Time Undergraduate Degree-Seeking Students with 90 or More Attempted Hours and a Final Semester GPA of at least 2.5, Fall 2008 Cohort

Factor	UTA	Austin	UTD	UTEP	UTPB & UTT	UTSA
% Semesters Enrolled Full-Time	✓	✓	✓	✓		✓
Number of Major Changes		✓	✓	(✓)	✓	✓
Received a Pell Grant	✓	✓		✓		✓
SAT		(✓)	✓			✓
Cumulative G/S/T Aid*				✓		✓
Cumulative Merit Aid	✓					✓
Admissions Acceptance	(✓)	✓		(✓)		
Gender					(✓)	✓
Cumulative Wages						✓
Race/Ethnicity			(✓)	(✓)		(✓)
SCH Attempted Year 1						(✓)
CAP Student		N/A	N/A		(✓)	

✓ = significance at p<.05

(✓) = p between .051 and .10 indicating that the factor is approaching significance.

Findings for Four or More Institutions:

- Students, who had a higher percentage of semesters in which they enrolled full-time, were more likely to be a completer than those who enrolled part-time during some semesters (Arlington, Austin, Dallas, El Paso, and San Antonio).
- The higher the number of times major was changed, the less likely the student was to graduate within six years (Austin, Dallas, El Paso, Permian Basin/Tyler, and San Antonio).
- Students who had ever received a Pell Grant were less likely to graduate than those students who had not (Arlington, Austin, El Paso, and San Antonio).

Other Findings:

- At Austin, Dallas, and San Antonio, students with higher test scores were more likely to complete within six years than those with lower test scores.
- At El Paso, students who received more cumulative dollars in grant, scholarship, and tuition waiver aid were more likely to graduate than students with lower levels of this aid. However, at San Antonio, non-graduates had higher levels of cumulative grant, scholarship, and tuition waiver aid than did graduates.
- Individuals who received higher amounts of merit aid (exclusive of TEXAS Grants) had an increased likelihood of graduating than those with lower amounts (Arlington and San Antonio).
- Admission with a high school percentile within the top 10 was associated with an increased likelihood of graduating, while being admitted on a provisional basis or other non-high school

percentile-related reason was associated with a decreased likelihood of graduating (Arlington, Austin, and El Paso).

- Males were less likely to graduate within this timeframe than were females (Permian Basin/Tyler and San Antonio).

Conclusion

Not surprisingly, consistent enrollment on a full-time basis appears to be a particularly key factor associated with the likelihood of graduation for students at UT System academic institutions who have attempted 90 or more credit hours and demonstrated academic ability in their final semester. In addition, at many institutions, among this group of students, Pell recipients were less likely to complete their degree. These two findings may be connected given that finances can contribute to a student's ability to enroll full-time. Lastly, the number of times these students changed their major is a significant predictor of degree completion; the more times a student changed their major, the less likely they were to complete their degree within six years.

Together these results suggest that finances and advising may have the ability to impact whether a student, who has already attempted 90 or more credit hours and earned at least a 2.5 GPA in their final semester, completes their degree. Identifying and employing advising interventions for students who are having difficulty selecting a suitable major, and thus keeping major changes to a minimum, may make these students more likely to complete their degree. Further, if the students in financial need are identified and additional financial assistance is available to them, it may allow for them to not only continue enrollment, but in some cases they may be able to enroll full-time and increase their level of engagement on the campus, which could all help lead to degree completion.

As previously mentioned, nearly 600 students in the Fall 2008 first-time, full-time cohort failed to graduate within six years from a UT System school or another Texas institution, even though they had attempted 90 or more credit hours and had a final semester GPA high enough to suggest they were academically able to continue in college. It is possible that an attainable amount of additional financial and advising assistance would have led to successful completion, thereby salvaging the investment both the students and institutions had made into their education and future. In addition, it is likely the case that some students who did exit the UT System, but graduated from an institution outside of it, also might have been retained if the factors that caused them to leave UT were ameliorated. Early identification of those students with risk factors for dropping out after three or more successful years of college may help UT institutions identify ways to support these students through to graduation.

Appendix A
Variables of Interest in the Logistic Regression Models

Variables	Source	Notes
Race/Ethnicity	THECB, CBM001 Student Report	
Gender	THECB, CBM001 Student Report	
Coordinated Admission Program (CAP) Participant	THECB, CBM001 Student Report	Whether student participated in the Coordinated Admission Program (CAP). https://admissions.utexas.edu/enroll/cap
Number of Times Major Changed	THECB, CBM001 Student Report	Major changes were calculated at the broad two-digit level. For example, a transition from CIP 14.01 (Engineering, General) to CIP 40.08 (Physics) was considered a change in major, while a change from CIP 14.01 to CIP 14.25 (Petroleum Engineering) was not.
SCH Attempted in First Year	THECB, CBM001 Student Report	Total number of semester credit hours (SCH) attempted during the student's first year enrolled.
% Semesters Enrolled Full-Time	THECB, CBM001 Student Report	Percentage of semesters enrolled in which the student enrolled for 12 or more hours.
Admissions Acceptance Status	THECB, CBM00B	Responses combined to form new categories: 1) Accepted and ranked in top 10% of high school graduating class; 2) Accepted and ranked in 11-25% of high school graduating class; or 3) Accepted on provisional basis or on other criteria.
Received a Pell Grant	THECB, Financial Aid Database	
Cumulative Grant, Scholarship, and Tuition Waiver Aid Received	THECB, Financial Aid Database	
Cumulative Merit Aid Received	THECB, Financial Aid Database	Excludes TEXAS Grant aid.
Cumulative Earned Wages while Enrolled	Texas Workforce Commission (TWC) unemployment insurance (UI) wage records	Note that UI wage records do not include earnings from work-study programs.
GPA for last enrolled term	THECB, CBM00S Student Schedule Report	Calculated GPA for the student's last regular term of enrollment.

Appendix B
Descriptive Tables: Students with 90 or More Attempted Hours and a Final Semester GPA of 2.5
First-Time, Full-Time, Degree-Seeking Students, Fall 2008 Cohort

Table B.1 Gender and Race/Ethnicity*

Starting Institution*	Received Bachelor's Degree from Any School	Count	% Male	% Female	% African American	% Asian American	% Hispanic	% Native American	% White
UTA	No	80	56%	44%	5%	23%	28%	1%	39%
	Yes	850	44%	56%	13%	22%	21%	0%	42%
Austin	No	146	46%	54%	8%	17%	29%	0%	45%
	Yes	4,673	43%	57%	4%	20%	18%	0%	56%
UTD	No	20	75%	25%	25%	20%	10%	0%	45%
	Yes	640	57%	43%	4%	35%	8%	0%	50%
UTEP	No	126	44%	56%	2%	1%	90%	0%	4%
	Yes	649	42%	58%	2%	2%	88%	0%	6%
UTPB	No	8	63%	38%	0%	0%	75%	0%	25%
	Yes	98	44%	56%	3%	1%	40%	0%	53%
UTSA	No	199	56%	44%	12%	10%	39%	1%	35%
	Yes	1,671	45%	55%	9%	13%	34%	0%	43%
UTT	No	13	54%	46%	0%	8%	0%	0%	92%
	Yes	234	38%	62%	8%	5%	9%	0%	78%

*Students whose race/ethnicity was classified as "International" or "Unknown" were not included in this analysis. Therefore, the race/ethnicity categories do not total 100%.

** The Fall 2008 cohorts for Pan American and Brownsville are not included in this study, as these institutions closed at the end of AY 2015. UT Rio Grande Valley began enrolling students in Fall 2015.

Table B.2 Admissions Status, SAT Score, and Last GPA

Starting Institution*	Received Bachelor's Degree from Any School	Count	% Admitted Top 10	% Admitted 11-25 th	% Admitted Other	CAP Student	SAT Average	SAT Median	GPA Last Regular Term Average	GPA Last Regular Term Median
UTA	No	80	10%	29%	61%	16%	1071	1070	3.282	3.261
	Yes	850	26%	29%	45%	14%	1091	1080	3.427	3.500
Austin	No	146	60%	17%	23%	0%	1195	1195	3.217	3.184
	Yes	4,673	72%	14%	13%	0%	1251	1260	3.500	3.583
UTD	No	20	25%	0%	75%	0%	1206	1230	3.352	3.208
	Yes	640	34%	1%	65%	0%	1273	1280	3.563	3.667
UTEP	No	126	13%	18%	69%	0%	899	880	3.209	3.000
	Yes	649	26%	27%	47%	3%	955	950	3.469	3.500
UTPB	No	8	25%	38%	38%	0%	965	975	3.158	3.198
	Yes	98	30%	21%	49%	4%	1029	1005	3.509	3.500
UTSA	No	199	8%	18%	74%	22%	1020	1010	3.107	3.000
	Yes	1,671	10%	15%	74%	37%	1067	1070	3.407	3.445
UTT	No	13	8%	31%	62%	23%	875	990	3.040	2.917
	Yes	234	22%	13%	65%	9%	925	990	3.407	3.438

* The Fall 2008 cohorts for Pan American and Brownsville are not included in this study, as these institutions closed at the end of AY 2015. UT Rio Grande Valley began enrolling students in Fall 2015.

Table B.3 Financial Aid and Work Status

Starting Institution*	Received Bachelor's Degree from Any School	Count	% Took Out a Federal Loan	% Received a Pell Grant	% Received a TEXAS Grant	% Received			% Worked Any While in School
						Any G/S/T** Aid	% Received Merit Aid	% Received Any Aid	
UTA	No	80	66%	53%	23%	70%	16%	81%	78%
	Yes	850	58%	49%	25%	80%	53%	87%	77%
Austin	No	146	62%	49%	32%	62%	17%	71%	71%
	Yes	4,673	49%	29%	19%	51%	13%	59%	71%
UTD	No	20	50%	30%	10%	80%	60%	85%	55%
	Yes	640	61%	27%	13%	85%	68%	92%	75%
UTEP	No	126	73%	76%	47%	87%	29%	93%	87%
	Yes	649	62%	71%	43%	87%	42%	92%	81%
UTPB	No	8	75%	75%	38%	88%	75%	100%	100%
	Yes	98	50%	42%	20%	98%	90%	98%	90%
UTSA	No	199	73%	51%	31%	62%	5%	78%	78%
	Yes	1,671	57%	40%	23%	59%	13%	73%	68%
UTT	No	13	62%	54%	46%	77%	38%	85%	77%
	Yes	234	52%	38%	24%	76%	47%	84%	80%

*The Fall 2008 cohorts for Pan American and Brownsville are not included in this study, as these institutions closed at the end of AY 2015. UT Rio Grande Valley began enrolling students in Fall 2015.

**G/S/T Aid refers to grants, scholarships, tuition waivers, and other forms of aid that can be applied directly toward tuition.

Table B.4 Median Amount of Financial Aid Received and Wages Earned While Enrolled

Starting Institution*	Received Bachelor's Degree from Any School	Count	Median		Median Total	Median Total	Median Merit Aid	Median All Aid	Median Wages While in School
			Total Loans	Median Total Pell	Total Texas Grant	Total G/S/T** Aid			
UTA	No	80	\$17,556	\$11,000	\$18,140	\$17,691	\$1,350	\$35,367	\$10,707
	Yes	850	\$21,962	\$15,384	\$25,240	\$23,307	\$4,875	\$42,683	\$8,288
Austin	No	146	\$27,507	\$15,906	\$16,360	\$37,650	\$6,250	\$63,722	\$4,925
	Yes	4,673	\$28,108	\$15,181	\$23,140	\$28,007	\$7,250	\$62,774	\$3,159
UTD	No	20	\$25,950	\$8,447	\$11,360	\$7,628	\$5,343	\$35,275	\$18,358
	Yes	640	\$16,368	\$15,381	\$22,671	\$39,411	\$33,190	\$49,201	\$6,656
UTEP	No	126	\$15,393	\$19,114	\$11,360	\$25,671	\$1,605	\$39,947	\$9,831
	Yes	649	\$13,838	\$21,881	\$23,140	\$38,738	\$3,600	\$48,838	\$8,261
UTPB	No	8	\$12,192	\$13,662	\$4,180	\$22,549	\$3,750	\$28,871	\$22,530
	Yes	98	\$12,724	\$12,181	\$6,164	\$17,178	\$5,000	\$27,067	\$9,550
UTSA	No	199	\$27,069	\$15,731	\$11,360	\$21,003	\$1,000	\$42,681	\$12,351
	Yes	1,671	\$25,604	\$16,450	\$21,360	\$13,681	\$2,000	\$46,605	\$5,559
UTT	No	13	\$16,090	\$20,719	\$16,445	\$24,514	\$6,320	\$40,832	\$8,261
	Yes	234	\$23,184	\$11,331	\$21,690	\$13,248	\$9,000	\$35,726	\$6,667

*The Fall 2008 cohorts for Pan American and Brownsville are not included in this study, as these institutions closed at the end of AY 2015. UT Rio Grande Valley began enrolling students in Fall 2015.

**G/S/T Aid refers to grants, scholarships, tuition waivers, and other forms of aid that can be applied directly toward tuition.

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