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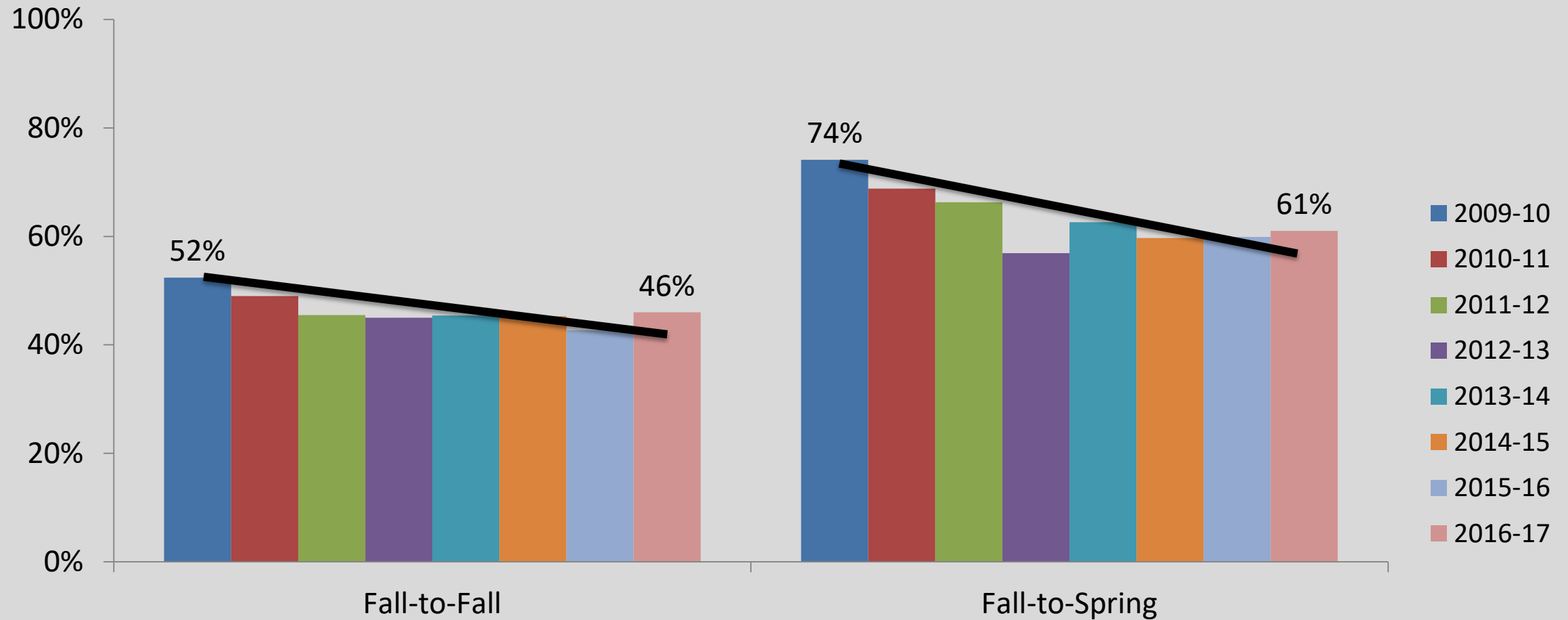
A Deep Dive into Student Departure

Brazosport College *The College of Choice[®]*

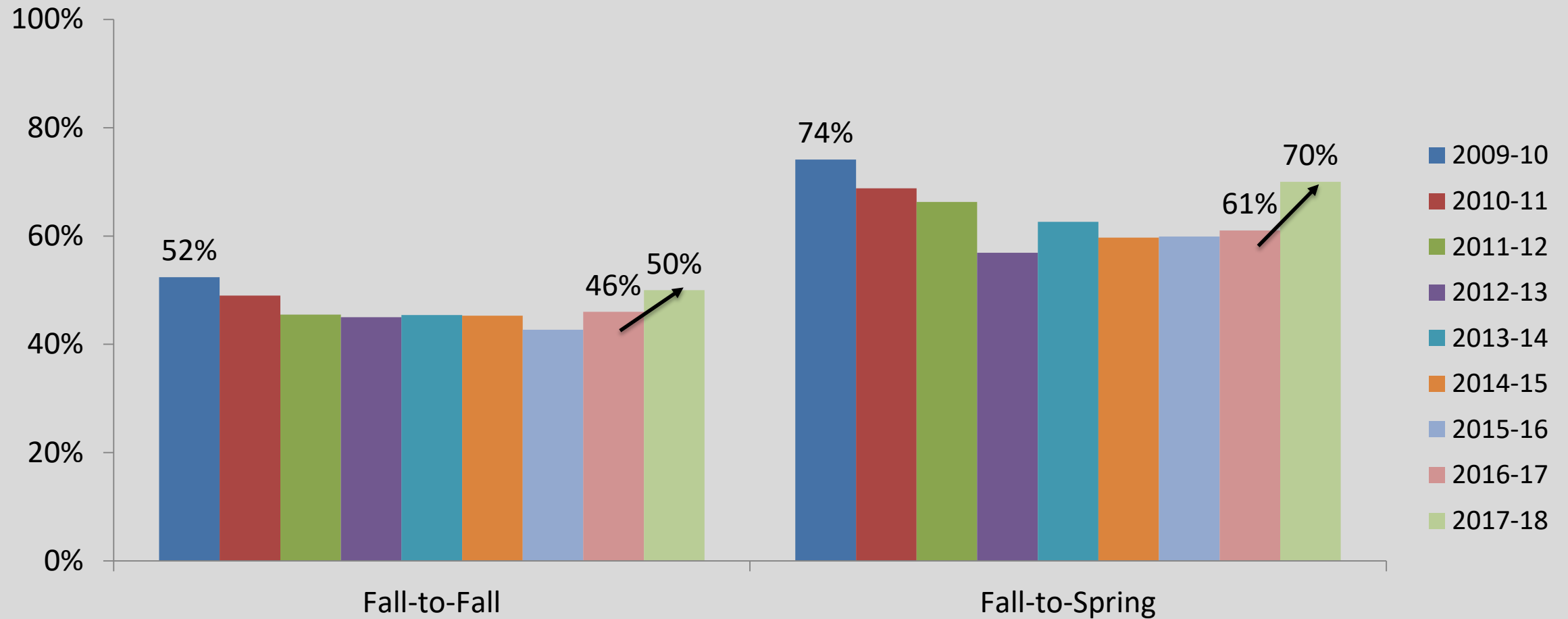


- Aspen Top 10 finalist
- 2 BAT programs
- 4,300~ fall students
- 80% part-time students
- 25% Dual Credit
- 3 yr FT Grad Rate 41%
- 4 yr FT Grad Rate 48%
- 80% working within one year after award
- 17.9% graduate with debt
- Data Warehouse: ZogoTech

Declining First Time Student Retention



Declining Student Retention Reversed



Research Questions

1. What are the characteristics of departing students?
 2. Which student holds are negatively impacting retention?
 3. How many non-returners were close to graduating?
 4. What is the impact of dropping students for non-payment?
-

Methodology

Data from ZogoTech analytics data warehouse

56 binary factors calculated

Analysis focused on:

GPA

Completion Rates

Student Holds

Financial Aid

Enrollment Intensity

Degree Type

Developmental Enrollment

Gender

Ethnicity

Residency Status

Start of Term Retention Status

Analytical Tool: Decision Tree

Loading Data into R

```
library(RODBC)
dbhandle <- odbcDriverConnect('driver={SQL Server};server=hunter.brazosport.edu;
database=Estudias;trusted_connection=true')

fall2017 <- sqlQuery(dbhandle, "select * from dbo.TAIR_Fall_2017_Frozen")
fall2018 <- sqlQuery(dbhandle, "select * from dbo.TAIR_Fall_2018_Frozen")
```

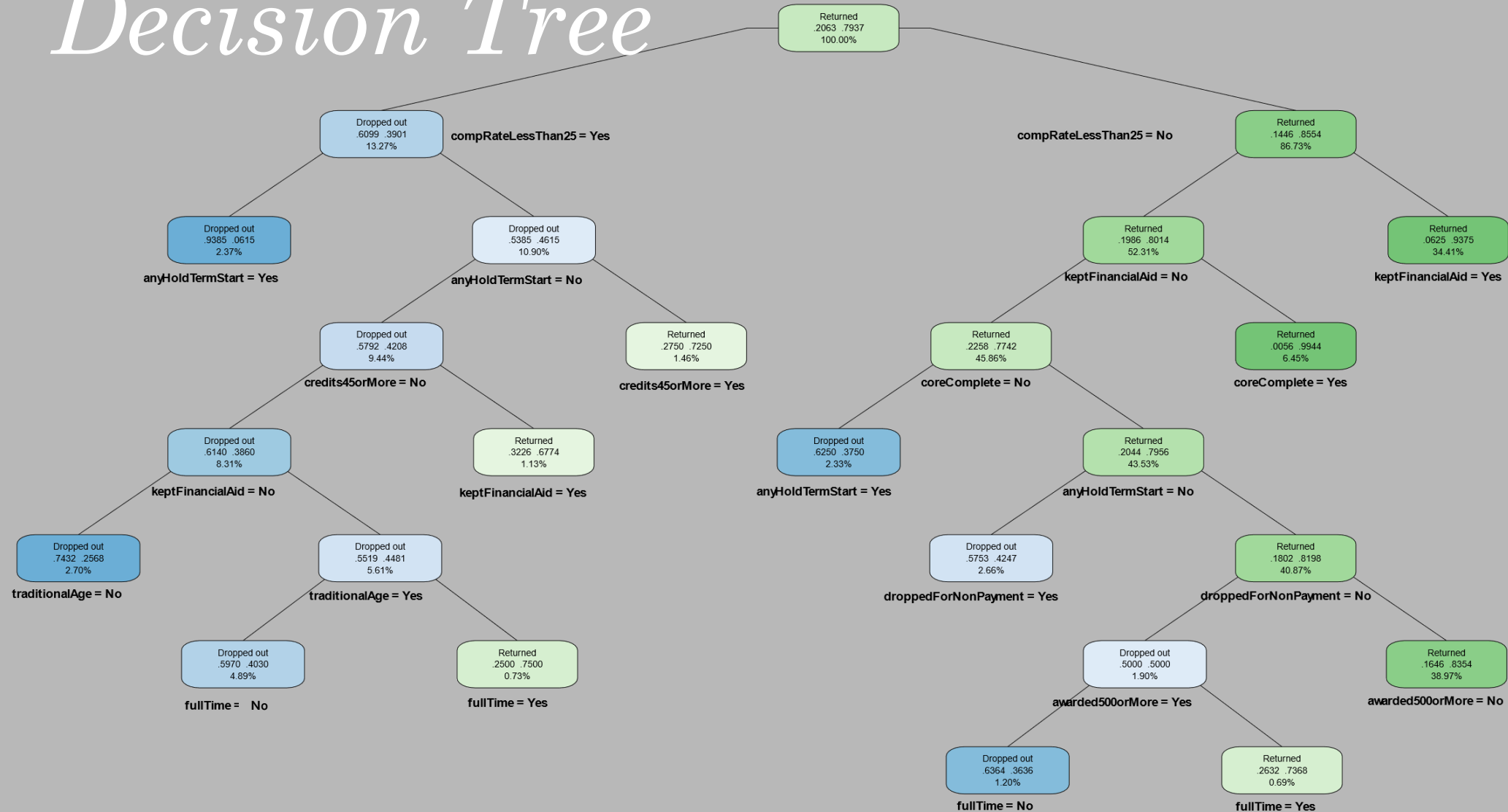
Analyze student characteristics with Rpart

```
fall2017tree <- rpart(Returned ~ droppedForNonPayment + developmentalStudent + awarded5000orMore  
+ gpaLessThan1Point5 + gpaBetween1Point5And2 + withdrewAllCourses + failedAllClasses + NCCERCert + firstTermStudent  
+ incidentalStudents + previousTermGPAlessThan2 + institutionalCredits50Plus + hasPell + hasLoans + hasTPG + hasVetGrant  
+ hasTexasGrant + dependentWaiver + keptFinancialAid + credits45orMore + degreeBAT+ degreeCERT + degreeASSOC  
+ fallDevEd + everDevEd + fallDevEdMath + everDevEdMath + coreComplete + multipleMajors + compRateLessThan50  
+ compRateLessThan25 + traditionalAge + lessThanPartTime + fullTime + partTime + isFemale + isMinority + coreCourseWF  
+ inDistrict + continuingInMajor + continuingNewToMajor + newToMajor + newStudentNewToMajor + returningToMajor  
+ economicallyDisadvantaged + onlyFandWgrades + anyHoldTermStart + anyHold30DaysIntoReg + anyHold45DaysIntoReg  
+ holdFinancialAidTermStart + holdFinancialAid45DaysIntoReg + holdFinancialAid30DaysIntoReg + holdFinancialAidRegStart  
+ holdVaccinationRegStart + holdVaccination30DaysIntoReg + holdVaccination45DaysIntoReg + holdVaccinationTermStart  
+ holdBusinessOfficeTermStart + holdBusinessOffice45DaysIntoReg + holdBusinessOffice30DaysIntoReg  
+ holdBusinessOfficeRegStart + holdTranscriptsTermStart + holdTranscripts45DaysIntoReg  
+ holdTranscripts30DaysIntoReg + holdTranscriptsRegStart  
, method="class", data=fall2017, control = rpart.control(cp = 0.003, minsplit = 50)  
, parms = list(split = "information"))
```

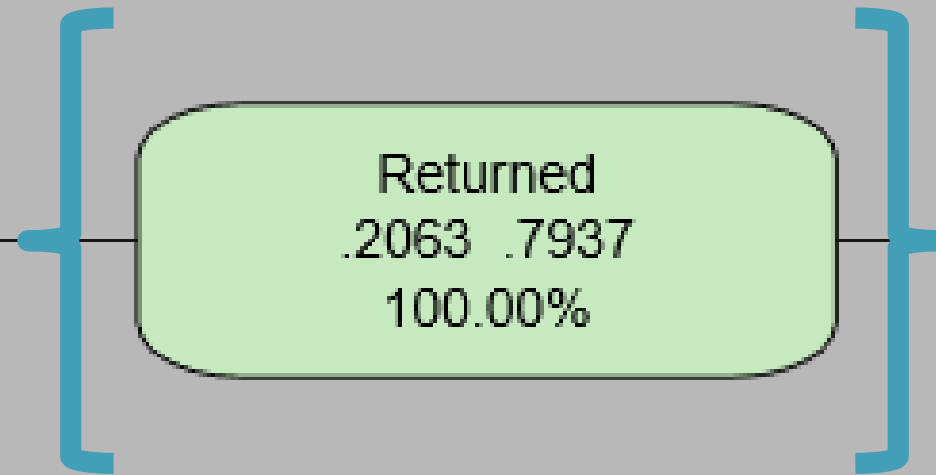
```
library(rpart)  
library(rpart.plot)
```

```
rpart.plot(fall2017tree,type=4,extra=104,digits=4,fallen.leaves=FALSE)
```

Decision Tree



Deep Dive into Student Departure



Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
2743	2964	566 20.63%	770 25.98%	5.35%

Deep Dive into Student Departure

compRateLessThan25 = No

Returned
.1446 .8554
86.73%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
2379 86.73%	2535 85.53%	344 14.46%	461 18.19%	3.01%

Returned
.1986 .8014
52.31%

Returned
.1446 .8554
86.73%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
944 34.41%	778 26.25%	59 6.25%	49 6.30%	0.05%

Returned
.0625 .9375
34.41%

keptFinancialAid = Yes

compRateLessThan25 = No

Returned
.1446 .8554
86.73%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
1435 52.31%	1757 59.28%	285 19.86%	412 23.45%	3.59%

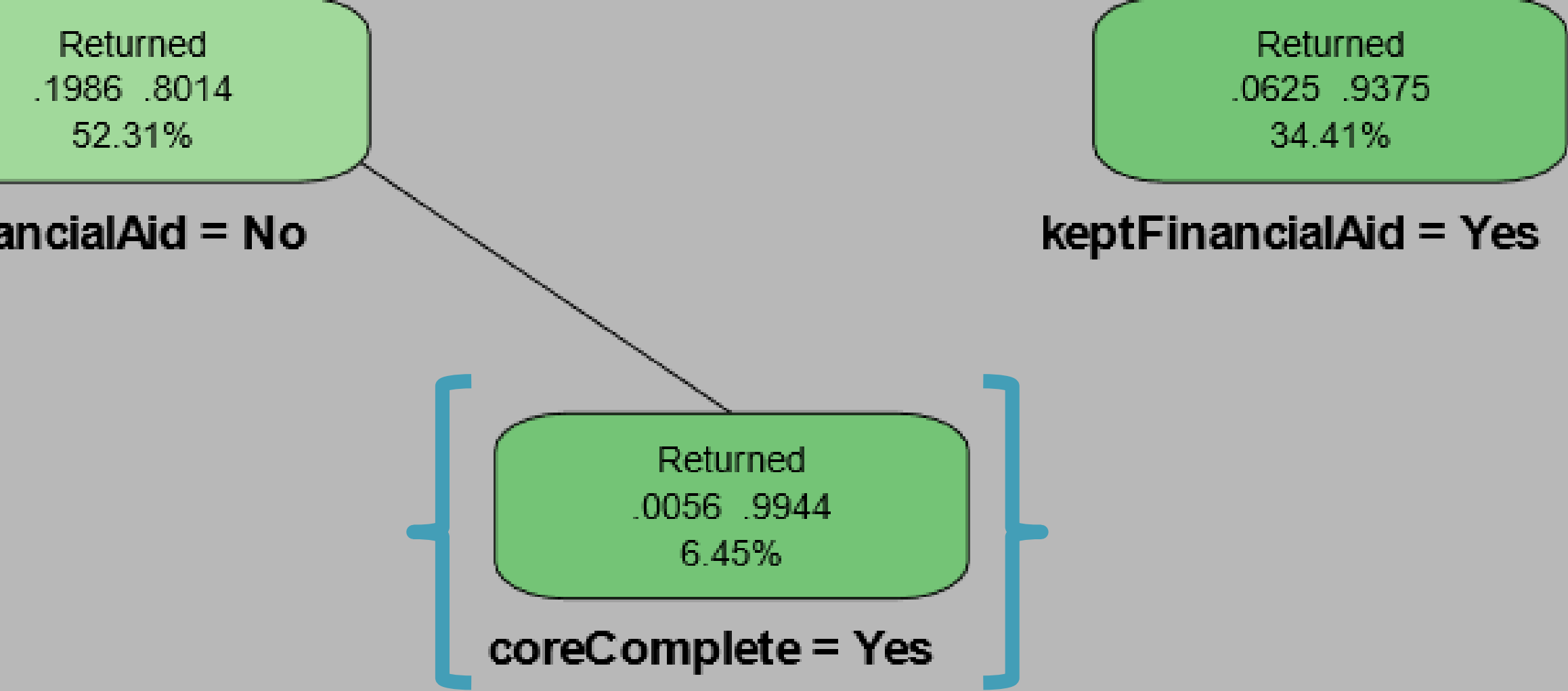
Returned
.1986 .8014
52.31%

keptFinancialAid = No

Returned
.0625
34.4

keptFinancial

Returned
.0056 .9944
6.45%



Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
177 6.45%	104 3.51%	1 0.56%	0 0.00%	-0.56%

Returned
.2044 .7956
43.53%

Returned
.1986 .8014
52.31%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
1258 45.86%	1653 55.77%	284 22.58%	412 24.92%	2.35%

Returned
.2258 .7742
45.86%

coreComplete = No

Returned
.0056 .9944
6.45%

coreComplete

Returned
.2044 .7956

Returned
.2258 .7742
45.86%

anyHoldTermStart = No

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
64 2.33%	61 2.06%	40 62.50%	53 86.89%	24.39%

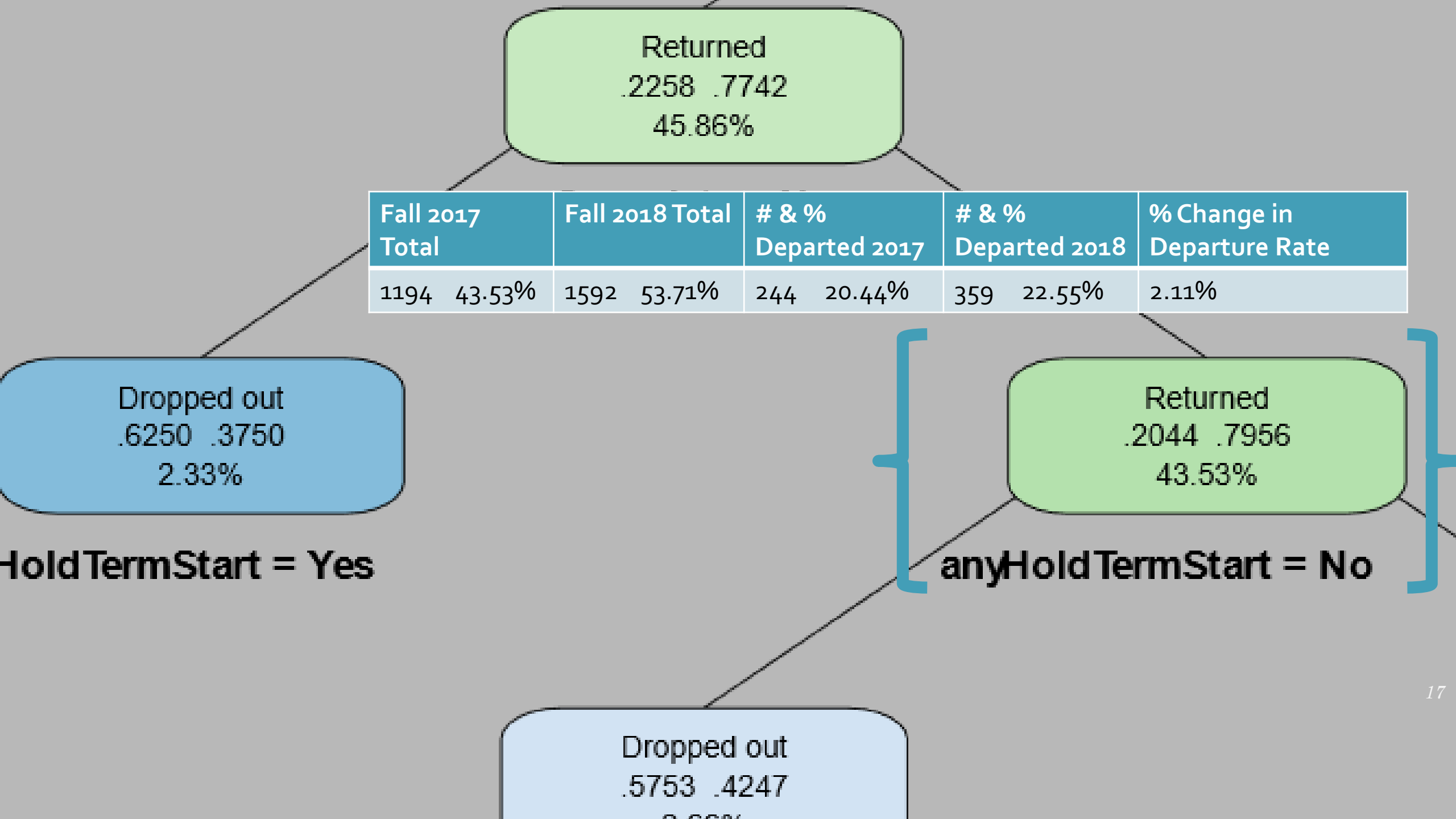
Dropped out
.6250 .3750
2.33%

anyHoldTermStart = Yes

Returned
.2044 .7956
43.53%

anyHoldTermStart = Yes

Dropped out
.5753 .4247
2.66%



Returned
.2258 .7742
45.86%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
1194 43.53%	1592 53.71%	244 20.44%	359 22.55%	2.11%

Dropped out
.6250 .3750
2.33%

HoldTermStart = Yes

Returned
.2044 .7956
43.53%

anyHoldTermStart = No

Dropped out
.5753 .4247
2.66%

Dropped out
.6250 .3750
2.33%

Returned
.2044 .7956
43.53%

HoldTermStart =

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017		# & % Departed 2018		% Change in Departure Rate
73	2.66%	54	1.82%	42	57.53%	33	61.11%	3.58%

Dropped out
.5753 .4247
2.66%

droppedForNonPayment = Yes

dro

Returned
.2044 .7956
43.53%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
1122 40.87%	1538 51.89%	202 18.02%	326 21.20%	3.18%

Dropped out
.5753 .4247
2.66%

Payment = Yes

Returned
.1802 .8198
40.87%

droppedForNonPayment = No

Dropped out
.5000 .5000

The percent of student body went from 38.97% to 47.1%, and because of the size of this node, this group accounts for 37.7% of the departure rate.

Returned
.1802 .8198
40.87%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
1069 38.97%	1396 47.10%	176 16.46%	290 20.77%	4.31%

Dropped out
5000 .5000
1.90%

rMore = Yes

Returned
.1646 .8354
38.97%

awarded500orMore = No

Returned

out
247

ent = Yes

Returned
.1802 .8198
40.87%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
52 1.90%	142 4.79%	26 50.00%	36 25.35%	-24.65%

Dropped out
.5000 .5000
1.90%

awarded500orMore = Yes

Retu
.1646
38.9

awarded500or

ed out
0000

Returned
0000 7000

Dropped out
.5000 .5000
1.90%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
33	1.20%	80	2.70%	21 63.64%	28 35.00%	-28.64%

Dropped out
.6364 .3636
1.20%

fullTime = No

Returned
.2632 .7368
0.69%

fullTime = Yes

Dropped out
.5000 .5000
1.90%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
19	0.69%	62	2.09%	5 26.32%	8 12.90%	-13.41%

Dropped out
.6364 .3636
1.20%

fullTime = No

Returned
.2632 .7368
0.69%

fullTime = Yes

Dropped out
.6099 .3901
13.27%

compRateLessThan25 = Yes

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
364 13.27%	429 14.47%	222 60.99%	309 72.03%	11.04%

Dropped out
.9385 .0615
2.37%

TermStart = Yes

14.47% of students account for 40.3% of the total departures. 309 dropouts out of 770 total = 40.3%.

Dropped out
.5385 .4615
10.90%

anyHoldTermStart = No

compRateLessThan

Dropped out
.6099 .3901
13.27%

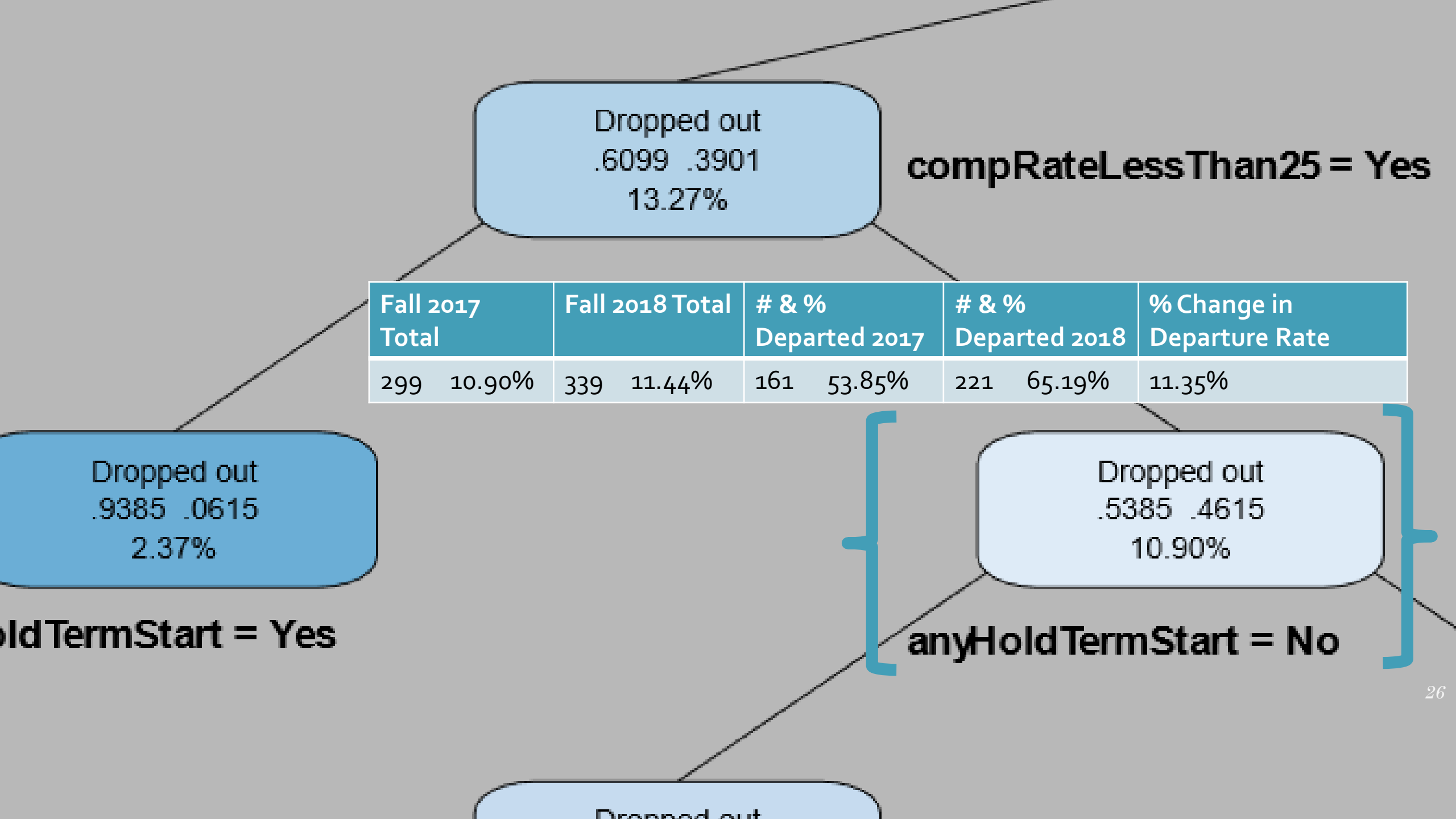
Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
65 2.37%	90 3.04%	61 93.85%	88 97.78%	3.93%

Dropped out
.9385 .0615
2.37%

anyHoldTermStart = Yes

Dropped out
.5385 .4615
10.90%

anyHoldTermStart =



Dropped out
.6099 .3901
13.27%

compRateLessThan25 = Yes

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
299 10.90%	339 11.44%	161 53.85%	221 65.19%	11.35%

Dropped out
.9385 .0615
2.37%

oldTermStart = Yes

Dropped out
.5385 .4615
10.90%

anyHoldTermStart = No

Dropped out

Dropped out
.5385 .4615
10.90%

anyHoldTermStart = No

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
40 1.46%	40 1.35%	11 27.50%	19 47.50%	20.00%

Dropped out
.5792 .4208
9.44%

its45orMore = No

Returned
.2750 .7250
1.46%

credits45orMore = Yes

Returned

Dropped out
.5385 .4615
10.90%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017		# & % Departed 2018		% Change in Departure Rate
259	9.44%	299	10.09%	150	57.92%	202	67.56%	9.64%

Dropped out
.5792 .4208
9.44%

credits45orMore = No

Returned
.2750 .7250
1.46%

credits45orMore =

Returned

Dropped out
.5792 .4208
9.44%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
31	1.13%	33	1.11%	10 32.26%	11 33.33%	1.07%

Dropped out
.6140 .3860
8.31%

FinancialAid = No

Returned
.3226 .6774
1.13%

keptFinancialAid = Yes

Dropped out

Dropped out
.5792 .4208
9.44%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
228 8.31%	266 8.97%	140 61.40%	191 71.80%	10.40%

Dropped out
.6140 .3860
8.31%

keptFinancialAid = No

Returned
.3226 .6774
1.13%

keptFinancialAid = Yes

Dropped out

Dropped out
.6140 .3860
8.31%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
74	2.70%	88	2.97%	55 74.32%	72 81.85%	7.49%

Dropped out
.7432 .2568
2.70%

traditionalAge = No

Dropped out
.5519 .4481
5.61%

traditionalAge = Yes

Dropped out
5970 4030

Dropped out
.6140 .3860
8.31%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017		# & % Departed 2018		% Change in Departure Rate
154	5.61%	178	6.01%	85	55.19%	119	66.85%	11.66%

Dropped out
.7432 .2568
2.70%

traditionalAge = No

Dropped out
.5519 .4481
5.61%

traditionalAge = Yes

Dropped out
5970 4030

Dropped out
.5519 .4481
5.61%

Fall 2017 Total		Fall 2018 Total		# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
134	4.89%	160	5.40%	80 59.70%	108 67.50%	7.80%

Dropped out
.5970 .4030
4.89%

fullTime = No

Returned
.2500 .7500
0.73%

fullTime = Yes

Dropped out
.5519 .4481
5.61%

Fall 2017 Total	Fall 2018 Total	# & % Departed 2017	# & % Departed 2018	% Change in Departure Rate
20 0.73%	18 0.61%	5 25.00%	11 61.11%	36.11%

Dropped out
.5970 .4030
4.89%

fullTime = No

Returned
.2500 .7500
0.73%

fullTime = Yes

Departure Rates by Financial Aid

Fall Financial Aid	Fall 2017		Fall 2018	
	nbr	dropRate	nbr	dropRate
Had Fall Financial Aid	1,137	14.5%	1,045	15.1%
No Financial Aid	1,606	25.0%	1,919	31.9%

Departure Rates by Financial Aid

Fall Financial Aid	Fall 2017		Fall 2018	
	nbr	dropRate	nbr	dropRate
Had Fall Financial Aid	1,137	14.5%	1,045	15.1%
No Financial Aid	1,606	25.0%	1,919	31.9%

Kept/Lost Aid	Fall 2017		Fall 2018	
	nbr	dropRate	nbr	dropRate
Lost Financial Aid	154	57.1%	213	38.0%
Kept Financial Aid	983	7.8%	832	9.3%

Departure Rates by Enrollment Intensity

Enrollment Intensity	Fall 2017		Fall 2018	
	nbr	dropRate	nbr	dropRate
Full-Time	640	9.2%	634	11.7%
Part-Time	1418	19.4%	1,518	22.3%
Less Than Part-Time	685	33.9%	812	44.1%

Departure Rates by Degree

		Fall 2017		Fall 2018	
Degree Sought	nbr	dropRate	nbr	dropRate	
BAT	130	5.40%	117	3.40%	
Associate	2,139	18.50%	2,282	23.10%	
Certificate	474	34.40%	565	42.10%	

2. Which student holds are negatively impacting retention?

	Reg Start				Reg 30 Days				Reg 45 Days				Term Start			
	2017		2018		2017		2018		2017		2018		2017		2018	
	nbr	%	nbr	%	nbr	%	nbr	%	nbr	%	nbr	%	nbr	%	nbr	%
Business Office	155	49.7%	193	52.8%	113	59.3%	106	71.7%	79	70.9%	93	75.3%	59	88.1%	71	97.2%
Financial Aid	78	14.1%	38	23.7%	56	14.3%	20	40.0%	36	22.2%	15	53.3%	14	42.9%	7	85.7%
ACEit	131	23.7%	300	32.7%	57	43.9%	148	53.4%	45	48.9%	49	67.3%	27	81.5%	35	94.3%
Transcripts	95	28.4%	97	44.3%	74	36.5%	71	56.3%	64	42.2%	58	65.5%	43	58.1%	43	81.4%
Vaccination	69	42.0%	53	50.9%	56	51.8%	49	51.0%	45	55.6%	41	61.0%	31	80.6%	26	96.2%
Any Hold	476	31.1%	604	37.9%	318	41.8%	340	54.7%	239	49.0%	232	65.1%	154	71.4%	160	91.3%

3. How many non-returners were close to graduating?

Cumulative Completed Credits	Fall 2017		Fall 2018	
	nbr	dropRate	nbr	dropRate
0-15	921	33.7%	964	43.0%
16-30	558	23.7%	637	26.5%
31-45	453	11.7%	509	17.7%
46-60	345	10.7%	320	15.6%
61-75	197	9.6%	246	11.8%
76-90	120	7.5%	128	5.5%
90 or more	149	4.0%	160	6.3%

4. What is the impact of dropping students for non-payment?

Dropped for non-payment	Fall 2017		Fall 2018	
	nbr	% of Cohort	nbr	% of Cohort
Dropped Out	61	2.22%	49	1.65%
Returned	56	2.04%	31	1.05%
Total	117	4.26%	80	2.70%



Summary Findings

The institutional Fall to Spring departure rate increased by 5.35% in 2018. This is explained by an increase in the number of students in at-risk student groups and compounded by an increase in the departure rate within these groups.

More students completed less than 25% of their Fall courses. This group of 14.5% of the student population departed 72% of the time. The decision tree picked this factor as the first split because this group accounts for 40% of lost students.

There was a 6% decrease in the number of students with financial aid and a 7% increase in those who lost financial aid. The decision tree found that students who had and kept financial aid is one of the best predictors of retention.

During follow-up analysis we found increases in the number of students who were pursuing certificates and attending less than part-time. These groups departed 42% and 44% of the time, 10% and 8% departure rate increases over 2017.



Thank You for Attending!

Cindy Ullrich

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Don't forget to submit a session evaluation located in the TAIR app.
Scroll down to the "Forms" section where there is a link to the evaluation.

