

# The Examination of Factors Impacting Hispanic Students' College Success

Xiaohong Li

Amanda Clark

Sam Houston State University

# Outline

- Background and Research Questions
  - Why Hispanic Students
- Measuring Student Success
  - Key Measures: Retention and Graduation
- A profile of Hispanic Students at Sam Houston State University (SHSU)
- Research Method and Data Source
- Interesting Findings
- Conclusion and Recommendations

# Background and Research Questions

- The Facts:
  - Hispanic population in the United States is the fastest growing ethnic group in the nation

Population by Hispanic or Latino Origin and by Race for the United States: 2000 and 2010						
Hispanic or Latino Origin and Race	2000		2010		Change (2000-2010)	
	Number	% of Total Population	Number	% of Total Population	Number	percent
Hispanic or Latino Origin and Race	35,305,818	12.5%	50,477,594	16.3%	15,171,776	<b>43.0%</b>
Not Hispanic or Latino	246,116,088	87.5%	258,267,944	83.7%	12,151,856	4.9%
Total	281,421,906	100.0%	308,745,538	100.0%	27,323,632	9.7%

Data Source: 2010 Census Briefs Issued march 2011

- The ability of Hispanic students to attend a postsecondary institution will largely impact the competitiveness of the nation.
- Evidence shows that obtaining a postsecondary education leads to lower unemployment and less public assistance.

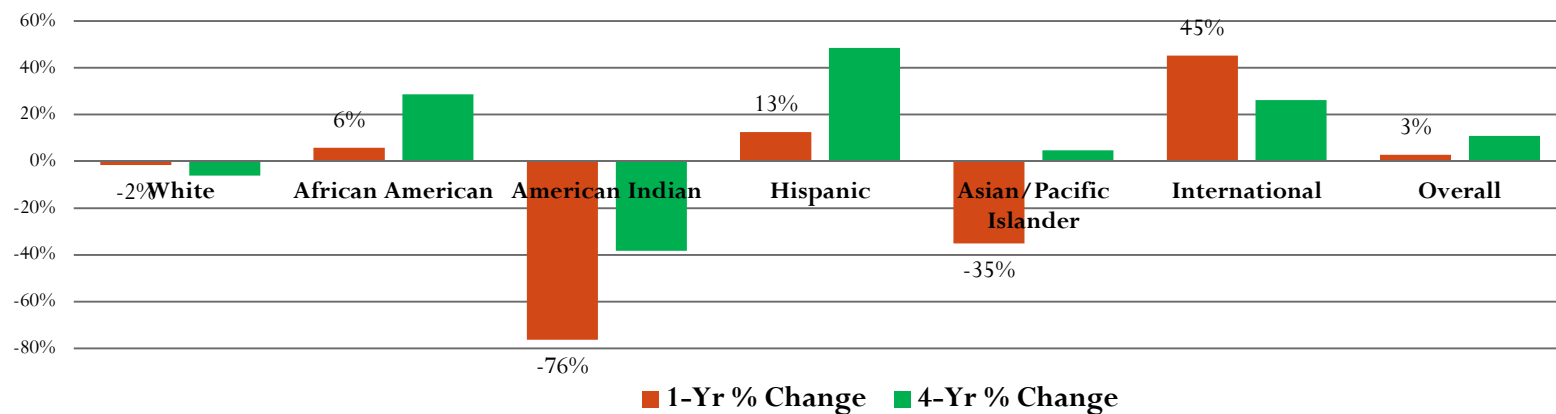
# Background and Research Questions

- Hispanic student enrollment is increasing at SHSU

Total Enrollment - SHSU

Ethnicity	Fall 2008	Fall 2009	Fall 2010	Fall 2011	Fall 2012
White	11584	11332	11084	11052	10879
African American	2373	2525	2694	2886	3052
American Indian	102	103	198	266	63
<b>Hispanic</b>	<b>2100</b>	<b>2297</b>	<b>2558</b>	<b>2772</b>	<b>3119</b>
Asian/Pacific Islander	235	269	286	379	246
International	267	269	288	232	337
Multi-Races					309
Unknown					456
Overall	16661	16795	17108	17587	18461

1-Yr % & 4-Yr % Changes in Enrollment by Ethnicity (F08-F12)



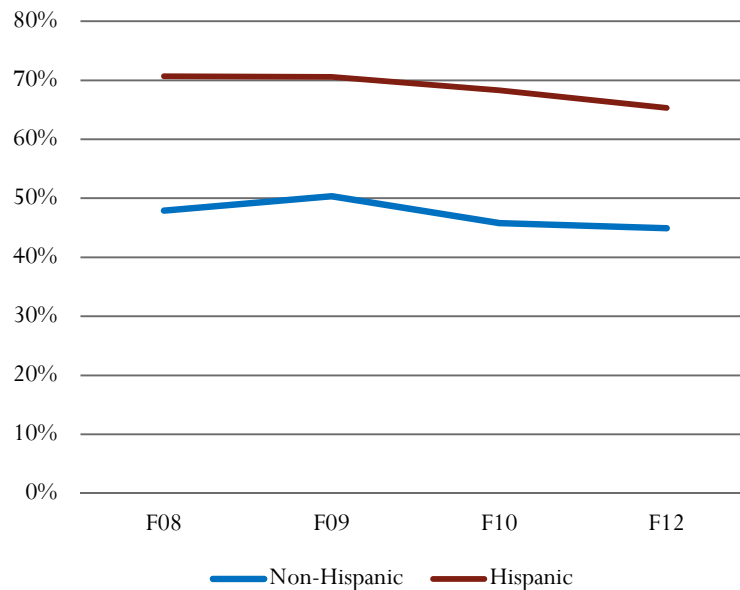
# Measuring Student Success

- Student Success is defined in many ways depending on the type of the institution and institutions' mission and goals. Components include:
  - Completing a degree
  - Effective integration with school community
- Key Concerns
  - Retention Rate
  - Graduation Rate: six-year graduation rate. Not evaluated in this study.
- Other Definitions are less specific and may reflect the philosophy of the institution
- The goals of SHSU are:
  - Recruit and retain qualified students
  - Promote and support diversity
  - Provide equitable opportunities for underrepresented groups

# A profile of Hispanic Students at Sam Houston State University

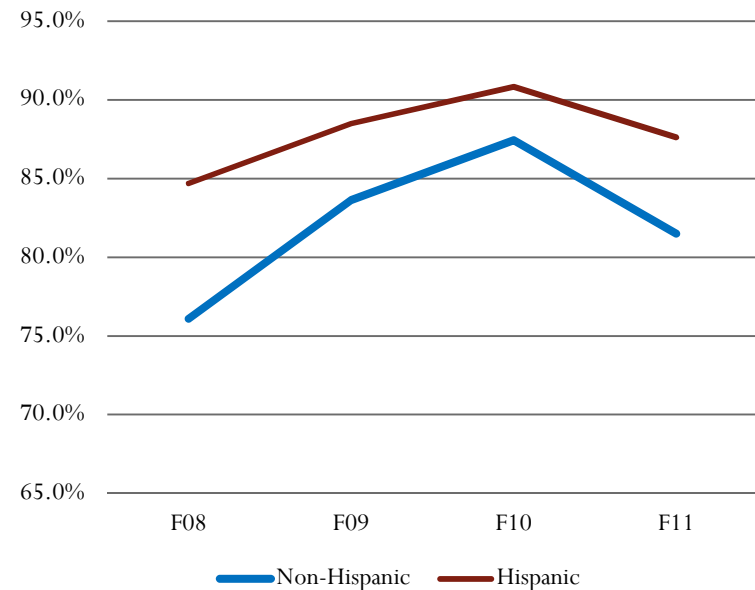
- **First Generation**

**Percentage of First Generation Students**



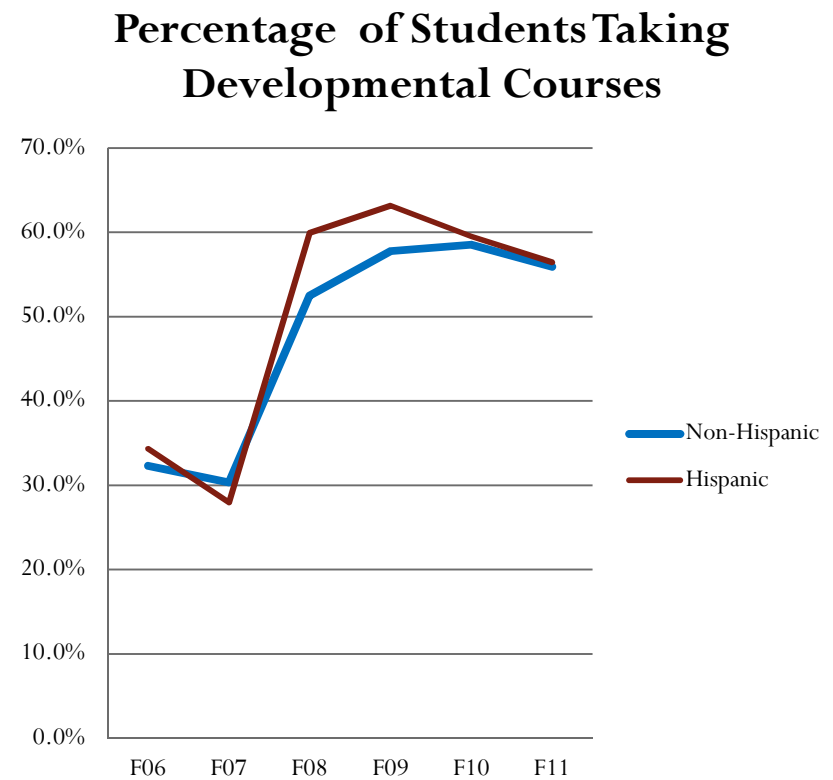
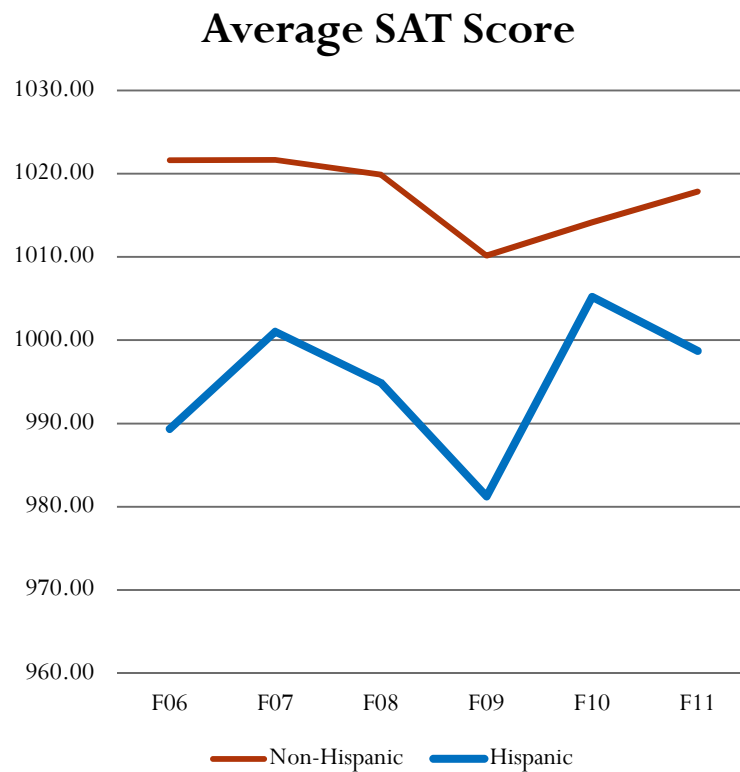
- **Low Income**

**Percentage of Students Receiving Financial Aid**



# A profile of Hispanic Students at Sam Houston State University

## College Readiness



# Strategies for Improving Hispanic Student Success

- Contributions to Student Retention
  - First-year programs
  - Social and family support
  - Academic advising
  - Learning support
- Two Main Factors
  - Financial aid and academic support



# Programs Improve Student Success at SHSU

- First-Year Experience: Learning Community(LC)
  - Freshman Learning Community(FLC): a group of freshmen taking classes together
  - Bearkat Learning Community(BLC)
    - live together and take classes together
    - Participate in activities such as field trips and service projects
- Sam 136 (UNIV 1301)
  - A three-hour, elective freshman seminar
  - Help make the transition to college life
    - Provide academic and personal survival tools
    - General orientation to the resources and services available at SHSU

# Research Method and Definitions

- Method
  - Descriptive Analysis
  - Binary (or binomial) logistic regression is a non-linear form of regression which is used when the dependent variable is dichotomous (binary) and the independent variables are of any type (continuous, categorical, binary).
  - Backwards stepwise logistic regression methods allow the researcher to enter all variables at once. Backwards stepwise logistic regression methods determine automatically which variables to drop from the model.

# Research Method and Definitions(continues)

- **Coefficient (B)** - The coefficient (B)'s estimations indicates the amount of increase (or decrease, if sign is negative) in the predicted log odds of retention by an increase or decrease in the variable's values, holding all others constant. For example, if the log odds of being retained change one unit, then the independent variable changes in the same direction.
- **Odds Ratio =  $\text{Exp}(\mathbf{B})$**  - Generally speaking, the odds ratio is a measure of the strength of association between a predictor and the response of interest. It can be used to compare whether the probability of a certain event is the same for two groups.
  - The value of the odds ratio is from 0 to infinity.
    - If the odds ratio is one, there is no association, which implies that the event is equally likely in both groups.
    - An odds ratio greater than one implies that the event is more likely in the first group.
    - An odds ratio less than one implies that the event is less likely in the first group.

# Research Method and Definitions(continues)

- Data Source:

- Internal Data files from Institutional Effectiveness (IE) at SHSU
- Longitudinal studies conducted by IE at SHSU

- Data Processing

- Population: Fall 2006 –Fall 2011 First Time Freshmen
- Student Enrollment File: Fall 2007– Fall 2012
- Calculate one-year retention rate in SPSS

- Research Assumptions

- Observations should be independent and the independent variables should be linearly related to the logit of the dependent. In general, Logistic Regression has less stringent requirements. It does not require normally distributed variables and does not assume homoscedasticity.

# Terms and Definitions

- Dependent Variable Definition
  - One-Year Retention
    - Continued enrollment in the fall term following the first fall term in which the First Time Freshmen (FTF) was enrolled.
      - Students are considered retained even if they have not earned enough credits to progress to sophomore classification
      - Retained Fall to Fall term, even if they are not retained in spring term
- Independent Variables
  - Key Performance Indicator and Factors Impacting Student Success
    - Entry At-Risk, Taking Remedial Courses, Institutional Fit, Social Integration, Finances/Support
  - Programs to improve student success: LC, BLC, FLC and Sam136

## Terms and Definitions<sub>(continued)</sub>

- **Entry At-Risk:** *Whether a student was originally admitted with one or more College Readiness Deficiencies as determined by the following:*
  - **High School Quartile:** *High school rank recoded into quartiles-if available.*
  - **Remedial:** *Students who take a developmental course in their first semester.*
  - **PREP:** *Personal Review of Educational Potential. Admission status for students who do not meet minimum requirements for admission, but graduated from high school on the Recommended or Distinguished Plan.*
  - **Receive Aid:** *Students are receiving any type of need-based financial aid*
  - *Non traditional first time freshmen.*

# Variables Coding in the Model

## Categorical Variables Codings

		Frequency	Parameter coding			
			(1)	(2)	(3)	(4)
HS_Q	.00	47	1.000	0.000	0.000	0.000
	HS Quartile 1st	663	0.000	1.000	0.000	0.000
	HS Quartile 2nd	509	0.000	0.000	1.000	0.000
	HS Quartile 3rd	153	0.000	0.000	0.000	1.000
	HS Quartile 4th	26	0.000	0.000	0.000	0.000
Received Aid		576	1.000	0.000		
	N	25	0.000	1.000		
	Y	797	0.000	0.000		
SAM136	0	1093	1.000			
	1	305	0.000			
FL	0	1332	1.000			
	1	66	0.000			
LC	0	1250	1.000			
	1	148	0.000			
PREP	0	1174	1.000			
	1	224	0.000			
At Risk	0	674	1.000			
	1	724	0.000			
Remedial	0	722	1.000			
	1	676	0.000			
BKLC	0	1315	1.000			
	1	83	0.000			

# Interesting Findings

Variables in the Equation							
		B	S.E.	Wald	df	Sig.	Exp(B)
Step 5 <sup>a</sup>	SAM136(1)	-0.495	0.208	5.692	1	0.017	0.609
	Remedial(1)	0.23	0.126	3.313	1	0.069	1.258
	BKLC(1)	-0.478	0.288	2.75	1	0.097	0.62
	HS_Q			11.126	4	0.025	
	HS_Q(1)	0.201	0.51	0.155	1	0.693	1.223
	HS_Q(2)	0.711	0.417	2.901	1	0.089	2.035
	HS_Q(3)	0.386	0.416	0.858	1	0.354	1.471
	HS_Q(4)	0.136	0.441	0.095	1	0.759	1.145
	PREP(1)	0.403	0.234	2.963	1	0.085	1.497
	Constant	0.875	0.515	2.888	1	0.089	2.399

a. Variable(s) entered on step 1: FLC, LC, SAM136 ReceivedAid, remedial, At Risk, BKLC, HS\_Q, Prep.



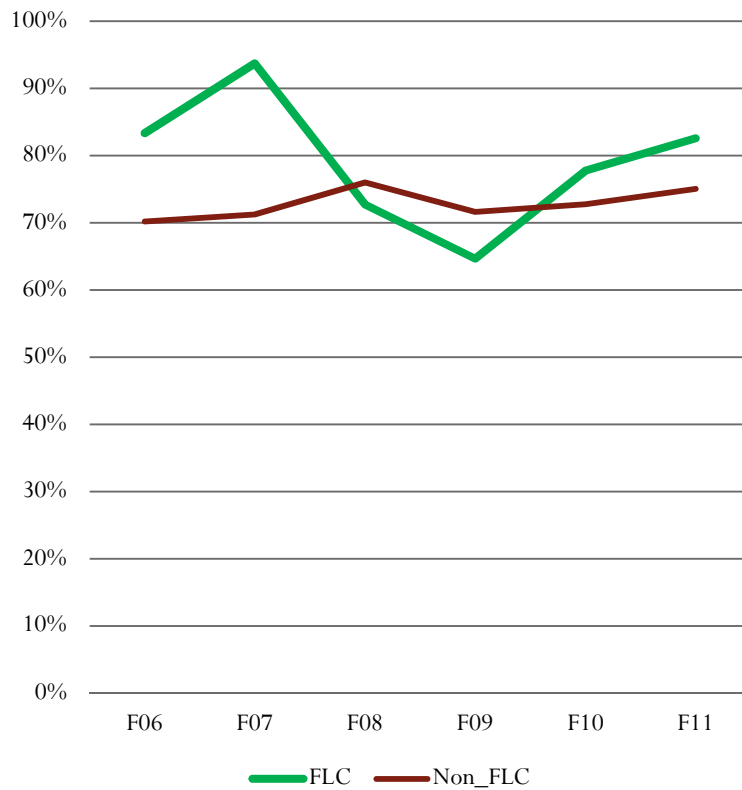
# Interpretations of Coefficients, Odds Ratios

## Interpretations:

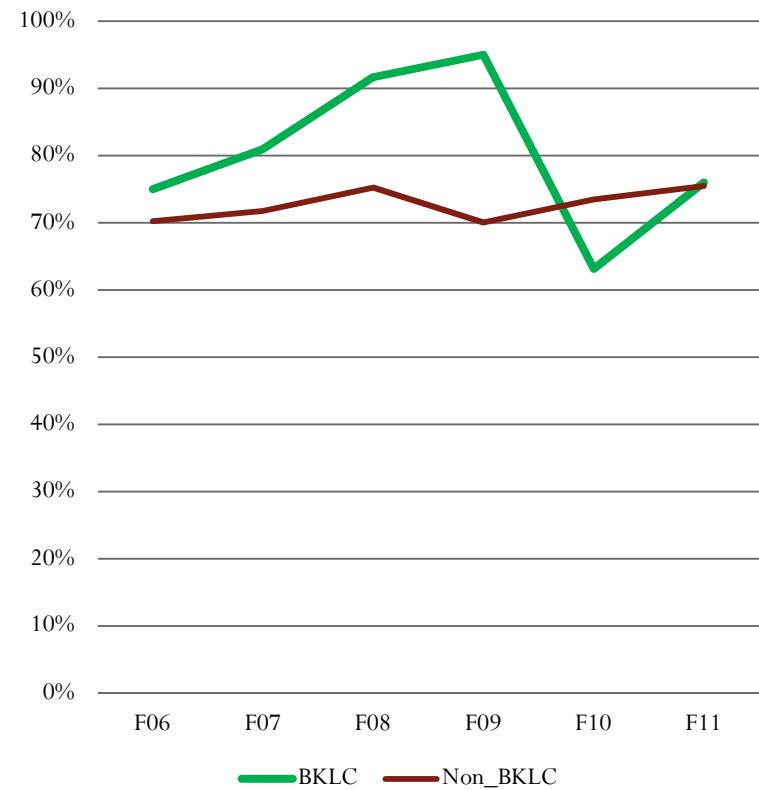
- The most important factor is *not taking Sam136*, which has a statistically significantly negative impact on retention, the  $p$  value is 0.017 with an odds ratio= 0.609.
- The odds of FTF Hispanic students Not Taking Sam 136 being retained is 0.609 times for Hispanic FTF Taking Sam 136.
- Students admitted not under PREP is the second strongest factor impacting FTF Hispanic students retained to the next year. The  $p$  value is 0.085 with odds ratio=1.479.
- The odds of FTF Hispanic student not admitted under PREP being retained is 1.479 times greater than students admitted with PREP.
- BLC is another factor having a statistically significant impact on FTF Hispanic retention.

# Findings – Learning Communities

## FTF Hispanic Retention Rate FLC vs. Non FLC

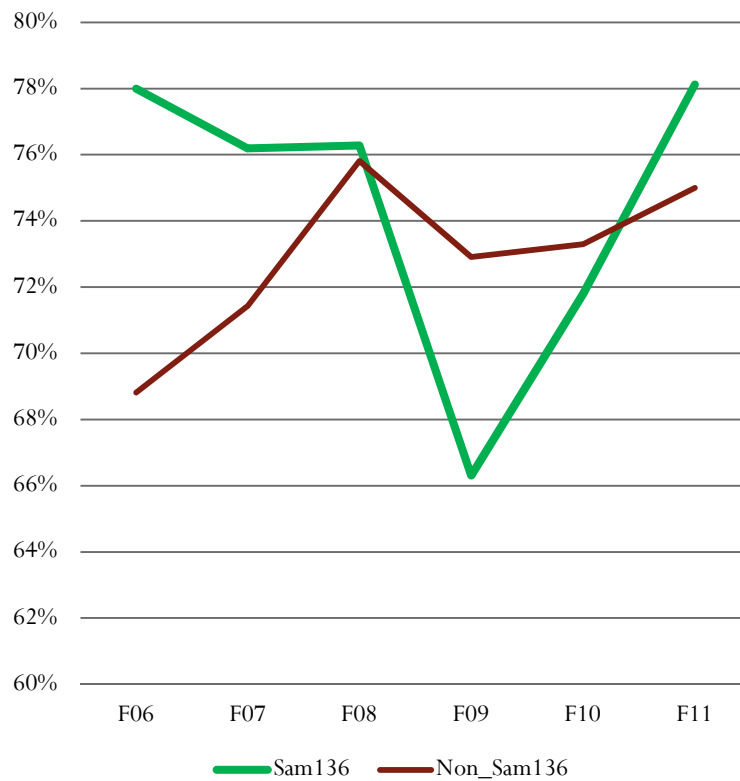


## FTF Hispanic Retention Rate BLC vs. Non BLC

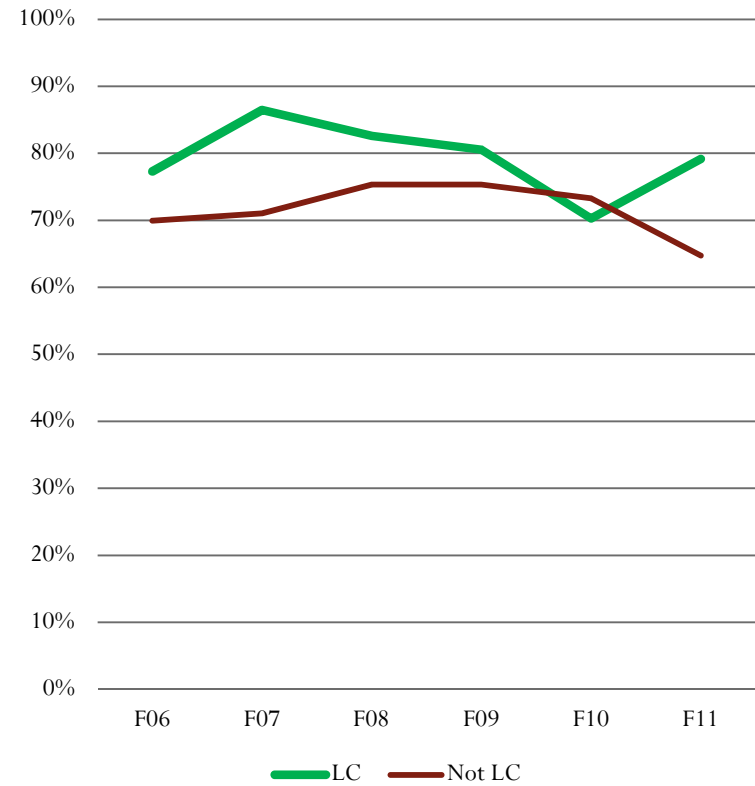


# FTF Hispanic Student Retention Rates Comparison

## FTF Hispanic Retention Rate Sam 136 vs. Non Sam136



## FTF Hispanic Retention Rate LC vs. Non LC



# Conclusion and Recommendations

- Successful Retention Programs: Bearkat Learning Community and Taking Sam 136 Course
  - Emphasis on academic integration
  - Ensure adequate student services are available for Hispanic students and that the students are aware of the available support program. Specific emphasis on first generation students.
  - Encourage Hispanic students to participate in a wide variety of school activities
- Targeted Leadership program for Hispanic students

# Limitations and Recommendations

- Limitations of the Study
  - Comparing the FTF population to the FTF Hispanic population; the Hispanic students participating in these support programs are much smaller than the full population.
  - The programs are newer (i.e. since 2006) and there may not be sufficient data for the creation of a comprehensive longitudinal study. It is difficult to get complete graduation data until more years of data are collected.
- Further Study
  - Graduation rates comparisons
  - Financial aid analysis: Would a targeted financial support program for Hispanic students make an impact? In what ways would the students be impacted? What types of aid?

# Questions and Comments?



Thank you for coming!

Xiaohong Li- [xxl001@shsu.edu](mailto:xxl001@shsu.edu)  
Amanda Clark- [akc015@shsu.edu](mailto:akc015@shsu.edu)  
Sam Houston State University  
Huntsville, TX