

Comparative Study of the Persistence and Academic  
Success of Florida Community College Student-Athletes  
and Non-Athlete Students: 2004 to 2007

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## PURPOSE OF STUDY

The purpose of this study was to explore academic success rates for first-time full-time (FTFT) enrolled students that were awarded athletically-related financial aid, while enrolled at a community college in the state of Florida.

# RESEARCH PROBLEM

- 1) Low degree completion and four-year transfer rates of community college students:
  - 20-25 % of all full-time first-time (FTFT) enrolled students will earn a degree or certificate after three years.
  - 15-20% will transfer to a four-year institution within three years.
  
- 2) High attrition and low graduation rates of student-athletes at four-year institutions.
  - Across all sports and institutional types, student-athletes lag behind their peers in degree attainment rates and time to degree.
  
- 3) Empirical studies have not extensively considered athletic participation in their analysis when exploring academic success and retention rates for community college students.

# RESEARCH QUESTIONS

The following research questions guide the focus of this empirical study:

1. To what extent do academic performance (i.e., GPA, credit hours enrolled, credit hours earned), and degree attainment and four-year transfer rates differ between full-time first-time (FTFT) enrolled student-athletes and their peers at the community college;
2. What effect do individual, pre-college and institutional characteristics have on the academic performance, and degree attainment and four-year transfer rates of student-athletes, compared to their non-athlete peers

# THEORETICAL FRAMEWORK

## Human Capital Theory (Gary S. Becker, 1964; 1993)

- Increased education or training increase future income and other individual assets that can be used to foster upward social and economic mobility.
- Becker (1964; 1993) focused primarily on the economic return increased education yields over the lifetime of individuals, compared to those that choose not to invest in education.

The accumulation of human capital is realized at the community college through:

- Job-training;
- Certificate or associate degree attainment;
- Academic preparation for continued study at a four-year institution.

# DEFINITIONS OF ACADEMIC SUCCESS

Examples of community college student success provided in the literature:

- Community college GPA
- Job placement/wage earnings
- Professional certificate and associate's degree attainment
- Four-year transfer
- Four-year degree attainment

Definitions and interpretations of academic success applied in this analysis:

- Associates degree/professional certificate<sup>1</sup>
- Four-year transfer<sup>1</sup>
- Associates degree/professional certificate and four-year transfer<sup>1</sup>

<sup>1</sup> Measured in three and one-half years (11 academic semesters)

# **BARRIERS TO DEGREE ATTAINMENT AND FOUR-YEAR TRANSFER:**

## **Institutional Characteristics**

- Institutions with large FTE enrollment sizes;
- Institutions where more than 50 percent of the general student population is composed of female and/or part-time students.
- Large percentage of part-time faculty members

## **Individual Background Characteristics**

- High school dropout or GED recipient;
- Single-parent status (dependent child or spouse living within their household);
- Full-time employed;
- Student's socio-economic background (Low SES);
- Part-time enrollment status;
- Delayed entry to college.

# DATA SOURCES AND SAMPLES

## Data Sources

- Florida Department of Education's PK-20 Education Data Warehouse (EDW)
- Community College and Technical Center Management Information System
- Integrated Postsecondary Educational Data Systems (IPEDS)

## Data Samples

### Student sample

- Student-Athletes\* (568)
- Non-athlete students (14,913)

### Institutional sample

- Florida public community colleges (20)
  - Sample limited to institutions in state that sponsor athletic programs.

\*The terms "student-athlete" and "athlete," as used in this study, refer only to those students who received athletically-related financial aid while attending a community college in the state of Florida.



# DEPENDENT VARIABLES

## 1. **Model 1: Earned degree**

- Associates of Arts
- Associates of Science
- Associate of Science Certificate
- Vocational Certificate

## 2. **Model 2: Four-year transfer**

- Accomplished if any sum of credits are completed at the community college prior to enrollment in a public college or university in the Florida State University System.

## 3. **Model 3: Earned degree \* four-year transfer**

# INDEPENDENT VARIABLES

## Individual characteristics

### **Intercollegiate athletics**

- Student-athlete status

### **Individual characteristics**

- Gender
- Race
- Socio-economic status (Pell Grant recipient)

### **Pre-college characteristics**

- Time to college
- Math
- Reading
- Writing

### **Academic experiences**

- GPA
- Course credit hours earned per semester

## Institutional Characteristics

### **Geographic location**

- Suburban
- Urban
- Rural

### **FTE Enrollment size**

- Small (500-1,999)
- Medium (2,000-4,999)
- Large (5,000-9,999)
- Very Large (10,000 or more)

# RESEARCH DESIGN AND ANALYTIC METHODS

## Design:

- Longitudinal (Summer 2004 – Fall 2007)
- Between groups (Athletes / Non-athletes)

## Preliminary analyses

- Descriptive statistics
- T-tests
- Analysis of variance (ANOVA)

## Advanced analysis

- Multivariate logistic regression
  - 24 predictor variables/interaction terms
  - Blocked entry method
  - Results discussed as odds-ratios (i.e., degree attainment, four-year transfer)

# RESEARCH DESIGN AND ANALYTIC METHODS

## Preliminary analyses

### Descriptive statistics:

- **Institutional sample** (e.g., students within each institution, geographic locale, FTE enrollment size, degrees conferred)
- **Student sample** (e.g., race, gender, SES, level of college readiness, degrees earned, four-year transfer completed)
- **Bivariate analysis** (e.g., distribution of students by institutional and individual characteristics)

### T-tests (GPA and credit hours earned):

- Non-athletes *vs.* Athletes
- Non-athletes (SOC) *vs.* Athletes (SOC)
- Non-athletes (Female) *vs.* Athletes (Female)
- Non-athletes (Low SES) *vs.* Athletes (Low SES)

○

### Analysis of variance [ANOVA] (GPA):

- Geographic locale
- FTE enrollment size

# RESEARCH DESIGN AND ANALYTIC METHODS

## Advanced analysis – General Linear Model with a binary dependent variable

<b>Independent Variables</b>	<b>Block 1</b>	<b>Block 2</b>	<b>Block 3</b>	<b>Block 4</b>	<b>Block 5</b>
Student-athlete status	X	X	X	X	X
Individual background characteristics	X	X	X	X	X
Pre-college characteristics		X	X	X	X
Academic experiences			X	X	X
Institutional characteristics				X	X
Interaction terms					X

## LIMITATIONS

- Secondary data: this study and its analyses relied solely on data collected by institutions and reported to the state of Florida.
- Limited institutional sample: The institutional sample was limited to 20 of 25 institutions in the state that sponsored an athletic programs during the 2004-2005 academic year.
- Student-athlete indicator: Data were not collected for ALL student-athletes in the state as the only indicator of a student's participation in athletics was the award of athletically-related financial aid.

## DELIMITATIONS

- Generalizability: Does not claim to provide insight into or represent a national sample of the academic behaviors of all student-athletes at the community college.
- Impact of financial-aid: Does not discuss or explore the impact of financial aid when examining the persistence and retention of students.
- Four-year athletic participation: Does not provide any insight into the number of students who were recruited, provided with athletically-related financial aid, or invited to participate in intercollegiate athletics at four-year institutions.

# DESCRIPTIVE ANALYSIS: RACE AND GENDER

## Student-Athletes

<u>Gender</u>	<u>Count (%)</u>
Male	248 (43.9)
Female	317 (56.1)

<u>Race</u>	<u>Count (%)</u>
White	345 (61.7)
Students of Color <sup>1</sup>	214 (38.3)

## Non-Athlete Students

<u>Gender</u>	<u>Count (%)</u>
Male	5,805 (39.0)
Female	9,807 (61.0)

<u>Race</u>	<u>Count (%)</u>
White	8,646 (59.2)
Students of color <sup>1</sup>	5,956 (40.8)

<sup>1</sup>Students of color represents Black, Hispanic, Asian, and American Indian ethnic/racial backgrounds



## DESCRIPTIVE ANALYSIS: SOCIAL-ECONOMIC STATUS AND COLLEGE READINESS

### Student-Athletes

<u>Socio-economic status<sup>1</sup></u>	<u>Count(%)</u>
Low SES	207 (36.4)
High SES	361 (63.6)

<u>College readiness <sup>2</sup></u>	<u>Count(%)</u>
Math	306 (53.9)
Reading	294 (51.8)
Writing	349 (61.4)

### Non-Athlete Student

<u>Socio-economic status<sup>1</sup></u>	<u>Count(%)</u>
Low SES	10,307 (69.1)
High	4,606 (30.9)

<u>College ready<sup>2</sup></u>	<u>Count(%)</u>
Math	6,574 (44.1)
Reading	9,284 (62.3)
Writing	10,943 (73.4)

- 1). Low SES status is a proxy for Pell Grant award. <sup>2</sup>College ready is based on SAT scores  
 2). College readiness is proxy variable to indicate remediation is needed in Math, Reading, and/or Writing, based on SAT scores.

## T-TEST: GPA AND CREDIT HOURS EARNED

<b>GPA</b>	<b>Mean Difference (t)</b>
Non-athletes vs. <b>Athletes</b>	-.2972 (-8.08)
Non-athletes (SOC) vs. <b>Athletes</b> (SOC)	-.4114 (-7.48)
Non-athletes (Female) vs. <b>Athletes</b> (Female)	-.3253 (-7.23)
Non-athletes (High SES) vs. <b>Athletes</b> (High SES)	-.2760 (-4.71)
* Mean difference is significant at the at the $p \leq .05$ significance level.	

<b>Credit Hours Earned</b>	<b>Mean Difference (t)</b>
Non-athletes vs. <b>Athletes</b>	-3.90 (-24.49)
Non-athletes (SOC) vs. <b>Athletes</b> (SOC)	-4.21582 (-17.27)
Non-athletes (High SES) vs. <b>Athletes</b> (High SES)	-3.09020 (-14.98)
Non-athletes (Low SES) vs. <b>Athletes</b> (Low SES)	-3.92119 (-15.52)
* Mean difference is significant at the at the $p \leq .05$ significance level.	

# REGRESSION RESULTS: MODEL 1 - EARNED DEGREE

## Individual Factors

### Student-athletes

-2.140 (.118) student-athlete\*\*

### All students

-0.125 (.883) Low SES (high SES)\*

-0.503 (.605) Delayed entry\*\*\*

-0.404 (.667) Not math ready\*\*\*

-0.174 (.840) Not writing ready\*\*\*

+0.984 (2.675) GPA\*\*\*

+0.249 (1.28) Credits Earned\*\*\*

*Note:* Beta coefficient (Odds-ratio)

## Institutional Factors

### Student-athletes

-0.754 (.469) Rural x student-athlete\*

### All students

-0.142 (.867) Urban (Suburban)\*\*

-0.252 (.777) Large [5,000 - 9,999  
FTE] (Very Large)\*\*\*

\*p<.05, \*\*p<.01, \*\*\*p<.001

# REGRESSION RESULTS: MODEL 2 - FOUR-YEAR TRANSFER

## Individual Factors

### Student-athletes

No significant differences

### All students

-0.675 (.509) Low SES (high SES)\*\*\*

-0.576 (.562) Delayed entry\*\*

-0.732 (.481) Not math ready\*\*\*

-1.491 (.225) Not writing ready\*\*

+0.600 (1.822) Female (Male)\*\*\*

+1.251 (3.493) GPA\*\*\*

+0.232 (1.262) Hours Earned\*\*\*

*Note:* Beta coefficient (Odds-ratio)

## Institutional Factors

### Student-athletes

No significant differences

### All students

-0.465 (.628) Large [5,000 - 9,999 FTE]  
(Very Large)\*\*\*

\*p< .05, \*\*p<.01, \*\*\*p<.001

# REGRESSION RESULTS: MODEL 3 - EARNED DEGREE\* FOUR YEAR TRANSFER

## **Individual Factors**

### **Student-athletes**

No significant differences

### **All students**

-0.554 (.574) Low SES (high SES)\*\*\*

-0.967 (.380) Delayed entry\*\*\*

-0.481 (.618) Not math ready\*

-1.818 (.162) Not writing ready\*

+0.630 (1.877) Female (Male)\*\*\*

+1.810 (6.112) GPA\*\*\*

+0.269 (1.309) Hours Earned\*\*\*

*Note:* Beta coefficient (Odds-ratio)

## **Institutional Factors**

### **Student-athletes**

No significant differences

### **All students**

-0.588 (.555) Large [5,000 - 9,999 FTE]  
(Very Large)\*

\*p< .05, \*\*p<.01, \*\*\*p<.001

# DISCUSSION

- Student-athletes exhibit success trends similar to those seen for athletes at four-year institutions.
- Student-athletes from small community colleges are at greatest risk for not completing a degree.
- Student SES affects degree completion and transfer behavior, but is not shown to have a significant effect on outcomes for student-athletes.
- Academic readiness is a significant factor for all community college students.
- Students at large institutions [5,000 - 9,999 FTE] are less likely to be academically successful.
- Academic performance (i.e., GPA and course credits earned) increases the probability of degree completion and transfer.

# IMPLICATIONS FOR PRACTICE

## Community College Administration

- Understand the importance of this special group of students to their student community
- Focus on lower SES students' needs
- Importance of academic readiness

## Student-Athlete Support Services Office

- Develop programs explicitly focused on degree attainment and four-year transfer
- Develop an awareness for academically at-risk student-athletes

## Educational Researchers

- Additional attention to community college student-athletes (institutional, state and state level).
- Focus on the academic and individual characteristics of student-athletes.

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**Thank You!**

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