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### Persistence to Graduation: Is It the Money, High School Preparation, or First Semester College Matriculation?

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# PERSISTENCE TO GRADUATION: IS IT THE MONEY, HIGH SCHOOL PREPARATION, OR FIRST YEAR COLLEGE MATRICULATION?

Presented by

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# INTRODUCTION

- There were **17.04 million** undergraduate students attending degree-granting postsecondary institutions in the United States in fall 2015 (U.S. Department of Education, 2017a).
- St. John, Paulsen, and Carter (2005) found that African Americans “were highly sensitive to finances in their college choices and in their persistence decisions” (p. 564).
- The ability to pay for college presents a dilemma for this nation. There are entire populations that lag behind in college access and degree attainment.
- It has long been regarded through previous research that academic performance in high school and scores on college entrance examinations are indicators of student persistence in college (Adelman, 2006, Astin, 1993; Astin & Oseguera, 2005; Tinto, 1993).

# STATEMENT OF THE PROBLEM

- Approximately **59.4%** of first-time full-time undergraduate students who began seeking a bachelor's degree at a four-year institution in fall 2009 completed that degree *within six years* (U.S. Department of Education, 2017b).
- Dismal graduation rates affect institutional selectivity, impact an institution's ability to generate revenue, and more importantly, put the institution in a position of jeopardizing the very mission it promised to uphold.
- More fundamentally, completing a college degree *increases individuals' earnings potential, positively impacts the well-being of their family, increases their chances of health and happiness*, and *reduces the likelihood* that they will *live in poverty and depend on public assistance*.

## PURPOSE OF THE STUDY

The purpose of this selected part of the quantitative research study was to examine the relationship between persistence to graduation within six years and five variables:

- Frequency of Financial Aid Awards per Semester
- High School GPA
- ACT Composite Scores
- SAT Combined Scores
- First-Year First-Semester GPA

# SELECTED RESEARCH QUESTIONS

- RQ1:** Is there a significant relationship between persistence to graduation within six years and the total number of occurrences of financial aid awarded?
- RQ2:** Is there a significant relationship between persistence to graduation within six years and high school GPA?
- RQ3:** Is there a significant relationship between persistence to graduation within six years and the American College Testing (ACT) Composite scores?
- RQ4:** Is there a significant relationship between persistence to graduation within six years and the Scholastic Aptitude Testing (SAT) Combined scores?
- RQ5:** Is there a significant relationship between persistence to graduation within six years and the first-year first-semester GPA?

## SIGNIFICANCE OF THE STUDY

- The Student Right-to-Know Act of 1990 required that all postsecondary institutions receiving Title IV funds report the percentage of students who complete their program within 150% of the normal time for completion (within six years for students pursuing a bachelor's degree).
- A college educated society would benefit from more tax revenue, promote greater civic and social engagement, attain higher rates of voter participation and volunteerism, and be less likely to depend on public assistance.
- A college degree can provide a sense of personal achievement, increase the chances of higher job satisfaction, enhance family well-being, become a pathway to advanced degrees, improve earnings potential, and reduce the chances of living in poverty.

# SELECTED LITERATURE REVIEW

- DesJardins, Ahlburg, and McCall (2002) found that financial aid not only influenced an individual's decision to attend college; but, the types of financial aid while in college had an effect on persistence to degree completion, as well.
- In *The Condition of College & Career Readiness 2015-African American Students* (2016), ACT and the United Negro College Fund (UNCF) recommended the following high school courses as part of the core curriculum:
  - Four years of English;
  - Three years of mathematics, including rigorous courses in Algebra I, Geometry, and Algebra II;
  - Three years of science, including rigorous courses in Biology, Chemistry, and Physics;
  - Three years of social studies. (p. 18)



- *The Condition of College & Career Readiness 2015-African American Students* (2016) report contends that a disturbing gap continues to exist between African Americans who meet the ACT College Readiness Benchmarks compared to their white and Asian peers. ACT classifies benchmark subjects as English, reading, mathematics, and science. In 2015, 12% of African Americans met three or more benchmarks compared to 50% whites and 59% Asians. The report showed a similar trend for the prior five years.
- According to Deng and Kobrin (2007), the SAT Reasoning Test “measures developed verbal and mathematical reasoning abilities related to successful performance in college” (p. 1).
- Hosch (2008) examined the association between first-semester GPA and retention and graduation rates by conducting an institutional case study at a public comprehensive university in fall 2007 with an enrollment of 12,000 undergraduate and graduate students. Hosch’s most compelling finding was that first-semester GPA was the student characteristic most related to graduation within six years; even more so than gender, race, or ethnicity.

# THEORETICAL FRAMEWORK

- Kurt Lewin once stated, “There is nothing so practical as a good theory” (Lewin, 1951, p. 169). The researchers constructed a theoretical framework based on the review of relevant research literature to examine persistence to graduation within six years.
- The framework identifies factors related to student persistence that increases the chances of a student staying in college until degree completion.
- The theoretical framework is based on past and current research literature and was applied to the quantitative sample in this study to determine whether, and to what extent, the independent variables—financial aid awarded, high school GPA, ACT Composite scores, SAT Combined scores, and first-year first-semester GPA—are related to the dependent variable, persistence to graduation within six years (see Figure 1).

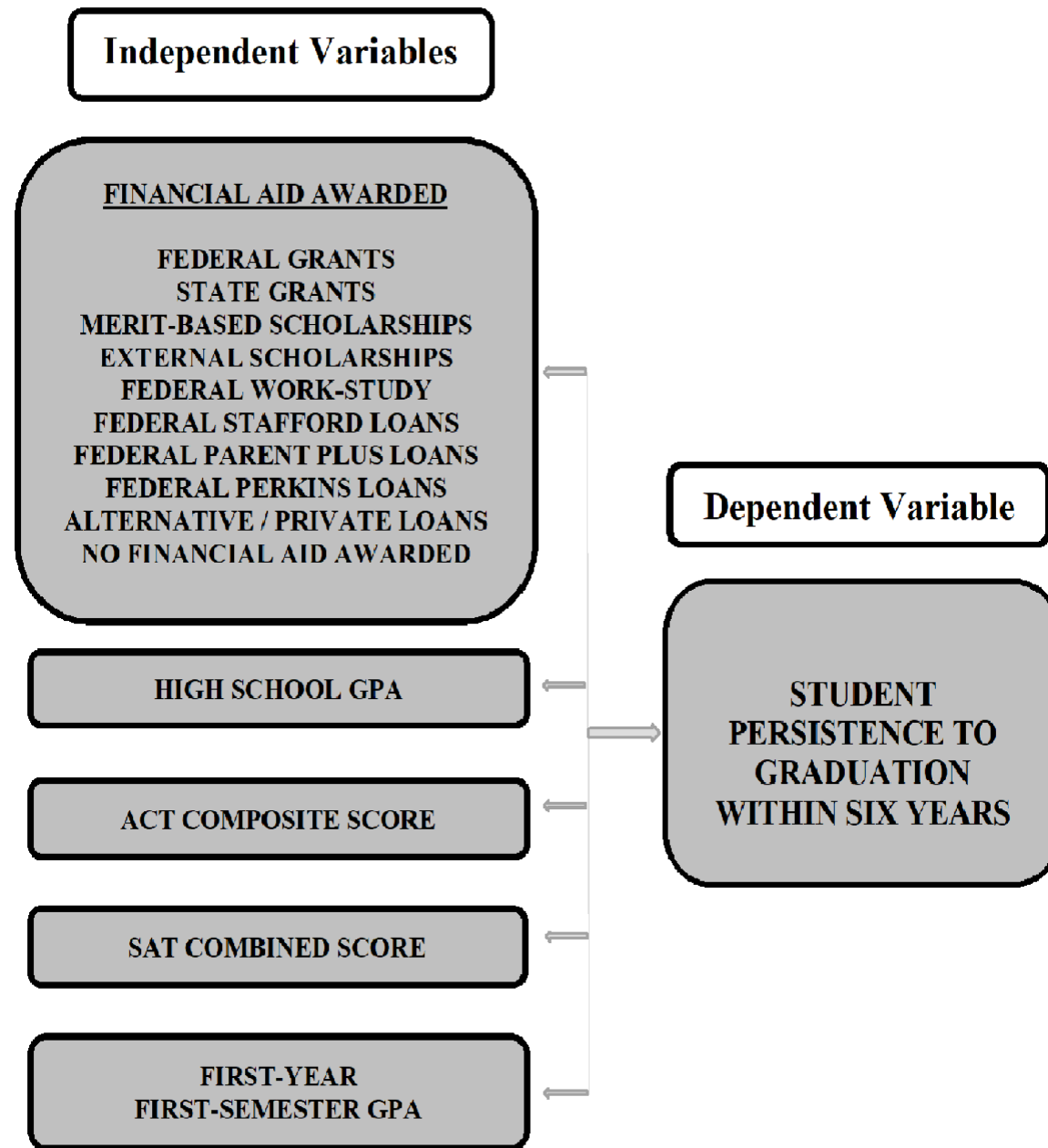


Figure 1: Theoretical Framework

## LIMITATIONS OF THE STUDY

- The study was conducted at one institution, a private HBCU, located in a metropolitan city in the southeastern part of the United States. The data for the study were collected for one freshman class that began in the fall of 2008.
- The Integrated Postsecondary Education Data System (IPEDS) calculation of graduation rates is based on fall enrollment for first-time, full-time students (Cook & Pullaro, 2010).
- The calculation does not include transfer students or students who enroll in the winter/spring semester at baccalaureate institutions. Consequently, only first-time full-time students who were admitted and enrolled for fall 2008 were included in this study.
- The majority of the participants was African American and consisted of 70% female and 30% male.

## DELIMITATIONS OF THE STUDY

Although the sample was drawn from one institutional setting, the total number of the population was  $N=344$  and the total number of eligible participants who met the data collection procedure protocol was  $n=211$ . The sample size represented 61% of the total population.

# RESEARCH METHODOLOGY

## Research Design

- The QUAN-QUAL Model was used in the full mixed methods research study to investigate the relationship between selected independent variables and persistence to graduation for first-time full-time freshmen within six years.
- This presentation of the original research paper focused on a portion of the quantitative inquiry with five of the independent variables and one dependent variable analyzed from the larger study.
- A correlational research design was utilized to examine the relationship between the quantitative dependent and independent variables (Johnson & Christensen, 2008).
- Descriptive statistics was applied to describe, analyze, and summarize the data.

# RESEARCH METHODOLOGY

## Description of the Setting

- The site for this study was a private, coeducational, residential, and comprehensive research HBCU in the southeastern part of the United States.
- The institution offers undergraduate and graduate degrees in Arts and Sciences, Education, Social Work, and Business Administration.
- In 2014, female students accounted for 74% of total enrollment and male students accounted for 26%. The fall 2014 enrollment was approximately 3,500.
- African Americans accounted for approximately 90% of the student population.

# RESEARCH METHODOLOGY

## Sampling Procedures/Instrumentation

- Purposeful sampling was used in this research study.
- The quantitative data sample consisted of first-time full-time college freshmen in the Fall 2008 Cohort who graduated by summer 2014.
- Documentary research was used to collect existing or secondary data from the student information system.



# RESEARCH METHODOLOGY

## Participants and Location of Research

- The participants for the quantitative component of the study were first-time full-time freshmen from the Fall 2008 Cohort who graduated within six years.
- A total of 211 participants were examined for the quantitative inquiry.
- The study took place at a private HBCU in an urban city in the southeastern region of the United States.

# RESEARCH METHODOLOGY

## Data Collection Procedures

- The documentary research data were collected from available data in the student information system.
- Data sets included first-time full-time freshmen in the Fall 2008 Cohort who had a graduation term prior to or in the spring 2014 term.
- The data were organized and reports were created utilizing Structured Query Language (SQL) in the Argos Enterprise Reporting Solution by Evisions, Microsoft Access, and SQL Developer.
- After the data collection was completed, the data were coded; as needed, and exported into the Statistical Package for the Social Sciences (SPSS) for analysis.

## SELECTED ANALYSES OF THE DATA

- The researcher employed stratified random sampling by dividing the population into mutually exclusive groups by gender and by number of years to graduate.
- Systematic sampling was used to select 50 percent of the female students who graduated by Year 4 and Year 5.
- Sampling was not applied to the Year 6 female group, nor to the Year 4, 5, or 6 male graduates due to the smaller size.
- A Pearson Correlation Coefficient was used to analyze the strength and direction of the relationships between persistence to graduation within six years and the five independent variables.

# Treatment of Quantifiable Variables

## Financial Aid Awarded

- First, the researchers described the financial aid data by classifying each type of aid awarded, and then by assigning a numerical code from 1 to 10.
- The range of 1-10 indicates a scale for students with the least amount of need (1 = No Financial Aid Awarded) to students with the greatest amount of need (10 = Alternative/Private Loans) (see Table 1).
- Secondly, a numerical code for the corresponding financial aid award type was entered into a Microsoft Excel spreadsheet for each individual and for each semester the student was enrolled at the University.
- Lastly, the researchers used a frequency distribution technique to count the number of times a particular financial aid award occurred for each student and for each semester; totaled the results; and then recorded the values in a separate column. The total number of occurrences for each student was recorded in an Excel spreadsheet and exported into SPSS.

# Financial Aid Awarded CP-FACTS\*

Table 1

*Classification of Financial Aid Awarded*

Financial Aid Awarded	Classification Code
No Financial Aid Awarded	1
Merit-Based Scholarships	2
External Scholarships	3
Federal Parent PLUS Loans	4
Federal Stafford Loans	5
State Grants	6
Federal Work Study	7
Federal Grants	8
Federal Perkins Loans	9
Alternative/Private Loans	10

\***College Persistence-Financial Aid Coding Technique System (CP-FACTS)** was developed by Mary E. Anderson and Noran L. Moffett to account for the varied types of aid identified for students who received any awarded financial aid (need-based and/or scholarships) as well as those who persisted to graduation without evidence of receiving any of the need-based aid or scholarships categorically listed or identified.

Table 2

*Student F4-1: Classification Codes for Type of Financial Aid Awarded*

ID	Term	Alternative/	Federal		Federal		TOTAL
		Private	Perkins	Federal	Work	State	
		Loans	Loans	Grants	Study	Grants	
		10	9	8	7	6	
F4-1	Fall 2008	1	-	1	-	-	2
	Spring 2009	1	-	1	-	-	2
	Fall 2009	-	-	2	-	-	2
	Spring 2010	-	-	2	-	-	2
	Fall 2010	-	-	1	1	1	3
	Spring 2011	-	-	1	1	1	3
	Fall 2011	-	-	1	2	-	3
	Spring 2012	-	-	1	2	-	3
F4-1	TOTAL	2	0	10	6	2	20

ID	Term	Federal	Federal	No		TOTAL	
		Stafford	Parent	Merit-	Financial		
		Loans	PLUS	External	Aid		
			Loans	Scholarships	Scholarships		Awarded
		5	4	3	2	1	
F4-1	Fall 2008	2	-	-	-	-	2
	Spring 2009	2	-	-	-	-	2
	Fall 2009	2	-	-	1	-	3
	Spring 2010	2	-	-	2	-	4
	Fall 2010	2	-	-	4	-	6
	Spring 2011	2	-	-	3	-	5
	Fall 2011	2	-	1	6	-	9
	Spring 2012	1	-	1	4	-	6
F4-1	TOTAL	15	0	2	20	0	37
GRAND TOTAL							57

# Treatment of Quantifiable Variables

## **High School GPA**

The high school GPA for 208 students was recorded on a 4.0 scale. High school grade point averages were not available in the student information system for three students.

## **ACT Composite Score**

The ACT Composite score was the average of the English, mathematics, reading, and science reasoning test scores. If more than one set of scores was reported, the data reflected the highest composite score earned during a single test. The highest possible ACT Composite test score for fall 2008 college entrants was 36.



# Treatment of Quantifiable Variables

## **SAT Combined Score**

The SAT Combined score was the total of verbal scores and mathematics scores. If more than one set of scores was reported, the data reflected the highest combined score earned during a single test. The highest possible SAT Combined test score for students entering college entrants in fall 2008 was 2400.

## **First-Year First-Semester GPA**

The first-year first-semester GPA was recorded for each student at the end of the fall 2008 semester. The grade point average was calculated based on a 4.0 scale.

# Treatment of Quantifiable Variables

## **Graduation within Six Years**

Students in the Fall 2008 Cohort who graduated within six years of their freshman year were studied. The summer semesters at the University are treated as “trailing” semesters and are considered a part of the preceding academic year. Therefore, for this study, each academic year included three semesters: fall, spring, and summer. Students who started matriculating in fall 2008 and graduated by summer 2012 were considered to be four-year completers, by summer 2013, five-year completers, and six-year completers, by summer 2014.

## SELECTED FINDINGS TO RESEARCH QUESTIONS

**RQ1:** Is there a significant relationship between persistence to graduation within six years and the total number of occurrences of financial aid awarded?

- The Pearson correlation revealed a positive statistically significant relationship between persistence to graduation within six years and the total number of occurrences of financial aid awarded. The correlation coefficient was .152 and the significance was .027, with a significance level of 0.05.
- The analysis indicated that as the total number of financial aid occurrences increased, the number of years to graduate also increased. Similarly, as the total number of financial aid occurrences decreased, the number of years to graduate decreased (see Table 2).

**RQ2:** Is there a significant relationship between persistence to graduation within six years and high school GPA?

- Persistence to graduation within six years was found to be significantly negatively related to high school GPA. The coefficient was  $-.164$ , with a significance of  $.018$ . The results revealed that as the high school GPA decreased, the number of years to graduate increased. Likewise, as the high school GPA increased, the number of years to graduate decreased (see Table 2).

**RQ3:** Is there a significant relationship between persistence to graduation within six years and ACT Composite scores?

- Persistence to graduation within six years was not significantly related to ACT Composite scores. The correlation coefficient was  $-.118$ , with a significance of  $.204$ ; higher than the  $0.05$  level of significance (see Table 2).

**RQ4:** Is there a significant relationship between persistence to graduation within six years and SAT Combined scores?

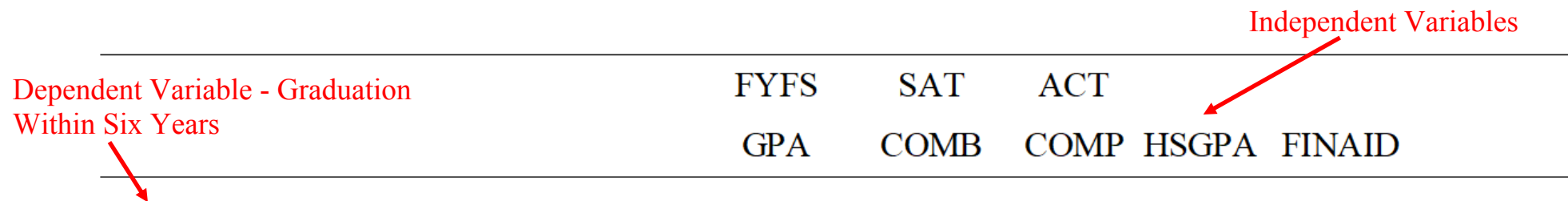
- Persistence to graduation within six years was found to be significantly negatively related to SAT Combined scores. The coefficient was  $-.183$ , and significance was  $.035$ , with a significance level of  $0.05$ . The results revealed that as SAT Combined scores increased, the number of years to graduate decreased. Similarly, as SAT Combined scores decreased, the number of years to graduate increased (see Table 2).

**RQ5:** Is there a significant relationship between persistence to graduation within six years and the first-year first-semester GPA?

- Persistence to graduation within six years was found to be significantly negatively related to first-year first-semester GPA. The correlation coefficient was  $-.236$  and the significance was  $.001$ , with a significance level of  $0.01$ . The results disclosed that as the first-year first-semester GPA decreased, the number of years to graduate increased. Likewise, as the first-year first-semester GPA increased, the number of years to graduate decreased (see Table 2).

Table 3

*Pearson Correlation Coefficients for Research Questions 1-5*



		FYFS	SAT	ACT	Independent Variables	
Dependent Variable - Graduation Within Six Years		GPA	COMB	COMP	HSGPA	FINAID
YEAR	Pearson Correlation	-.236**	-.183*	-.118	-.164*	.152*
	Sig. (2-tailed)	.001	.035	.204	.018	.027
	N	211	133	117	208	211

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

# CONCLUSION

- The study revealed that a statistically significant relationship existed between persistence to graduation within six years and the total number of occurrences of financial aid awarded, high school GPA, SAT Combined scores, and the first-year first-semester GPA for the Fall 2008 Cohort.
- The ACT Composite scores were not significantly related to graduation within six years for the sample population in this study.

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THANK YOU!