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U.S. Department of Education Data Document a Declining 17-Year Trend in Black College Student Graduation Rates

Andrea Griffin
Charles J. Hobson
John M. Novak
Mary Beth Mitchell
Jana Szostek
Jennifer Burosh
Indiana University Northwest, USA
Ana Hobson
Roosevelt University, USA

ABSTRACT

The purpose of this study was to conduct the largest (2002-2018) longitudinal analysis and comparison of Black and White college student 6-year graduation rates. Data were obtained from the U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS) for 17 cohorts (1996-2002 to 2012-2018) of Black and White students. Regression analyses confirmed: (1) a statistically significant negative linear trend for Black students, (2) a statistically significant positive linear trend for White Students, and (3) statistically significant differences between the Black and White student regression lines for both the y-intercepts and slopes. In addition, adverse impact, using the EEOC's "4/5ths rule" was documented for Black students, as compared to White students, in all 17 cohorts.

Keywords: 4/5ths rule, black and white graduation rates, graduation rates, national graduation trends, six-year graduation rates

INTRODUCTION

The personal and societal benefits of obtaining a 4-year college degree are considerable and well-documented (e.g., higher salaries and work benefits, greater rates of employment, improved health and life expectancy, greater productivity, and higher tax payments (Chan, 2016)). Black students earned only 10.3% (National Center for Education Statistics, 2019) of bachelor's degrees awarded in 2019 (while constituting 14.7% of the US population, US Census Bureau, 2022) and among Blacks 25 and older in 2019, only 26.1% held 4-year college degrees, compared to the national average of 36.0% and White figure of 40.1% (US Census Bureau, 2020). Unfortunately, Blacks in the United States are grossly under-represented among college graduates and lag significantly behind White Americans. It is essential to increase the rate of college graduation for Black students.

A necessary first step in this effort is to carefully assess and clearly understand recent trends in college graduation rates for Black students, as well as White students for comparison purposes. The primary goal of this paper is to locate and analyze the best, most comprehensive longitudinal data to investigate these issues. First, a review of available measures of college graduation rates will be provided. Second, a comprehensive review of the research literature on Black and White student graduation rates will be presented in a timeline format to give a sense of how this research has progressed. Third, gaps in the literature will be identified and specific research questions will be offered. Fourth, 17 years of 6-year college graduation data from the U.S. Department of Education will then be analyzed to formulate answers to the research questions. Finally, statistical results will be presented and discussed.

Assessing College Outcomes

Among the various metrics used to assess student success in U.S. 4-year colleges and universities (persistence, GPA, engagement, satisfaction, and graduation), arguably the most important is graduation (Cook & Pullaro, 2010). If admitted and enrolled full-time students do not graduate from a 4-year school, it is often viewed as an institutional, personal, and societal failure, although switching schools and temporary repeated enrollment interruptions can significantly impact graduation statistics (Cook & Pullaro, 2010).

In their consideration of the strengths and weaknesses of several college graduation rate measures, Cook and Pullaro (2010) also noted that, prior to 1985, there were no national-level data on institutional higher education graduation rates. Thus, policy makers and researchers were limited

to institutional, state, and regional figures, and unable to monitor and compare student graduation rates for the nation as a whole. Gold and Albert (2006) asserted that passage of the Student Right-to-Know Act (SRK) in 1990 marked the beginning of the federal government's direct involvement in collecting and disseminating graduation rate information from U.S. colleges and universities.

Currently, the most widely accepted and commonly used measure of full-time student graduation success at 4-year institutions of higher learning is the U.S. Department of Education's 6-year cohort graduation rate (Cook & Pullaro, 2010). The 1990 SRK required all postsecondary schools participating in Title IV Federal student aid programs (e.g., Pell Grants) to annually submit overall 6-year graduation rates, along with rates for various demographic subgroups.

Submissions are compiled, analyzed, and published by the National Center for Education Statistics (NCES) of the U.S. Department of Education in the Integrated Postsecondary Education Data System (IPEDS), Graduation Rate Survey (GRS). The NCES requires one year to process this information and release provisional results, allowing institutions an additional one year to submit revised figures before final results are released. There were currently 17 cohorts with finalized results, through 2012-2018. The first full 6-year cohort was 1996 – 2002. Data for the 2013-2019 cohort are considered provisional and under review.

Reliable estimates of national college student graduation rates can also be obtained from another survey sponsored by the NCES – the Beginning Postsecondary Student (BPS) Study. While the IPEDS GRS focuses on full-time students who graduate within six years from their first school, the BPS follows a national sample of students for six years, regardless of whether they remain at their first institution or transfer. Thus, national graduation figures for BPS graduation rates are consistently higher than those for IPEDS GRS.

LITERATURE REVIEW

Published empirical research comparing Black and White college student 6-year graduation rates, using either the NCES's IPEDS GRS, BPS, or other comparable national samples will be chronologically reviewed in this section. This approach covers the period from 1996 – 2020 and provides insight into how data was compiled and analyzed over the years and how, regardless of the research focus, the results revealed the same trends.

1996

The pioneering work of Astin et al., (1996) represented the first attempt to examine national graduation rates from 4-year colleges and universities. In the fall of 1985, 365 baccalaureate schools participated in the Cooperative Institutional Research Program's annual survey of entering freshman. From this pool of students, 95,406 were randomly selected for inclusion in the study. Degree attainment data were successfully obtained from 75,752 (79.4%) individuals after four, six, and nine years. Percentage results for African American and White students are summarized in Table 1 below.

Table 1

Point-In Time Graduation Rates for African American and White College Students

Student group	4-Year graduation	6-Year graduation	9-Year graduation
African-American students	19.4%	31.2%	33.9%
White students	42.7%	46.8%	47.3%

The graduation rates were substantially lower for African American students in all three completion year categories. The gap was especially large in the 4-year category, with the African American graduation rate of only 19.4%, which was less than one-half of the White rate of 42.7%.

2002

This line of research was continued when Berkner et. al., (2002) reported results for the Beginning Postsecondary Study (BPS: 1996-2001). This study utilized a national sample of 4,920 students who first enrolled in 4-year U.S. colleges and universities in the 1995-1996 academic year. The sample was drawn from participants in the National Postsecondary Aid Study Program, sponsored by the U.S. Department of Education, National Center for Education Statistics. Graduation rates after six years, at the same institution, for Black and White students were respectively, 40.9% and 59.0%.

2004

Horn, et al. (2004) also analyzed data using BPS. They conducted a comparison of 5-year college graduation rates at U.S. 4-year colleges and universities for two periods of time 1989-1994 and 1995-2000, based upon data collected during two administrations of the Beginning Postsecondary Students Longitudinal Study (BPS: 90/94 and BPS: 96/01). Student samples

were selected from participants in the corresponding National Postsecondary Student Aid Studies (NPSAS: 90 and NPSAS: 96) sponsored by the U.S. Department of Education. The 1989-1994 cohort consisted of 3,800 students who were enrolled in a U.S. 4-year college or university for the first time in fall 1989, while the 1995-2000 cohort included 6,600 students enrolling in the fall of 1995. At the conclusion of each 5-year period, graduation rates were calculated and compared. Their results indicated that Black student 5-year graduation rates for 1989-1994 and 1995-2000 were respectively, 42% and 37% similar figures for White students were 54% and 57%. Thus, while the Black student 5-year graduation rate declined by 5 percentage points (42% to 37%), the White student rate increased by 3 percentage points (54% to 57%). Although the authors concluded that "no *overall* [emphasis added] change in the 5-year bachelor's degree completion rate was detected" (Horn, et al., p. iii), this statement was inaccurate when applied to Black and White student subgroups separately.

2006

In 2006, two studies showed the continuation of the disparity between these two subgroups. As part of a larger study examining the impact of institutional characteristics on college degree completion among various racial/ethnic student groups, Oseguera (2005-2006) reported 6-year graduation rates for Black and White students. Although NCES data were not used, her sample was drawn from a national longitudinal study of 303 4-year schools participating in the Cooperative Institutional Research Program (CIRP). Results for the sample of 2,210 Black students indicated a 6-year graduation rate of 50%, while that for 4,421 matched White students was 60%.

Similarly, *The Journal of Blacks in Higher Education* (2006) reported that U.S. Department of Education national graduation data showed the completion rate for Black students in 2006 was 42%, fully 20 percentage points below the rate for White students of 62%. Although this gap was very large, they noted that since 2004, the Black student rate had improved slightly from 39% to 42%.

2010

In 2010, more evidence of distinct differences in Black graduation rates was noted when Radford et. al., (2010) presented results for the Beginning Postsecondary Study (BPS: 04/09). They tracked a national sample of 8,470 students (Wine et al., 2011) who first enrolled in 4-year U.S. colleges and universities in the fall of 1995 for a period of six years. Participating students were selected from enrollees in the U.S. Department of Education's

National Postsecondary Aid Study Program. Findings indicated that the Black student 6-year graduation rate from their first institution was 34.8%, while that for White students was 20 percentage points higher at 54.8%.

2014

In 2014, IPEDS data were again used to demonstrate graduation-rate disparity. The Education Trust (2014) published their report entitled *The State of Education for African American Students,* which addressed participation and achievement at all levels of the U.S. educational system. They concluded that "over the past few decades, African American students across the nation have made real gains in academic achievement… [but] the performance of African American students lags behind that of White students" (p. 2). As evidence of racial differences in the postsecondary sector, they cited IPEDS statistics for the 2003-2009 cohort that revealed a 6-year graduation rate at U.S. 4-year colleges and universities for Black students of 40%, fully 23 percentage points lower than the White student rate of 63%.

2015

A 2015 longitudinal study also confirmed lower graduation rates for underrepresented minorities. In a paper entitled *Rising Tide: Do College Grad Rate Gains Benefit all Students?*, Eberle-Sudre et al., (2016) reviewed 10 years of national data and concluded that "the graduation rate for African American, Latino, and Native students has increased by 13 points in the last decade" (p. 1). Moreover, "the large improvement among underrepresented minority (URM) students has cut in half the gap in graduation rates between these students and their white peers – which was 14 percentage points in 2003" (Eberle-Sudre et al., 2016; p.1).

2016

Using IPEDS 6-year graduation data for 2003 and 2013, Nichols et al., (2016) compared relative changes in graduation rates for Black and White students. They found that consistently lower Black rates rose modestly from 38.2% in 2003 to 40.3% in 2013 (a gain of 5.5%), relative to a much larger rise for White students, from 55.4% in 2003 to 60,7% in 2013 (a gain of 9.6%). Thus, while there was a small percentage gain in Black student 6-year graduation rates from 2003 to 2013, the spike for White students was much larger, further widening the college completion gap between the two racial groups.

Racial differences in educational trends at all levels were examined in a comprehensive study by Musu-Gillette, et al. (2016). For students beginning at 4-year U.S. colleges and universities in the fall of 2007, the

researchers used IPEDS data (2007-2013) to determine 6-year graduation rates from the first institution attended for all students and several racial subgroups. They found that the graduation rate for Black students was 41%--22 percentage points lower than the White rate of 63%.

2017

Working with the National Opinion Research Center (NORC), the National Student Clearing House (Shapiro, et al., 2017) created a very large representative sample (1,236,815) of students who entered college at 4-year public schools in the U.S., in the fall of 2010. They tracked and reported 6-year graduation rates for those who completed their degrees at the starting institution. For 123,147 Black students, the 6-year graduation rate was 35.3%, while that for 748,836 White students was 52.4%.

2018

The Journal of Blacks in Higher Education (2018) cited interesting 6-year graduation results, compiled by the National Collegiate Athletic Association from IPEDS data, comparing Black and White students at Division I schools during the 2010-2016 period. The Black student graduation rate of 46% was 23 percentage points lower than the White rate of 69%.

2020

Myers and Myers (2020) addressed what they termed persistent institutional gaps in 4-year college graduation rates in the U.S. between Whites and underrepresented minorities (URM), which included Black male and Black female students. They noted that historical data from the NCES (2019) "showed that the 6-year graduation rates for Whites, Blacks, and Hispanics have improved, albeit unevenly, between the initial 1996 [IPEDS] cohort and the 2011 cohort" (p. 146) and sought to explore the potential impact of institutional expenditures and financial aid on these deficits between URM and White students. Their analytical sample consisted of 3, 6-year IPEDS cohorts (2009-2015, 2010-2016, 2011-2017). Among their findings were: (1) a confirmation of consistent differences in graduation rates as a function of race and (2) the largest gaps in graduation percentages were between White and Black males (23.09), followed by White and Black females (18.67).

Hobson et al., (2020) utilized IPEDS data for the 2010-2016 cohort to assess and compare 6-year graduation rates for Black and White students. At the national level, the Black student rate was 35.9%, while that for White students was 60.8%. In its first published application to 6-year college graduation rates, the authors used the "four-fifths rule," originally introduced

by the Equal Employment Opportunity Commission (EEOC) (1978) and three other federal agencies, as an objective framework to determine if an organizations' employee selection process unfairly affected minority group applicants. According to the EEOC (1978) "adverse impact" was deemed present if the rate of selection for a minority group was less than four-fifths of the rate for the majority group. When this rule was applied to compare Black and White student 6-year graduation rates, Hobson et al., (2020) documented adverse impact in graduation rates for Black students at the national level and in 48 (94.1%) of the 50 states and the District of Columbia.

Summary

Based upon the national research reviewed in this section dealing with Black and White college student 6-year graduation rates, the following conclusions can be reasonably drawn. First, Black student graduation rates are consistently lower than those for White students. Second, White student graduation rates appear to be steadily increasing over the last two decades. Third, the 6-year graduation rates for Black students are reported to be increasing, but more slowly than White rates. Fourth, the four-fifths rule provides a useful interpretational framework to assess the magnitude and severity of differential graduation rates.

Gaps in Literature

Unfortunately, multiple significant gaps appear in the empirical literature. To begin with, there have been no statistical evaluations of national trends in 6-year college graduation rates over the last 20 years for either Black or White students. In addition, there are no statistical comparisons of recent national trends in graduation rates for the two student subgroups. Finally, while Hobson, et al. (2020) addressed adverse impact in 6-year graduation rates for Black students in the 2010-2016 national cohort, these calculations have not been conducted for any other recent cohorts.

RESEARCH METHOD

Purpose

The current study was designed to address the research gaps discussed above, using the comprehensive IPEDS national database of 6-year graduation rates for 17 cohorts (1996-2002 through 2012-2018). Specifically, answers to the following four research questions were sought:

1. What has been the trend in 6-year college graduation rates over this 17-year period for Black students?

2. What has been the trend over this period in White student 6-year graduation rates?
3. How do the trends for Black and White students compare?
4. Is there evidence of adverse impact in the 6-year graduation rates for Black students?

Data

The data used in this study were retrieved from the U.S. Department of Education, National Center for Education Statistics' (NCES) Integrated Postsecondary Education Data System (IPEDS). As discussed in the Introduction, the Student Right-to-Know Act of 1990 required any college or university participating in Federal student aid programs to report 6-year graduation rates for full-time students who remained at their first institution, along with rates for various student subgroups. Currently, NCES has information available for 17 6-year cohorts, beginning with 1996-2002 and ending with 2012-2018. The agency requires two years after initially receiving school data to verify results and give schools an opportunity to submit corrected information. Six-year graduation rates for Black and White students were retrieved and analyzed as described below

Analyses

Regression analysis was conducted to assess trends in 6-year graduation rates over the 17-year period for which IPEDS data are available. Dey and Astin (1993) evaluated the comparative effectiveness of linear regression, logit, and probit in analyzing college outcomes measured using percentages (including graduation rates). Although problems may arise with regression analysis if the frequency distribution of the dependent variable evidence concentration in the tails, potentially resulting in predicted values falling outside of the possible range from 0 to 1.0, they concluded that "there are few practical differences" (p. 575) between the three techniques. Given broader familiarity and ease of interpretation, they recommended the use of regression analysis in most applications. In response to the potential problem with regression analysis identified by Dey and Astin (1993), Scott et al., (2006) suggested a corrective strategy involving the following transformation of data in the form of percentages: logit (percentage) = natural-log (percentage/(1-percentage)). After this transformation, they concluded that linear regression analysis could be used without concern about errors in prediction. Thus, following each regression analysis conducted in this study, the transformation recommended by Scott et al. (2006) was made and a second regression analysis performed. Results from the two analyses were then reviewed for consistency.

A regression analysis was conducted for Black students addressing the relationship between 6-year graduation rates and time, over the 17-year period for which national data are available. As mentioned above, the recommended transformation in graduation percentages was made and a second regression analysis performed. Similarly, for White students, two regression analyses were conducted. In the bivariate regression analyses for both Black and White student, the dependent variable was 6-year graduation percentage, and the independent variable was time, measured in years.

To evaluate differences in the regression lines (y-intercepts and slopes) for Black and White students, the data sets for the two groups were combined and analyzed using an expanded set of independent variables/predictors. In addition to Time, a dichotomous variable for Race and one for an interaction term between race and time (Race x Time) were entered into the regression analysis. Once again, this was followed with a second regression utilizing the transformation discussed above. In both expanded multiple regression analyses, the dependent variable was 6-year graduation percentage, and three independent variables were evaluated. They included: (1) time, measured in years, (2) a dichotomous variable for race, coded 1 = Black and 2 = White, and (3) an interaction term between race and time, defined as the product of these two variables.

Finally, "four-fifths rule" calculations (EEOC, 1978; Hobson, et al. 2020) were applied to each of the 17 cohorts in IPEDS data set. Specifically, the White 6-year graduation rate was multiplied by four-fifths (.8) and compared to the corresponding Black graduation rate. If this figure was less than four-fifths of the White percentage, adverse impact was documented.

RESULTS

IPEDS Data Summary

Table 2 provides a summary of the 6-year NCES graduation data analyzed in this study, along with adverse impact calculations that will be described later. Specifically, the five columns in the table offer the following information: (1) the six-year periods constituting the 17 cohorts examined, (2) the White student 6-year graduation rates for each cohort, (3) the four-fifths rule cut-off values (White rate x four-fifths or .8), (4) the corresponding Black student 6-year graduation rates, and (5) a determination if adverse impact was present by comparing the Black student graduation rate with the four-fifths rule cut-off score (.8 x White student rate). The range in the number of students included in the 17 cohorts was 1.12 million to 1.79 million, with a mean of 1.49 million.

Table 2

National Six-Year Graduation Rates[1] for 17 Cohorts (Initial Cohort 1996-2012) and Adverse Impact by Student Race for U.S. Four-Year Colleges and Universities

6-Year Cohort Period	White Students Only,6-Year Grad. Rate	4/5 Rule Cut-Off (.8x White Rate)	Black Students Only,6-Year Grad. Rate	Adverse Impact, 4/5 Rule Comparison
1996-2002	57.2%	45.8%	38.2%	Yes
1997-2003	57.3%	45.8%	38.5%	Yes
1998-2004	58.2%	46.6%	39.8%	Yes
1999-2005	58.9%	47.1%	40.4%	Yes
2000-2006	59.4%	47.5%	41.2%	Yes
2001-2007	59.4%	47.5%	40.5%	Yes
2002-2008	59.4%	47.5%	38.9%	Yes
2003-2009	59.5%	47.6%	38.0%	Yes
2004-2010	59.8%	47.8%	37.8%	Yes
2005-2011	60.2%	48.2%	37.5%	Yes
2006-2012	60.0%	48.2%	37.4%	Yes
2007-2013	59.8%	47.8%	36.9%	Yes
2008-2014	59.5%	47.6%	36.2%	Yes
2009-2015	59.1%	47.3%	34.7%	Yes
2010-2016	60.6%	48.5%	35.4%	Yes
2011-2017	60.7%	48.6%	34.4%	Yes
2012-2018	63.0%	50.4%	38.4%	Yes

[1]U.S. Department of Education, National Center for Statistics, Integrated Postsecondary Education Data System (IPEDS)

Black and White Student Graduation Rate Trends

Regression analysis results for Black students are summarized below in Table 3.

Variable	*B*	*SE*	*t*	*p*
Constant	40.562	.728	55.690	.001
Time	-.290	.071	-4.079	.001

For the independent variable represented by time (as measured in years), these findings confirm a statistically significant negative linear trend in Black student 6-year college graduation figures over the 17-year period

from 2002-2018. The rate of decrease per year is approximated at .29 percentage points. The R^2 for this regression model was .526, F (1,15) = 16.64, p = .001, with an adjusted R^2 of .494.

Calculations for the regression analysis of Black student 6-year graduation rates using the transformation proposed by Scott, et al. (2006), logit (percentage) = natural-log (percentage/1-percentage)), were nearly identical (untransformed adjusted R^2 = .494; transformed adjusted R^2 = .496) to the untransformed analysis, confirming Dey & Astin's (1993) contention that there are no practical differences in using linear regression, logit, or probit in analyzing dependent variables consisting of percentages and recommendation that regression be used in most applications.

Essentially, identical results were found when comparing all regression analyses in this study using untransformed and transformed dependent variables. Thus, a decision was made to simply report regression results without transforming the dependent variable.

Results for the regression analysis with White students are provided in Table 4.

Table 4

Regression Results for White Students

Variable	*B*	*SE*	*t*	*p*
Constant	57.563	.387	148.846	.001
Time	.218	.038	5.786	.001

Evaluation of the independent variable in this equation (time) revealed a statistically significant positive linear trend in college graduation rates for White students. The annual increase over the 17-year period is approximately .22 percentage points. The computed R^2 for this regression model was .691, F (1,15) =33.481, p = .001, while the adjusted R^2 was .670.

Comparison of Black and White Student Graduation Rates

Regression analysis results comparing (both y-intercepts and slopes) the lines of best fit for Black and White students are presented below in Table 4. Recall from the Method section that data for both student subgroups were combined for this regression analysis and two additional independent variables were added to the equation: (1) a dichotomous variable coding race and (2) an interaction term of Race x Time.

Findings for the regression analysis comparing Black and White students are offered in Table 5.

Table 5

Regression comparing Black and White Students with Race x Time Interaction

Variable	*B*	*SE*	*t*	*p*
Constant	74.565	1.304	57.186	.001
Time	.727	.127	5.711	.001
Race	-17.001	.825	20.616[1]	.001
Time x Race	-.508	.080	6.613[2]	.001

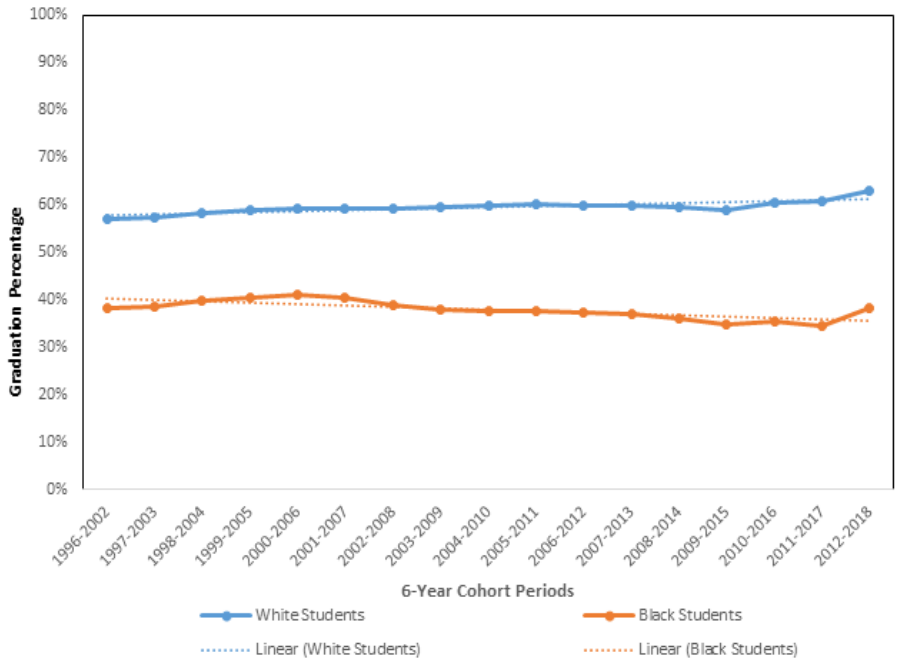
Note. Differences in y-intercepts and slopes are provided.

[a] This is a test of the difference in the y-intercepts/constants in the two individual equations for Black and White students, with-17.001 representing the Black intercept of 40.562 minus the White intercept of 57.563.

[b] This is a test of the difference in slopes between the Black and White student regression lines, with-.508 representing the Black student slope of -.290, minus the White student slope of .218.

Figure 1

Comparison of Regression Lines for Black and White Students



The computed R^2 for the overall regression model was .990, F (3,30) =1,011.86, p = .001, with minimal shrinkage present in the adjusted R^2 value of .989. The findings in Table 5 confirm major differences in the 6-year college graduation rates between Black and White students for all three of the independent variables included in the analysis. Specifically, statistically significant results were found for time, race, and the interaction term of race x time.

The calculated values in Table 5 confirm that there are statistically significant differences between the regression lines for Black and White students, in terms of both y-intercepts and slopes. This information is displayed graphically in Figure 1 below.Finally, the adverse impact calculations were summarized earlier in Table 2. Results indicated that, using the four-fifths rule, adverse impact in graduation rates for Black students was confirmed in all 17 cohorts.

DISCUSSION

Four Research Questions

The first research question focused on the trend in Black student 6-year college graduation rates present in 17 6-year IPEDS' cohorts. Contrary to the conclusions drawn from the literature review, there was a strong statistically significant declining trend in Black student graduation rates from 2002 to 2018. Thus, instead of rising at a slower rate than that for White students, the Black student rate was steadily falling at approximately .29 percentage points per year.

Results related to the second research question concerning the graduation trend for White students were less surprising and more consistent with previous studies. There was a strong, statistically significant positive trend, across the 17 IPEDS cohorts, in White student graduation rates, with an average annual gain of approximately .22 percentage points.

The third research question in this study focused on a direct comparison of graduation trends for Black and White students. Multiple regression results revealed compelling statistically significant differences between the two student subgroups. The y-intercepts in the regression equations subgroups were statistically different, with that for white students (57.563) being 17.001 points higher than that for Black students (40.562). Thus, the respective regression lines indicated that the White student graduation rate at the beginning of the 17-year period covered by the IPEDS data (2002) was 57.563%, which was 17.001 percentage points higher than the comparable Black student rate of 40.562.

The slopes (or rates of change) of the regression lines for Black and White students were also statistically different. While the slope for White students was .218, that for Black students was -.290, a difference of -.508 (-.290 - .218). Unfortunately, Black students, who began the 17-year period covered by IPEDS data (2002) with a 6-year graduation rate of 40.562% (17.001 percentage points below the White student rate of 57.563%), have experienced steady graduation rate declines, while those for White students have been consistently rising. Thus, the differences between the two student subgroups have been growing each year.

In only the second published application of the four-fifths rule to Black student 6-year college graduation rates (the first was Hobson et al., 2020), the results in this study confirmed adverse impact in all 17 IPEDS cohorts. Thus, in every cohort, the Black student graduation rate was less than four-fifths of the White student rate, providing a clear and compelling answer to the fourth research question concerning adverse impact. It was present in 17/17 (100%) cohorts.

Conclusions and Implications

Based upon the findings in this study, four important conclusions and implications (for researchers and practitioners) can be drawn in four areas. First, perhaps the most surprising and dismaying conclusion was the decline in Black student 6-year graduation rates. As recently as 2020, Meyers and Myers reviewed historical graduation rate data from the *Digest of Education Statistics* (NCES, 2019) and opined that completion rates were improving for all racial/ethnic groups. They further noted that the improvement was uneven across subgroups and that Black students were not making progress in closing the gap in graduation rates with White students. Their statements were consistent with the prevailing narrative that Black graduation rates have been increasing, but not quickly enough to reduce the observed deficit with White graduation rates. Clearly, the results from this study contradict the notion of slowly rising Black student 6-year graduation rates and instead confirm a statistically significant consistent downward trend from 2012 to 2018, using the most comprehensive national database – IPEDS. Research implications suggest that scholars largely failed to identify the significant downward trend in Black student 6-year graduation rates and need to do a better job in aggregating longitudinal data to measure changes more accurately over time, as well as determining whether similar problems have occurred in related domains. Likewise, practitioners, beginning with leaders at the Department of Education, other federal government officials, and university

administrators also missed the downward trend and should redouble efforts to facilitate graduation success for Black students.

The second conclusion is closely related to the first. The 6-year graduation rates for Black and White students have been diverging over time. As Myers and Myers (2020) asserted, White graduation rates have increased, but at the same time Black graduation rates have fallen, resulting in a steadily widening gap between the two subgroups. This phenomenon can be confirmed with data presented earlier in Table 1. The gap between Black and White student 6-year graduation rates in the first IPEDS cohort (1996-2002) was 19.0 percentage points (White students = 57.2%, Black students = 38.2%). By the 17th cohort (2012-2018), this gap in percentage points rose to 24.6 (White students = 63.0%, Black students 38.4%). Thus, from 2002-2018, the difference between White and Black student 6-year graduation rates grew by 5.6 percentage points (24.6-19.0), an increase of 29.5%. Once again, both researchers and practitioners failed to identify the divergent trends in Black and White student graduation rates or develop a sense of urgency about the expanding gap between the two subgroups.

The third conclusion involves the application of the federally endorsed (Equal Employment Opportunity Commission, Department of Labor, Department of Justice, and the Civil Service Commission for use in employee selection) four-fifths rule (EEOC, 1978), in evaluating Black student 6-year graduation rates, compared to White student graduation rates. Unfortunately, for each of the 17 cohorts in the IPEDS database, there was evidence of adverse impact. Specifically, in all 17 cohorts, the Black student 6-year graduation rate fell below four-fifths of the rate for White students. These findings confirm pronounced, chronic adverse impact on Black students and would be actionable with the EEOC, if evidenced in employment settings with employee selection. Given the fact that adverse impact in employment settings can trigger enforcement action by the EEOC and federal courts, its manifestation in college graduation rates implies that researchers could explore possible avenues of action by the Office of Civil Rights (OCR) in the U.S. Department of Education or federal courts. Practitioners in postsecondary education would be well-advised to follow adverse given to employers concerning adverse impact—be proactive, monitor institutional adverse impact rates, and initiate corrective action before complaints are filed.

The fourth and final conclusion centers on the four-fifths rule itself and how it could be utilized in higher education. As asserted by Young Invincibles (2017) and Myers and Myers (2020), there is currently no metric or threshold for evaluating the severity of disparities in 6-year graduation rates. The four-fifths rule represents a reasonable option to fill this void. Since

its introduction in 1978, the four-fifths rule has a decades-long, successful history of providing a useful metric to assess the severity of adverse impact in employment settings (Noe et al., 2020) and could perform the same function in the educational arena. For scholars, the availability of the four-fifths rule provides an objective, easily calculated, and understood methodology to operationally define discrimination in educational outcomes. Similarly, practitioners can utilize the four-fifths rule to gauge the impact of educational programs and policies on minority student graduation rates.

Recommendations

The following recommendations are offered for consideration.

1. To put it bluntly, the documented decline in Black 6-year college graduation rates is a national disgrace. Reversing this inimical and corrosive trend must become a priority of the highest order for America and all institutions of higher education. Responsibility and accountability for progress must be squarely placed on national and state leaders, as well as college and university presidents.

While the NCES is required to submit an annual report to Congress on The Condition of Education, this document does not contain a breakdown of 6-year college graduation rates as a function of race (sex is included). Thus, our elected federal officials may not be aware of the decline in Black student graduation rates, even though NCES has the data. Consequently, an obvious recommendation would require the NCES to include a racial breakdown of college graduation rates in its annual report to Congress. To encourage accountability at the institutional level, the federal government could and should make financial support a condition upon achieving improvements in Black (and other underrepresented minorities) student graduation rates and reductions in adverse impact. Amid the Black Lives Matter movement and serious deliberations about reparations for descendants of slaves, reversing the decline on Black student college graduation rates is a moral imperative.

2. Given the lack of a threshold or interpretational framework for assessing the severity of disparities between Black and White student graduation rates (Myers & Myers, 2020; Young Invincibles, 2017) and the broad federal acceptance of the four-fifths rule to determine adverse impact in employment settings (i.e., it is used at the EEOC, Department of Justice, Department of Labor, and the Civil Service Commission), we recommend that the Department of Education adopt this operational definition and require that institutions participating in federal student aid programs report the information annually. This would provide all stakeholders with an objective,

standardized metric to assess the impact of school programs on student subgroups.

3. We recommend that the U.S. Department of Education enhance the NCES's IPEDS and BPS programs in the following ways. Given the differential rates at which students complete college degrees, we suggest that the tracking period in both programs be extended from six to 10 years. Within the BPS program, a substantially increased national sample size would allow for a more accurate assessment of student academic progress and barriers to degree attainment. Substantial additional funding would be necessary to implement these improvements, especially for the periodic monitoring involved in the BPS.

Limitations

There are two important limitations that should be addressed when considering the generalizability of the results found in this study. First, Cook and Pullaro (2010) identified several significant disadvantages associated with using IPEDS data to define 6-year graduation rates at U.S. baccalaureate institutions. Among these were: (1) the inclusion of only first-time full-time students starting in the fall semester, (2) the exclusion of part-time students, (3) the exclusion of transfer students, and (4) the failure to account for students who take longer than six years to graduate. Given these drawbacks, the authors estimate IPEDS fails to include roughly 40% of students who enroll at 4-year colleges and universities. Notwithstanding these legitimate concerns about IPEDS baccalaureate data, the facts remain that Black student 6-year graduation rates have been declining, while those for White students have been increasing; an adverse impact was documented in all 17 cohorts, from 2002-2018 IPEDS dataset. Second, information concerning cohort 6-year graduation rates is only available for 17 continuous years, from 2002-2018. While IPEDS data is the most comprehensive, standardized national data available, it represents a relatively short time span in modern U.S. history and limits generalizations to earlier or later periods.

Future Research

While the IPEDS data analyzed in this study provided clear and compelling answers to the four research questions that were addressed, five additional important issues surfaced that warrant future research. First, the unexpected and unacceptable decline in Black student 6-year college graduation rates from 2002-2018 requires both explanatory and corrective strategy research. Reasons for this national decline must be identified and fully understood in order to formulate and test effective remedial solutions. A

review and continuation of "best practices" research can be helpful in locating/developing successful initiates at the institutional and state levels.

Second, given the documented national adverse impact on Black college students found in the present study, it would be useful to address this issue in the 50 states and D.C. As Hobson, et al. 2020 noted, for the 2010-2016 cohort, only three (Maine, New Hampshire, and Rhode Island) of 51 states/District of Columbia showed no evidence of adverse impact. States that have successfully eliminated adverse impact and improved Black student graduation rates can be used as examples for other states still struggling with these issues. The publication of statistical analyses comparing Black and White student success from 2002-2018 can also serve to motivate the legislatures in lagging states to implement stronger corrective measures.

Third, future research on the most effective policies/programs to provide incentives to institutions and states to address Black student graduation rates and adverse impact more successfully would be very instructive. What types of incentives work best? What monetary levels are most impactful? Are penalties (e.g., reductions in federal funding) more effective than incentives?

Fourth, the pronounced, pervasive, and long-term adverse impact found in this study for Black students at the undergraduate level provides a persuasive rationale for examining this issue at the graduate level in master's and doctoral programs. Finally, the limitations and criticisms in the NCES IPEDS dataset articulated by Cook and Pullaro (2010) justify future research on national educational data collection systems that are more inclusive and comprehensive.

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Andrea Griffin, Ph. D., is an Associate Professor of Management in the School of Business and Economics, Indiana University Northwest. She has varied research interests, including college graduation rates in BIPOC communities, gender and diversity, volunteering and disability, mediation and conflict resolution, and critical management studies/critical race theory. griffane@iun.edu

Charles J. Hobson, Ph.D., is a Professor of Management in the School of Business and Economics, Indiana University Northwest. His major areas of expertise lie in organizational behavior, supervisory management, human resources management, sexual harassment in the workplace, team development, and leadership. chobson@iun.edu

John Novak is Assistant Vice Chancellor for Institutional Effectiveness & Research at Indiana University Northwest. His expertise, as a 25-year veteran of institutional research, lies in collection and analysis of higher education metrics for institutions and student success. jmnovak@iun.edu

Mary Beth Mitchell, M.A., works at Indiana University Northwest as a data analyst/programmer in the office of Institutional Effectiveness and Research and is an adjunct faculty in the Department of Psychology. Her interests include researching methods to improve student success and retention and developing teaching methods to help students enjoy taking statistics. mbmitch@iun.edu

Jana Szostek, JD, is the Director of the Center for Professional Development and Adjunct Faculty in the School of Business and Economics, Indiana University Northwest. Her areas of expertise include business law, human resources management, and training and development. jaszoste@iun.edu

Jennifer Burosh is an undergraduate student in the School of Education at Indiana University Northwest in Gary, IN specializing in urban education. jburosh@iu.edu

Ana Hobson is currently a marketing professional in the tech industry in Chicago, IL. She is currently pursuing her Master of Science at Roosevelt University. Her areas of expertise lie in consumer behavior and market research. ananevone@gmail.com

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