

Supportive Programs and Financial Aid: Measuring Their Impact on Retention of Blacks and Latinx College Students in the New England Region

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Enrollment in U.S. Higher Educational Institutions has declined over the last decade. Research on student retention suggests that the type of financial aid offered is related to student retention, as does the number of student support programs offered to students from different demographic backgrounds. Is there evidence that these factors are associated with student retention levels in the New England Region? We performed a T-test and Regression Analysis to examine these questions. Results provide evidence that need-based aid and the number of student support programs are positively associated with retention levels for Blacks, Latinx, and White students in this region.

Keywords: student retention, Black, Latinx, White, financial aid, supportive programs

INTRODUCTION

Enrollment in U.S. Higher Educational Institutions (HEIs) has declined over the last decade, and this downward trajectory continues. According to the National Student Clearinghouse Research Center (NSCRC), college enrollment fell below 18 million for the first time in a decade, dropping 1.3 percent for the fall 2019 semester, 3.1 percent for fall 2020, and 2.7 percent for fall 2021. This college enrollment decline has been prominent across all higher education sectors and is driven by a decline in the number of high school graduates (Gawe, 2018).

Research indicates the national decline in high-school graduates is fueled by a decrease in smaller birth cohorts of Whites, who previously represented 70 percent of all high-school graduates until around 2007 (Hussar & Bailey, 2019; Bransberger & Michelau, 2016). However, even as total college enrollment has declined—primarily due to smaller birth cohorts—the proportion of Black¹ and Latinx student enrollment has increased (Gawe, 2018). Specifically, Latinx students' college enrollment doubled from 1.7 million in 1996 to approximately 3.6 million by 2016, representing a 111.7% increase. Black high school graduates' college enrollment increased by 63.63% from 2.2 million to 3.6 million by 2016 (Espinosa et al., 2019). This increase in enrollment for Black and Latinx students may serve as a potential solution for institutions

of higher education looking to offset any declines in enrollment due to smaller birth cohorts of White students.

However, despite the positive enrollment trends for Black and Latinx students, racial disparities in college retention and completion remain an issue. Nationally, for the 2011 college enrollment cohort, six-year completion rates for White students were 71.1 percent, for Latinx students 55.5 percent, and for Black students 46 percent (Espinosa et al., 2019). This is decidedly mixed news: although Black and Latinx students are entering college at higher rates than they have in the past, they continue to complete their degree requirements at significantly lower rates than Whites and Asian Americans (Espinosa et al., 2019; Latino et al., 2020; Perna, L. 2013; Seidman, 2005). Identifying the institutional factors that may increase Black and Latinx students' retention is imperative for two reasons. First, providing the resources and environments that enable Black and Latinx students to finish their four-year degree prioritizes students' present and future development as educated citizens and workers. Second, the growth and long-term financial stability of HEIs in the New England Region (NER) can be significantly aided by the increased retention of Black and Latinx students because retaining a student may be far more cost-effective than recruiting a new one (Grawe, 2018).

Purpose of the Present Study

This study gathered enrollment, retention, the number of supportive programs, and financial aid data from three sources: the Integrated Postsecondary Education Data System (IPEDS), the Annual Survey of Colleges (ASC), and a characterized type of source known as the Wayback Machine to address the following research questions:

1. How does the number of supportive institutional programs impact the retention levels of Black, Latinx, and White students enrolled in NER HEIs?
2. How do higher proportions of need-based aid combined with NER HEIs' support programs impact Black, Latinx, and White Students' retention levels?

Using regression techniques and t-tests, our study finds that better-resourced HEIs have an advantage over less-resourced HEIs regarding retention. Specifically, the number of supportive programs and type of financial aid each HEI offers correlates to retention levels.

BRIEF LITERATURE REVIEW

Over the last 40 years, the Western Institute of Commission for Higher Education (WICHE) has analyzed data from the National Center for Education Statistics (NCES) to produce projections on the number of high school graduates within the United States (Bransberger & Michelau, 2016). These projections equip various stakeholders, including administrators of higher education institutions, with data about how the number of high school graduates is likely to change over time (Bransberger & Michelau, 2016; Bransberger et al., 2020). WICHE reported steady increases in the number of overall high school graduates between 2000 and 2013, after which the number plateaued. Due to changing demographics and the reduction of the traditional White student pool, the projected decline in enrollment is now driving HEI administrators and governing boards to strategize and create new enrollment and retention initiatives. A decrease in the birth rates of Whites, combined with shifting migration patterns, is changing the ethnoracial makeup of the U.S. population (Coelen, & Berger, 2006; Hoover, 2013; Prescott & Bransberger, 2012). By 2030, the number of White public graduates is expected to decrease further by 14 percent compared to 2013, and the total number of public high school graduates is expected to decline by about 120,000, or roughly 4 percent (Bransberger & Michelau, 2016). Research conducted by NCES and WICHE indicates that the most challenging impact of reductions in high school graduates will be on HEIs located in the Northeast and Midwest, a finding also supported by Grawe (2018).

Higher Education in New England differs from that of the national landscape of HEIs because New England is known as the pioneer of U.S. postsecondary education. In 2012, the New England Board of Higher Education (NEBHE) reported 250 HEIs. The New England Region (NER) consists of 16 percent of the nation's 4-year public institutions, 6 percent of 4-year private for-profit HEIs, and 43 percent of HEIs

enrolled between 1,000 and 4,999 in the NER. The region disproportionately has more 4-year private non-profit HEIs (56 percent compared to the national average of 33 percent). Notably, HEIs face mounting challenges as the number of high school graduates is expected to decrease between 2017 and 2032 by 15 to 20 percent in the (NER), which includes Massachusetts, Maine, New Hampshire, Vermont, Rhode Island, and Connecticut (Coelen & Berger, 2006; Bransberger & Michelau, 2016; Grawe, 2018; Lindsay, 2019).

Department of Higher Education studies shows that demographic changes will continue to negatively impact college sustainability in the NER if the higher education system does not find methods to increase college enrollment and completion levels for Black, Latinx, and underserved students (De Brey et al., 2019; 2016 Vision Project Annual Report). While NER HEIs were already contending with the negative economic impact of declining high school graduates, the COVID-19 pandemic has exacerbated the issue. Two recent reports predict that due to the financial shock of the pandemic, the number of HEIs in New England at risk of merger or closure in the next six years may double from an estimated 13 institutions to 25 (Fernandes, 2020; Osborn et al., 2020; Seltzer, R. 2018; Thys, 2020).

Abundant research has been conducted toward constructing a theory of student persistence, but there is still a deal of disagreement over such a theory's details. Areas of dispute include the methods of constructing a testable hypothesis of student departure and being able to guide institutions regarding retention practices that have indeed increased retention. Despite research efforts, retention levels have not changed much in the past 20 years.

The theoretical models of sociologists Tinto and Pusser are often cited as the foundation of student retention research. Tinto and Pusser provide a practical framework of value congruence and social support for identifying institutional practices that can lead to the increased academic and social integration of minority and non-traditional students, as well as to the identification and implementation of supportive programs that might help all students succeed in completing their degrees (Bean & Eaton, 2002; Grillo & Leist, 2013; Stephenson et al., 2020; Tate et al., 2015; Tinto, 2006; Tinto & Pusser, 2006; Wolf et al., 2021). Most recent research suggests that increasing supportive institutional programs such as New Student Orientations, Peer Mentorships, Academic Advising, Tutoring, Foodbanks, Supplemental Instruction, and Internships increases the retention of Black and Latinx students (Anderson, G. N., 1995; Eakins & Eakins Sr, 2017; Fowler & Boylan, 2010; Gaines et al., 2014; Hoyt, J. E., 2021; Hughes et al., 2011; Latino et al., 2020; McClain & Perry, 2017; Wibrowski et al., 2017). Prior research has investigated the types of supportive programs on retention levels; this study additionally suspects the following:

H1: HEIs that offer higher levels of supportive programming have higher retention levels of Black, Latinx, and White students than institutions that grant higher proportions of merit-based financial aid.

Other research studies suggest that increased offerings of need-based financial aid may increase Black and Latinx student retention (Anonymous, 2012; Doyle, 2010; Goldrick-Rab et al., 2016; Havlik et al., 2020; Long, 2012; Long & Riley, 2007; Lowry, 2019; Mechler et al., 2021; Stephenson et al., 2020). Thus, we predict:

H2: HEIs in the NER that award higher proportions of need-based financial aid versus higher proportions of merit-based aid will have higher retention levels of Black, Latinx, and White students.

RESEARCH METHODOLOGY

This study gathered and used data from the Integrated Postsecondary Education Data System (IPEDS), the Annual Survey of Colleges (ASC), and the Wayback Machine. First, IPEDS was used to gather institutional characteristics, enrollment, and graduation data by specific ethnoracial groups. Second, the ASC was used to identify each HEI's preferred type of financial aid (need versus merit). Lastly, the Wayback Machine was used to gather archival data from participating HEIs' websites to determine the number of supportive programs available to support student retention. What follows is a brief explanation of each data source.

The Integrated Postsecondary Education Data System

IPEDS is a system of interrelated surveys collected annually by the United States Department of Education (USDE) National Center for Education Statistics (NCES). IPEDS gathered information from every HEI participating in federal student financial aid programs and was first used to identify HEIs in the NER.

Specifically, purposeful sampling was used in this study – a technique involving the sensible selection of participants so that only those who are likely to satisfy the inclusion criteria for the study are selected (Creswell, 2009; Kerlinger & Lee, 2000). The study represents a significant portion of HEIs but is not a nationally representative sample. The analysis units are HEIs in the New England Area (NER), including Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. Only 4-year Public, For-Profit, and Non-Profit HEIs categorized as full-time, first-time, degree-granting, and primarily baccalaureate or above are selected as part of this analysis. Furthermore, only HEIs participating in federal student aid programs were included in this study. In all, one hundred-sixty-six (166) 4-year public and private, non-profit, and for-profit HEIs out of a national total of approximately 2,330 (7 percent)² were identified as meeting the research criteria (Table 2).

IPEDS was further used to gather the necessary data to calculate retention levels. HEIs participating in federal student aid programs must report enrollment and graduation numbers and rates by ethnoracial group as part of the Higher Education Act of 1965 to IPEDS. Graduation numbers and rates are calculated as the total number of completers within 150 percent of standard time divided by the graduated rate-adjusted enrollment cohort³. For example, the enrollment cohort 2000 will report adjusted enrollment numbers for cohort 2000 in 2006. Also, institutions report the graduation numbers for cohort 2000 in 2006 as required by IPEDS. However, the U.S. Department of Education's (USDE) reporting policies do not require HEIs to report retention numbers and rates by ethnoracial groups to the NCES (National Center for Education Statistics, April 2019). Retention numbers and rates are only reported at the institutional level. As such, for purposes of this study, enrollment and graduation⁴ data was extracted by Black, Latinx, and White ethnoracial groups from IPEDS into Excel for all 4-year public, 4-year non-profit, and 4-year for-profit HEIs located in the NER for cohorts enrolled between 2000 and 2012 to calculate a crude measure of retention levels for Blacks, Latinx, and Whites. For this research, the crude estimate was calculated by dividing the total number of revised enrollment numbers reported by the HEI for each enrollment cohort (2000–2012) by the total reported number of students who graduated from those enrollment cohorts.

Crude measures are relatively straightforward but are not exact and are only valuable for generalizing data. For example, if an institution reported 200 Black students enrolled in cohort 2000. They reported 180 Black graduation numbers for cohort 2000, the crude measurement of Black retention levels for enrollment in cohort 2000 would equal 90 percent (180/200). For each HEI in NER, we used this measure to estimate retention levels by ethnoracial group for all enrollment cohorts from 2000 to 2012. Regression models also included median retention levels as explanatory and response variables.

The Annual Survey of Colleges (ASC)

The College Board is a not-for-profit organization that collects HEI characteristic data via the ASC (CollegeBoard., 2019). The ASC is a web-based survey completed by nearly every accredited U.S. undergraduate college and university. Via the ASC, each HEI identifies as an institution that predominantly offers need or merit-based financial aid. HEIs that offer predominately need-based financial aid also report the average percentage of need-based assistance allotted per student (Annual Survey of Colleges 2019). Secondary institutional distribution of student financial aid data for all 166 NER HEIs was extracted from the College Handbook, a comprehensive directory of institutional characteristics compiled from the ASC (Vanderberg, 2015) and recorded in excel. The financial aid data collected was used to explore, identify, and categorize all 166 NER HEIs into two groups. Group 1 contained all NER HEIs identified as predominately distributing need-based financial aid to students. Group 2 included all NER HEIs identified as distributing predominately merit-based aid to students.

Digital Archive of the World Wide Web

The Wayback Machine is a World Wide Web digital archive founded by the Internet Archive (web.archive.org). The Wayback Machine was used to assess each NER HEIs website’s 2012-2018 archives to identify all the supportive programs offered at each of the 166 HEIs in NER. The list of supportive programs was examined to consolidate standard supportive programs (i.e., Advising, Mentoring, and Housing). NER HEIs were coded with ‘1’ for supportive programs identified and a ‘0’ for supportive programs not identified at the institution. The number of supporting programming data collected was recorded, coded, and maintained in an Excel workbook.

STATISTICAL ANALYSIS

This analysis aimed to understand the relationship between student retention in different ethnoracial student populations and factors identified as vital to student success. Statistical analysis was conducted using several statistical software programs (M.S. Excel, the Python stats models library, and Tableau visualization software). The methods are detailed in Table 1. The retention levels calculated from data gathered from IPEDS, the financial aid types identified using the Annual Survey of Colleges, and the raw count of supportive programs identified using the Wayback Machine were collected in a data table.

**TABLE 1
STATISTICAL ANALYSIS**

Hypothesis	Method	Explanatory/Predictor Variable of Interest	Response Variables	Data Source
H1: HEIs that offer higher levels of supportive programming have higher retention levels of Black, Latinx, and White students than institutions that grant higher proportions of <i>merit-based</i> financial aid.	Regression Analysis	<i>Count of Supportive Programs (ranges 0-4=0, 5-9=1, 10-14=2, 15-19=3, 20-24=4, 25+=5)</i>	Retention Levels of each ethnoracial group (Black, Latinx, White)	IPEDS, Wayback Machine
H2: HEIs that grant higher proportions of <i>need-based</i> financial aid have higher retention levels of Black, Latinx, and White students than institutions that grant higher proportions of <i>merit-based</i> financial aid.	Regression Analysis	<i>Aid (Need-based=1, Merit-based=0)</i>	Retention Levels of each ethnoracial group (Black, Latinx, White)	IPEDS, The Annual Survey of Colleges

The type of financial aid offered by the examined HEIs was categorized as predominantly merit-based (0) or predominantly need-based (1). The number of supporting programs was categorized into six ranges (0-4), (5-9), (10-14), (15-19), (20-24), and (>24). Separate regression analyses were performed using ordinary least squares for each ethnoracial category to examine the relationship between retention levels (response variable) and both the type of financial aid and the level of supportive programming (explanatory

variable). While a linear regression model explains the patterns in retention levels based on the explanatory variables of interest (financial aid and supportive programming), potential lurking variables such as university size and endowment may contribute to the patterns in retention. The linear regression analysis accounts for university size and endowment by including these control variables in the multiple regression analysis.

$$Retention_{Ethnoracial\ grp} = \beta_0 + \beta_1 * Funding + \beta_2 * Support + \beta_3 Endowment + \beta_4 * Size \quad (1)$$

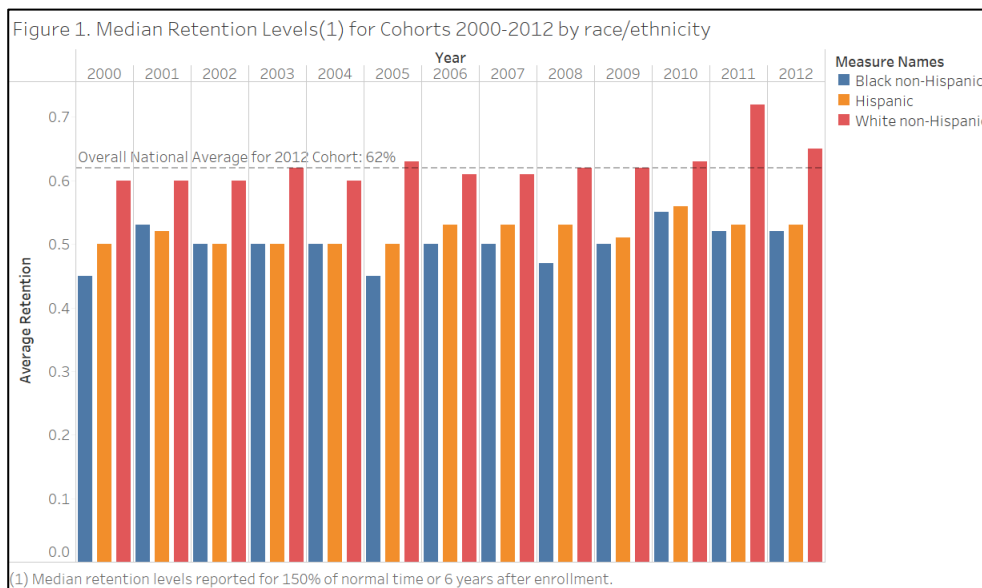
Variables found not to be statistically significant were removed from the model. The retainment of statistically significant control variables facilitates independent interpretations of the coefficients for the explanatory variables of interest, measuring their unique contributions to the behavior of retention levels when other variables were held constant.

Conventional model diagnostics, including assessment of multicollinearity (VIF<5) and normality and homoskedasticity of residuals, were performed to verify assumptions of linearity.

RESULTS

This research developed a method to estimate Black, Latinx, and White retention levels for all 4-year Public, For-Profit, and Non-Profit HEIs in the NER to identify retention patterns of each institution. Through descriptive analysis, the median retention levels, as presented in Figure 1, note that enrollment cohort 2012 with completion of six years ending in 2018, the NER retention levels for Black (52%) and Latinx (53%) students remained below the overall national retention level (62%), while White student retention levels were above the national retention level (65%).

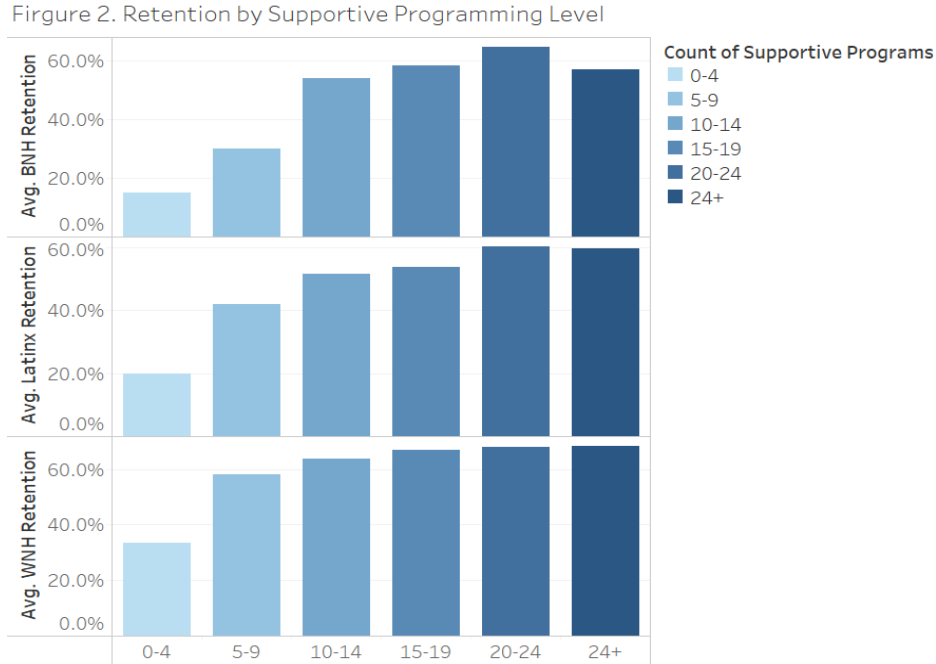
FIGURE 1
MEDIAN RETENTION LEVELS (1) FOR COHORTS 2000-2012 BY RACE/ETHNICITY



Supportive Programming Association With HEI Retention Levels in NER

As presented in Figure 2, exploratory data analysis of retention levels relative to the institution’s supportive programming suggests a noticeable increase in retention levels with a more significant commitment to supporting students, as indicated by the raw count of supportive programs.

FIGURE 2
RETENTION BY SUPPORTIVE PROGRAMMING LEVEL



A regression analysis was performed, focusing on supportive programming as the variable of interest to test H1 and quantify the estimated degree to which the number of supportive programs relates to retention within each ethnoracial student population.

$$Retention_{Ethnoracial\ grp} = \beta_0 + \beta_1 * Funding + \beta_2 * Support + \beta_3 Endowment \quad (2)$$

The regression results support the research claim that the number of supportive programs is associated with increased retention levels within each ethnoracial category, with Black students showing the most notable effect. Institutions offering higher numbers of supportive programming, e.g., 5-9 programs instead of 1-4 programs or 10-14 instead of 5-9, experience an estimated 3.6% to 9.2% increase in Black retention ($p < 0.001$). The analogous estimated effect is 0.4% to 6.8% for Latinx students and 3.9% to 7.2% for White students.

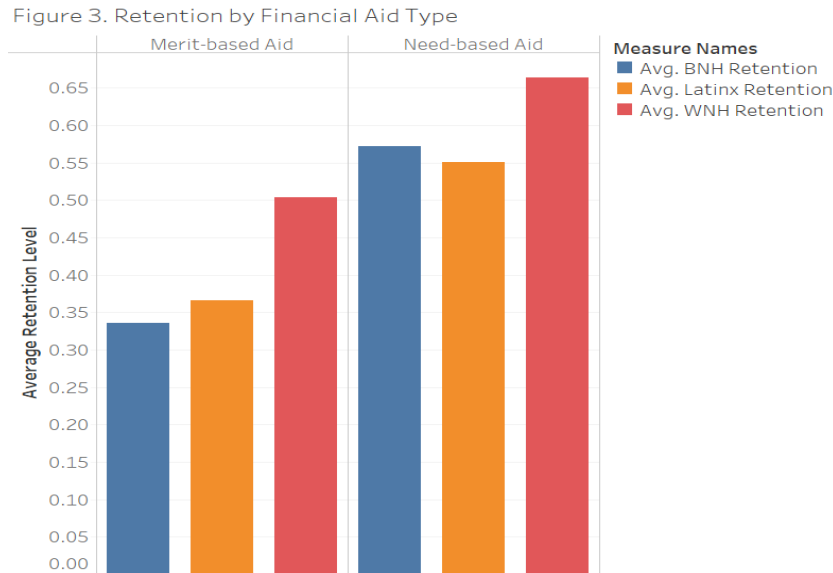
TABLE 2
REGRESSION ANALYSIS

Explanatory Variable of Interest	Response Variable	Estimated Coefficient	95% Confidence Interval	p-value
Count of Supportive Programs	Black Retention Levels	6.4%	3.6% - 9.2%	<<0.001
	Latinx Retention Levels	3.6%	0.4%-6.8%	<0.05
	White Retention Levels	3.2%	3.9-7.2%	<0.01

Financial Aid Association With HEI Retention Levels in NER

As presented in Figure 3, exploratory data analysis of retention levels relative to financial aid type reveals clear patterns indicative of an effect with higher retention in all ethnracial categories when the predominant type of financial aid is need-based.

FIGURE 3
RETENTION BY FINANCIAL AID TYPE



To test H2, HEIs that grant higher proportions of *need-based* financial aid have higher retention levels of Black, Latinx, and White students than institutions that grant higher proportions of *merit-based* financial aid; a regression analysis was performed a linear model was developed separately for each ethnracial group, BNH, Latinx, and WNH students, to estimate the change in retention level relative to the type of financial aid.

$$Retention_{Ethnoracial\ grp} = \beta_0 + \beta_1 * Funding + \beta_2 * Support + \beta_3 Endowment \quad (3)$$

The model controls for other factors (supportive programming, endowment, and institution size) suspected to be associated with retention. Both endowment (log-scaled) and supportive programming were statistically significant factors and were retained. It was found that institution size was not statistically significant and was therefore removed from the model.

The results support the research claim that the average retention levels for Black, Latinx, and Whites for HEIs offering predominantly need-based aid are higher than that for HEIs offering merit-based aid (p-values < 0.05). When endowment and supportive programming levels are held constant, it is estimated that HEIs that predominantly distribute need-based aid experience increases in retention in all ethnracial categories: Black (5.3% to 19.7%), Latinx (0.4% to 16.8%), White (1.2% to 14.9%).

TABLE 3
REGRESSION ANALYSIS

Explanatory Variable of Interest	Response Variable	Estimated Coefficient	95% Confidence Interval	p-value
<i>Type of Financial Aid</i>	<i>Black Retention Levels</i>	12.0%	5.3% - 19.7%	<0.01
	<i>Latinx Retention Levels</i>	8.5%	0.4%-16.8%	<0.05
	<i>White Retention Levels</i>	8.0%	1.2-14.9%	<0.05

Model Diagnostics and Performance

Model Performance

The linear regression models showed low to moderate performance with R-squared values of 51%, 37%, and 36% for the models predicting retention levels for Black, Latinx, and White students, respectively.

Linear Assumptions and Residuals

Model diagnostics were performed to assess the appropriateness of a multiple linear regression model for this dataset. Analysis of residuals for the full model confirms that the error terms are roughly evenly distributed around 0, displaying properties that confirm the assumption of normality.

Collinearity

The correlation analysis of the explanatory variables did not indicate high pairwise correlations, and the variance inflation factors were all below tolerance (<5). It was therefore concluded that the explanatory variables contribute independent information to the model.

LIMITATIONS

The principal limitation of our study is that the sample of the U.S. 4-year, public, private non-profit, and private for-profit HEIs population is limited to the New England region and is not a nationally representative sample. We caution against generalizing the results to HEIs outside the NER, even if they share similar institutional characteristics.

HEIs are not mandated to report retention levels by ethnoracial groups to the primary federal entity (NCES) responsible for collecting and analyzing educational data in the United States⁵. If detailed retention data by ethnoracial groups were reported for each HEI, our statistical and descriptive outcomes might differ, although it is impossible to say how. For this reason, we estimated “retention levels” of Black, Latinx, and White students as an indirect way of measuring student retention.

While we used the best data available to determine an institution’s indication of financial aid type, we acknowledge that HEIs self-report the type of financial aid predominately offered to students via the ACS. This self-report mechanism does not include validation of reported data, nor do we know how the data was compiled.

Lastly, while we counted the number of support programs offered at each of the 166 HEIs in the NER by using institutional websites, we did not test the impact the quality of supportive programs had on retention levels at each HEI. Institutional characteristics impacting the quality and effectiveness of supporting programming, such as dedicated support programming staff, funding, and institutional measurement of outcomes, likely contribute to the impact of retention levels.

DISCUSSION

Tinto and Pusser's theoretical model of institutional action posits that institutional commitment is one vital element of student retention and success (Tinto & Pusser, 2006). Research suggests that the degree of institutional commitment, such as student and financial support, influences students' retention (Tinto & Pusser, 2006). Research has identified various factors that impact the retention levels of Black, Latinx, and White students in postsecondary education. However, efforts have yet to be made to use HEI data to estimate the extent to which specific factors combined might affect student retention. This research provides an empirical base for more informed decision-making and resource allocation.

HEIs in the NER contend with a demographic storm with the realized knowledge of a shortage of White college-bound students (Bransberger & Michelau, 2016). In conjunction with this demographic storm, the outbreak of COVID-19 in 2020 has dramatically disrupted the higher education sector across the United States (Sullivan, 2020). HEIs in the NER are actively developing and executing strategies to increase college participation among Black and Latinx students in this region (Parnia, 2018). This study's research findings support the importance of HEIs in the NER; identifying the right mix of supportive programming and type of financial aid through strategic strategizing may be the 'key' to institutional financial survival and increase economic opportunities for Black and Latinx students who otherwise would not graduate without proper institutional support.

Our study finds that regardless of endowment or institutional size, the type of financial aid (merit vs. need-based) impacts the retention levels for Blacks, Latinx, and Whites in HEIs in the NER. Although there are costs associated with strategic change, this indicates a significant impact on retention levels when institutions predominately administer need-based financial aid and have an increased number of supportive programs.

We also find that HEIs with a higher number of supportive programs have higher retention levels for Blacks, Latinx, and Whites. When controlling for endowment and institutional size in the analysis, findings indicate an increase of 1-3 percent per program across all three ethnoracial groups. From a practical standpoint, HEIs will need to contemplate the availability of endowment funds and other institutional resources to determine if adding supportive programs is optimal for the institution. However, targeting the number and quality of supportive programs may effectively increase retention depending on the institutions' situation (Fowler & Boylan, 2010). HEI strategic strategies should include a cost-benefit analysis to measure the benefits of adding supportive programs and the rate-on-return, that is, the revenue and student successes generated with increased retention levels (Dunn & Sullins, 1982). HEI Administrators should remember that implementing any program element that increases student engagement and interaction with the institutional community can positively affect retention levels (Fowler & Boylan, 2010).

From a practical viewpoint, the importance of HEIs identifying the right mix of supportive programs and financial aid will directly impact retention levels of Blacks, Latinx, and Whites enrolled in HEIs in the NER. Congruently, our findings indicate that HEIs who offer both predominately need-based aid and have a high number of support programs have the most impact on retention levels. Thus, administrators and Higher Education decision-makers must gather institutional data to examine their supportive programs and type of financial aid to determine if strategic changes are beneficial to enhance Black, Latinx, and White retention of students. Furthermore, examining institutional supportive programming and type of financial aid data can help administrators and decision-makers develop the right strategic mix to benefit the institution's financial solidity.

Additionally, while HEIs report retention rates to the National Center for Education Statistics (NCES) at the institutional level, public data relevant to analyzing retention levels of HEIs by ethnoracial groups does not exist. This research identifies an opportunity to improve HEI reporting of retention data at the ethnoracial level to the NCES. The U.S. Department of Education has numerous grants available to HEIs designed to assist institutions in improving the persistence and retention of underrepresented students to graduation⁶. HEIs submit grant applications seeking federal funding to support the implementation of supportive programming designed to retain underrepresented students. HEIs supply various institutional data to support grant applications submitted to the U.S. Department of Education requesting federal funding

to improve underrepresented students' persistence and retention rates. Federal policymakers should consider requiring HEIs to report retention rates at ethnoracial levels to evaluate if funding distributed to HEIs to retain underrepresented students effectively achieves the outcomes intended for the grant. There is an opportunity to align better distributed federal grant funding to measurable outcomes, namely, students' actual retention rates by ethnoracial groups.

ENDNOTES

1. For this study, and following U.S. Census categories, White refers to non-Hispanic whites, i.e., a person having origins in any of the original peoples of Europe, the Middle East, or North Africa. Non-Hispanic Black or African American refers to a person having origins in any of the Black racial groups of Africa. Latinx refers to a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race as defined by the National Center for Education Statistics (<https://nces.ed.gov/ipeds/report-your-data/race-ethnicity-definitions>). In keeping with current cultural preferences, we use Latinx rather than Hispanic or Latino.
2. Source for degree-granting institutions with first-year undergraduates, by level and control of institution: Academic years 2000–01, 2012–13, and 2018–19: https://nces.ed.gov/programs/coe/indicator_csa.asp
3. <https://nces.ed.gov/pubs2017/2017046.pdf>
4. The IPEDS graduation rate (GR) is calculated as: $GR = \frac{\text{\# of students who completed their program within a specific percentage of normal time (6 years) to completion}}{\text{\# of students in the entering a specific cohort}}$ <https://nces.ed.gov/ipeds/use-the-data/survey-components/9/graduation-rates#>
5. National Center for Education Statistics (NCES): The mission of NCES is to collect, analyze, report, and disseminate education information and statistics <https://www.ed.gov/open/plan/nces>.
6. List of various HEI federal grant opportunities can be found at: <https://www2.ed.gov/fund/grants-apply.html?src=pn>

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