

STAYING AND GRADUATING:

An analysis of 4-year college/university attainment for underrepresented groups in the U.S.

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PROBLEM

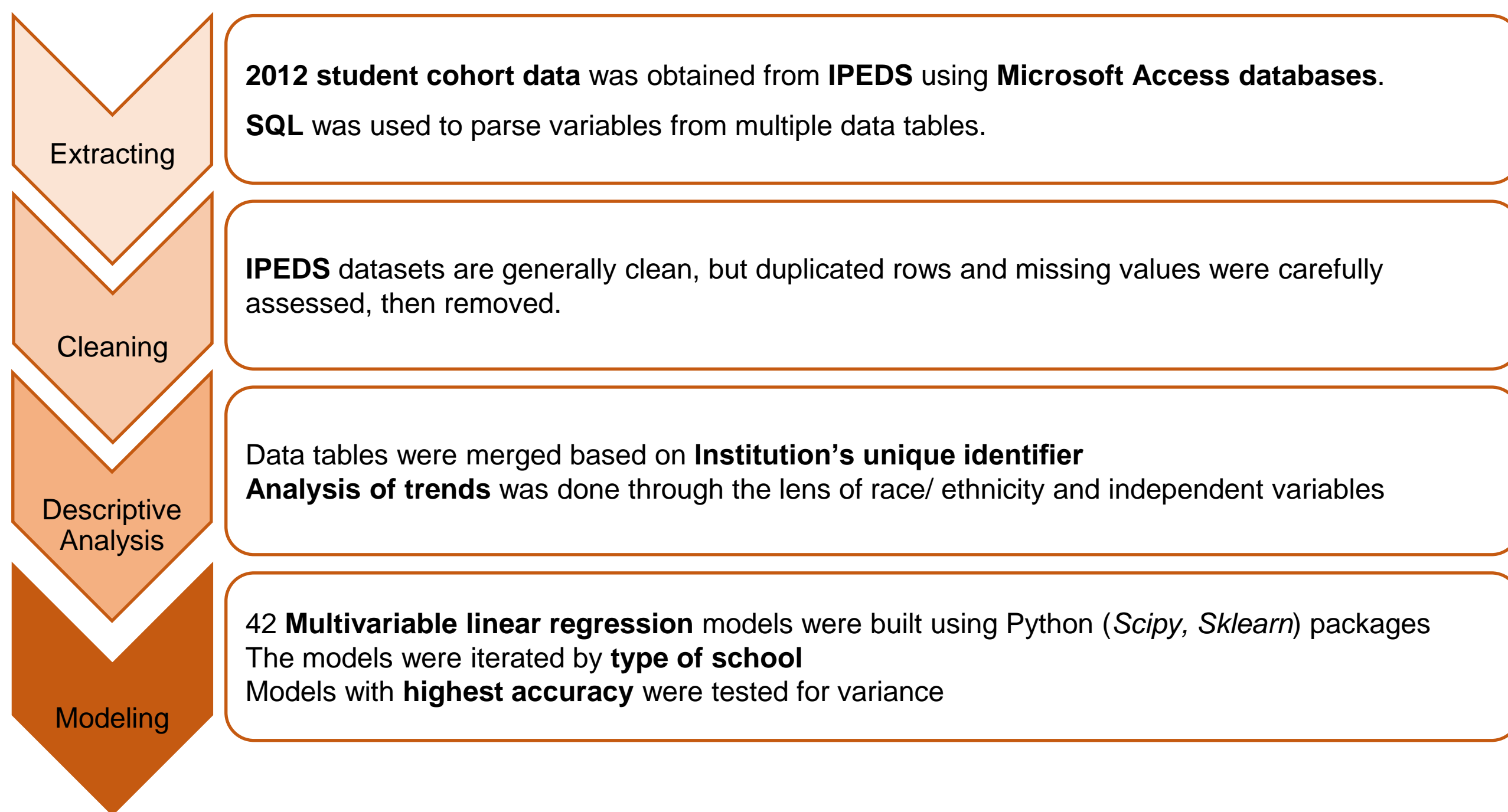
While education is commonly thought of as “the great equalizer,” minority students are disproportionately affected by varying barriers that impact their completion and quality of education.

Our Goal: Study the characteristics among select United States institutions that have a greater impact on graduation rates of underrepresented students.

RESEARCH QUESTION

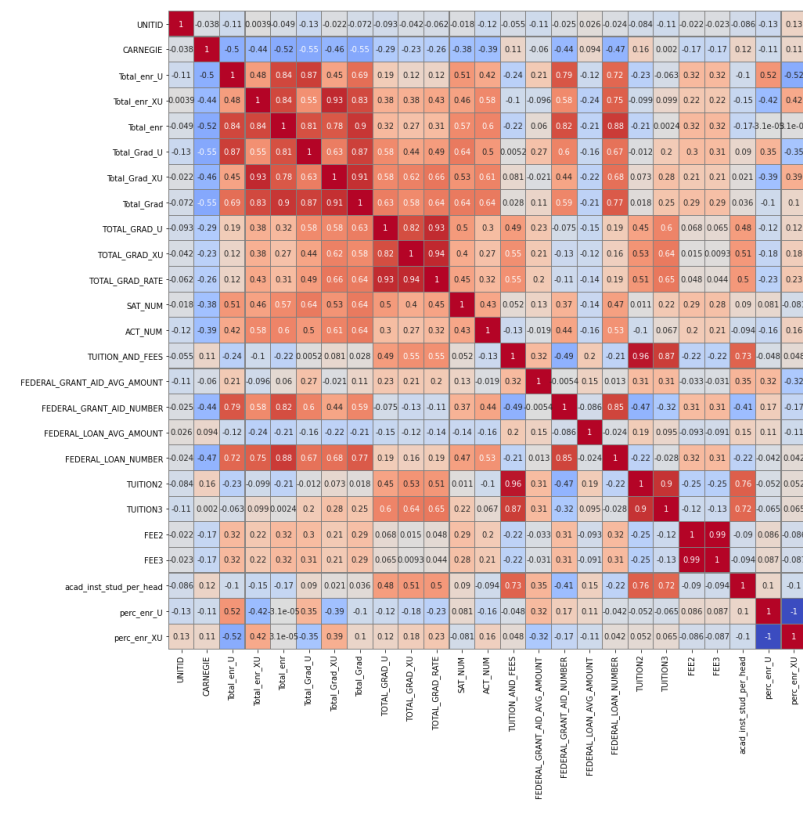
Among select United States institutions, what characteristics have a strong association with graduation rates of underrepresented students?

OVERALL PROCESS



KEY INSIGHTS

The variables that show the strongest correlation with the graduation rate of underrepresented groups are Tuition and Fees, expenditures, and number of submitted SAT and ACT scores.



In the U.S. underrepresented students have 25% less chances to graduate from 4-year college/universities

State location, type of school, region (specifically southeast), and carnegie classification have a strong influence in the graduation rate of underrepresented students.

Average Federal Loan amount is not significant in the prediction of graduation rates for underrepresented students.

Institutions with a higher number of students submitting SAT and ACT scores have a higher association with graduation rates of underrepresented students

The significance SAT and ACT variable varies by type of school.

Public Institutions

The model for Public institutions showed the strongest correlation and accuracy. It estimates that students who attend a public institution in NC, FL, or VA have 18%, 20% and 13% higher chance of graduating within 6 years

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'TOTAL_GRAD_U ~ ACT_NUM + SAT_NUM + TUITION_AND_FEES + CARNEGIE_CAT + acad_inst_stud_per_head + FEDERAL_LOAN_AVG_AMOUNT + np.sqrt(perc_enr_U) + REGION + STABBR'
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Private not-for-profit Institutions

Underrepresented Students who attend institutions classified as Schools of art, music, and design or Baccalaureate Colleges--Liberal Arts have a 40% and 46% higher chance of graduation

Institutions in the Plains regions have a higher association with the graduation of underrepresented students than other regions.

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'TOTAL_GRAD_U ~ SAT_NUM + TUITION_AND_FEES + CARNEGIE_CAT + acad_inst_stud_per_head + np.sqrt(perc_enr_U) + REGION + STABBR'
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NEXT STEPS AND RECOMMENDATIONS

For Prospective Students:

This dashboard can be used to determine which institutions within the chosen region have better student support services, average financial aid, and overall graduation rates of students from similar racial/ethnic groups. We suggest narrowing the search to a minimum of 5 institutions.

For Higher Education Institutions and Policy Makers:

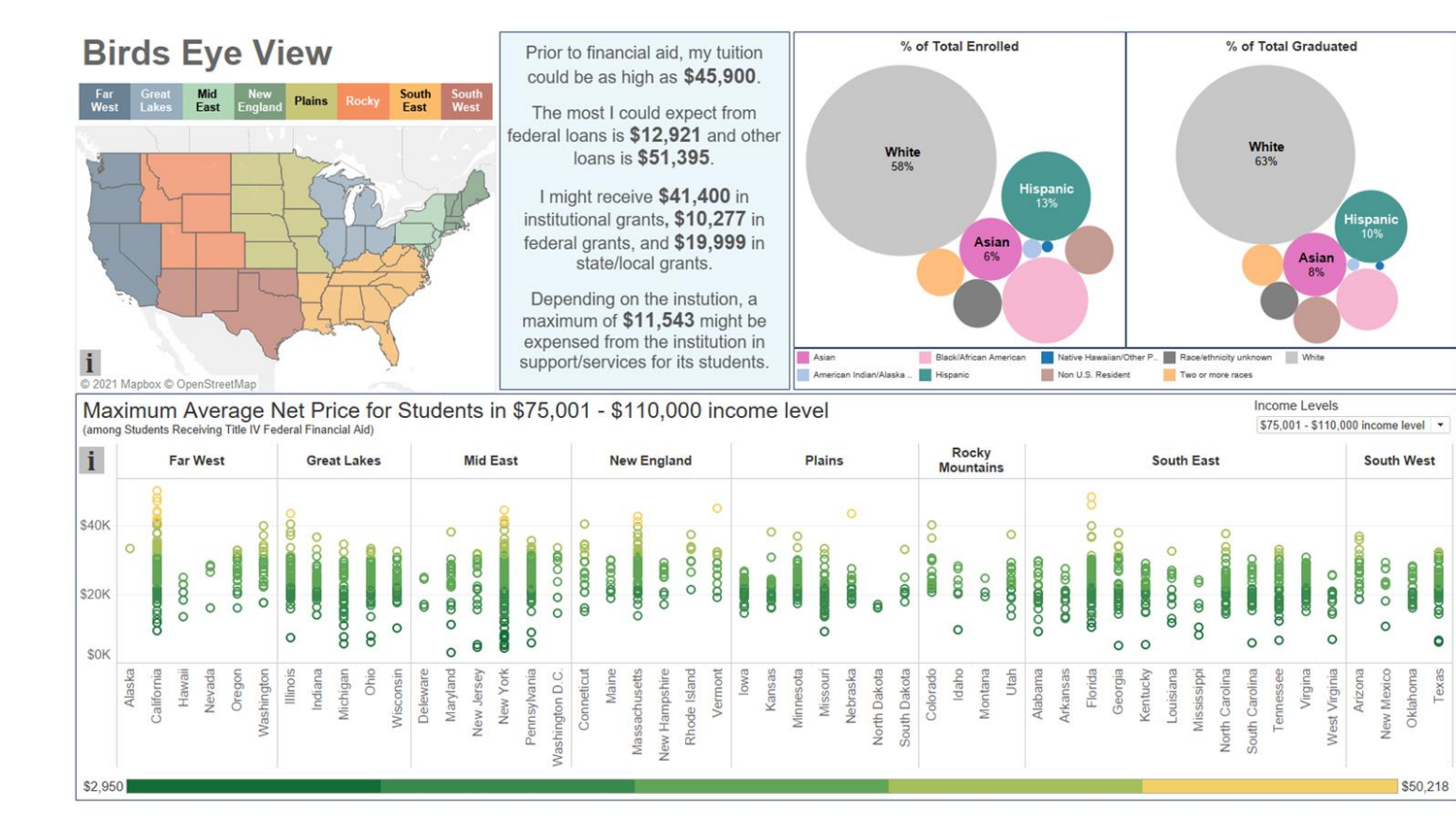
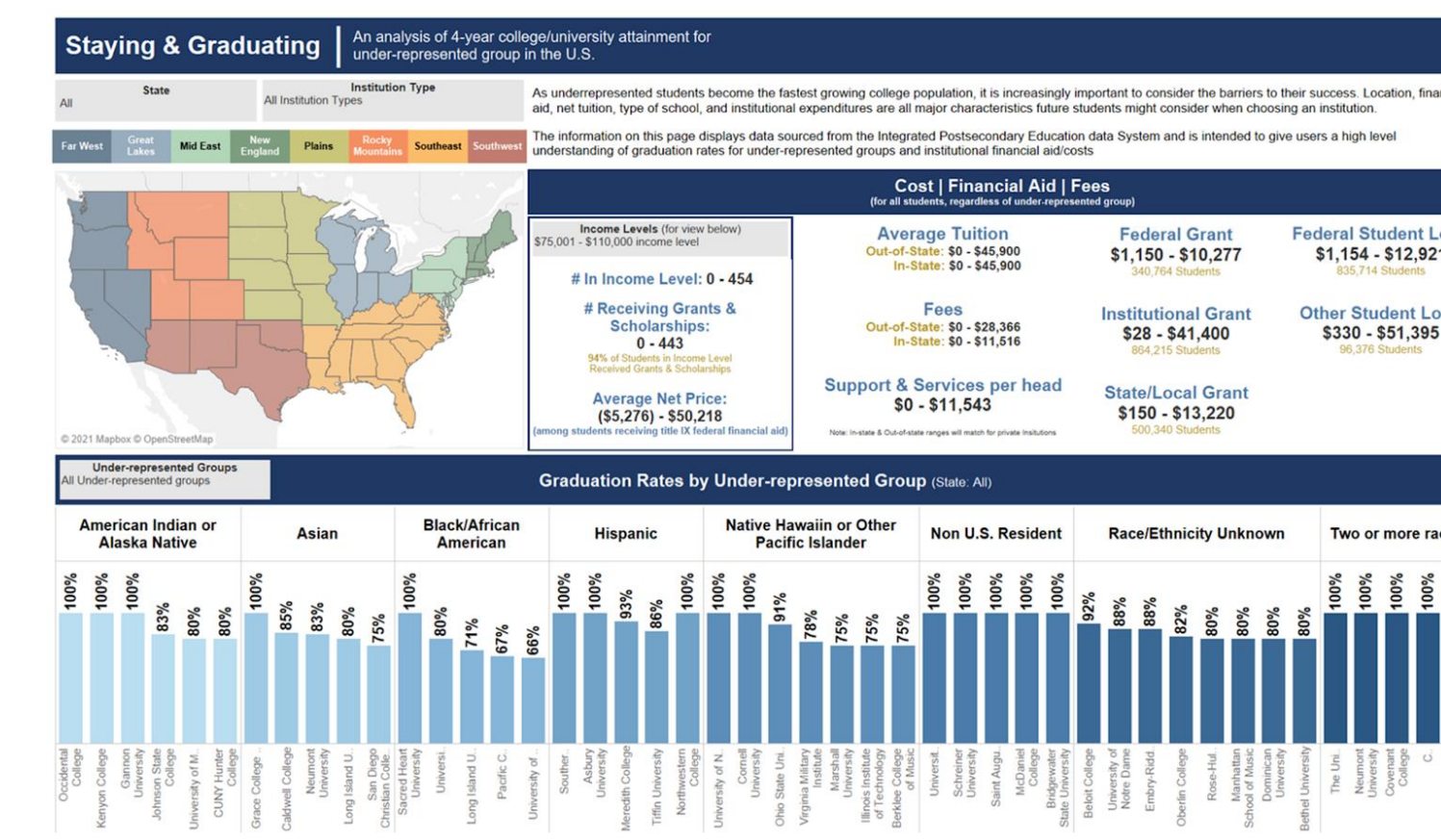
Recreate this study using student data to find the factors associated with graduation at your school.

Utilize this dashboard to anticipate questions about the institution's standing with peer colleges/universities.

Lower tuition and/or increase financial aid in the form of grants and scholarships.

Invest in student support services.

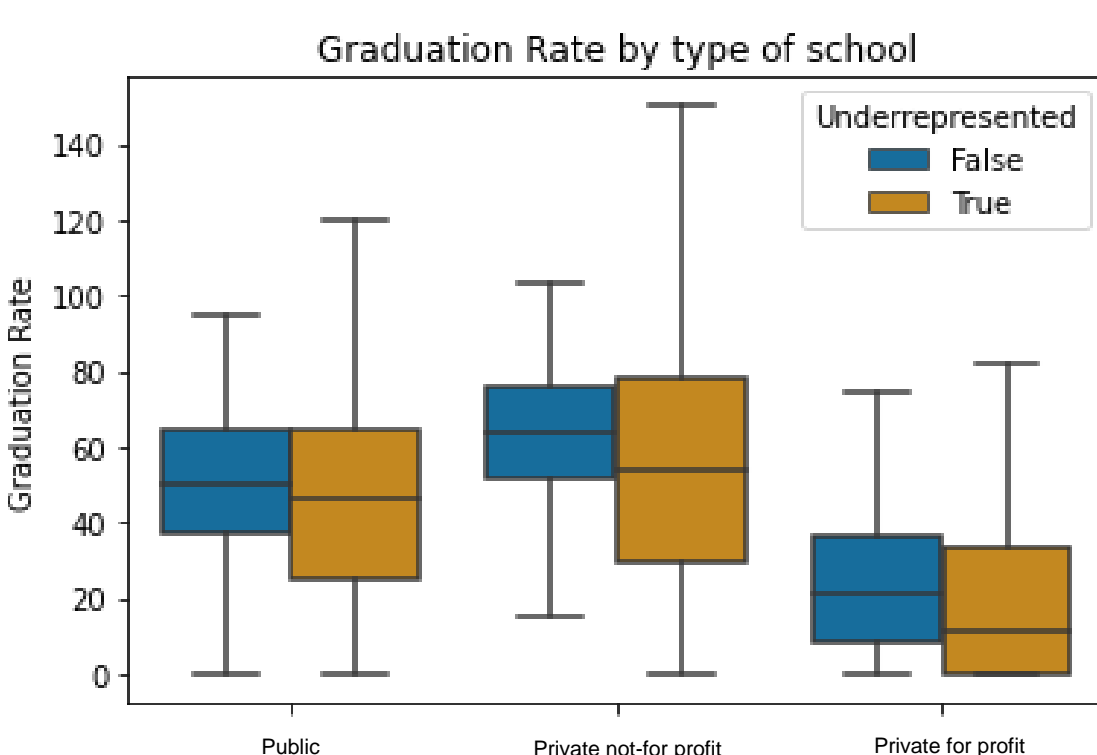
Offer more online options for degree completion to expand access to nontraditional students.



SECTOR

Hypothesis

If underrepresented students attend a public 4-year college, then the likelihood of graduation increases.



Reality

It was found that underrepresented students are more likely to graduate from private not for profit schools.

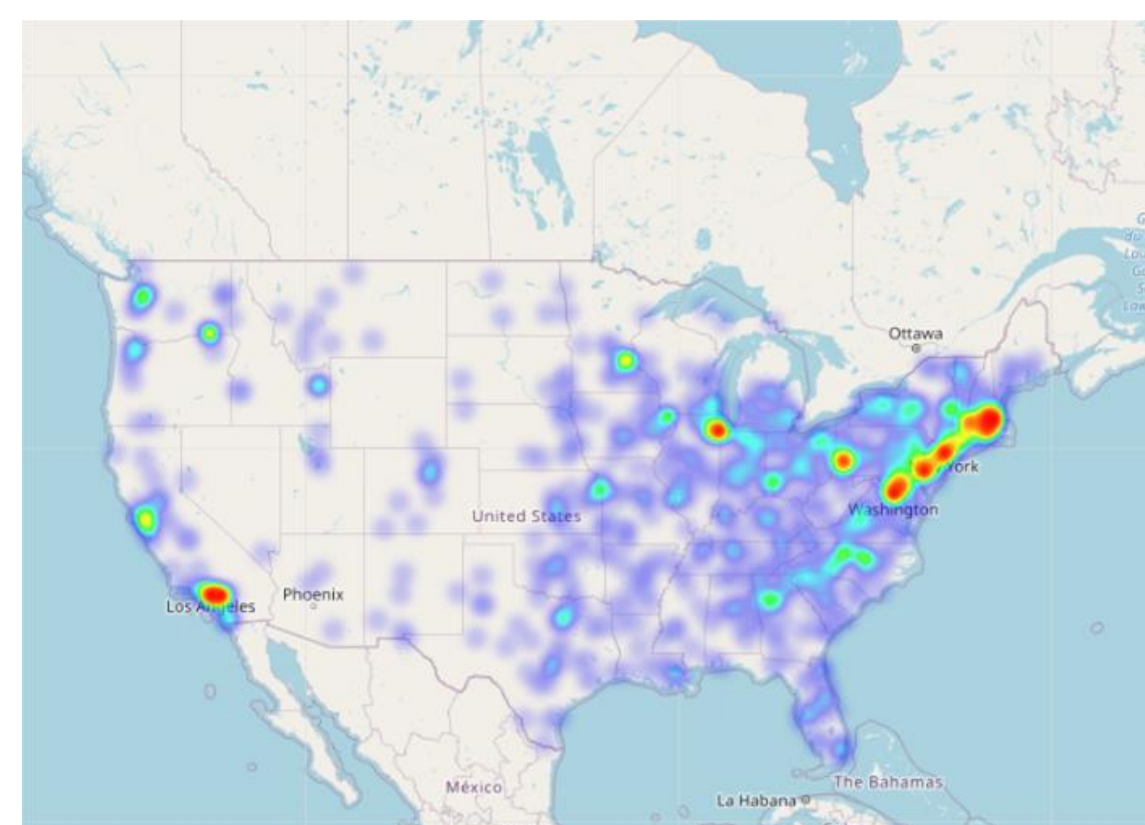
Also, Private for-profit schools have the lowest graduation rate for both represented and underrepresented groups.

Hypothesis not supported; disproved by the visualization.

LOCATION

Hypothesis

Compared to other geographical regions within the continental United States: If underrepresented students are enrolled at a 4-year college in the Plains region, then there is a negative relationship with the graduation rate.



Reality

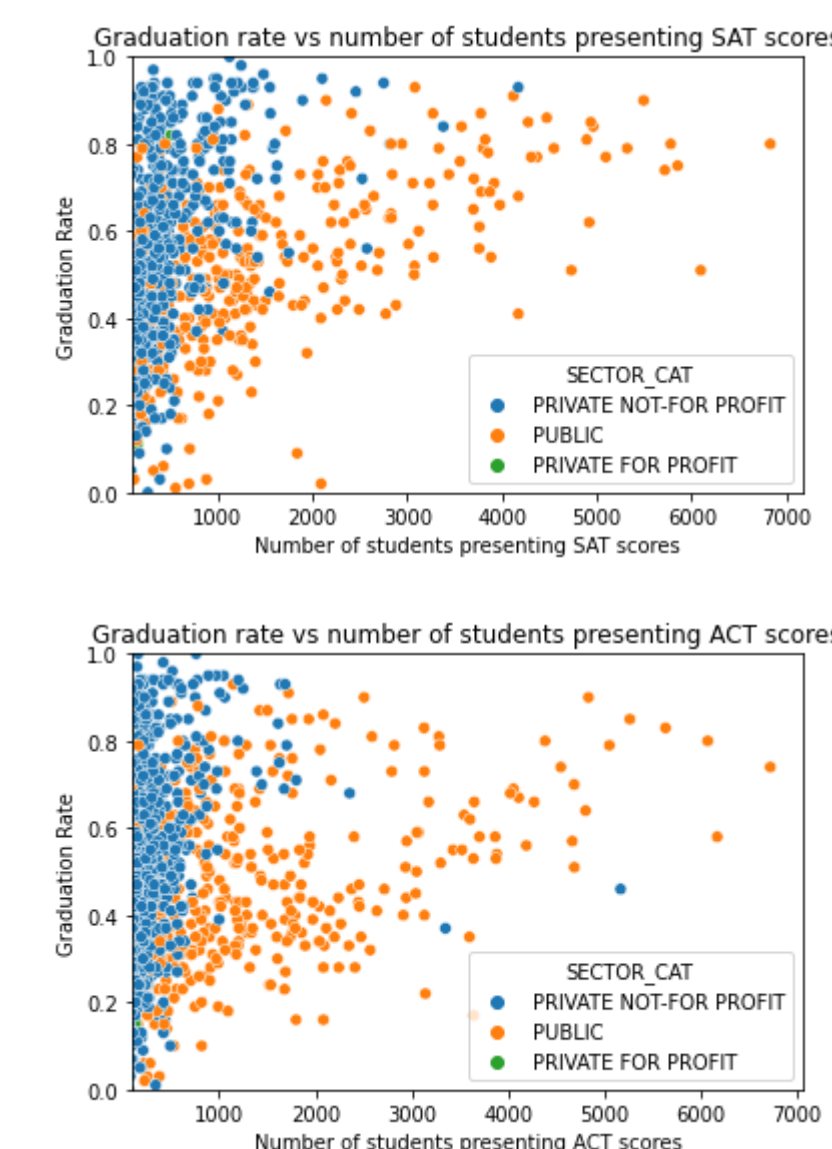
This map shows a higher concentration of schools with higher-than-average graduation percentages of underrepresented students along the coastline and throughout the south.

Hypothesis not supported: Underrepresented students have better chances to graduate from 4-year institutions located in the Plains region.

SAT/ACT SCORES

Hypothesis

If there is an increase in submission of SAT and ACT scores at 4-year institutions, then there is an increase in graduation rate among underrepresented students.



Reality

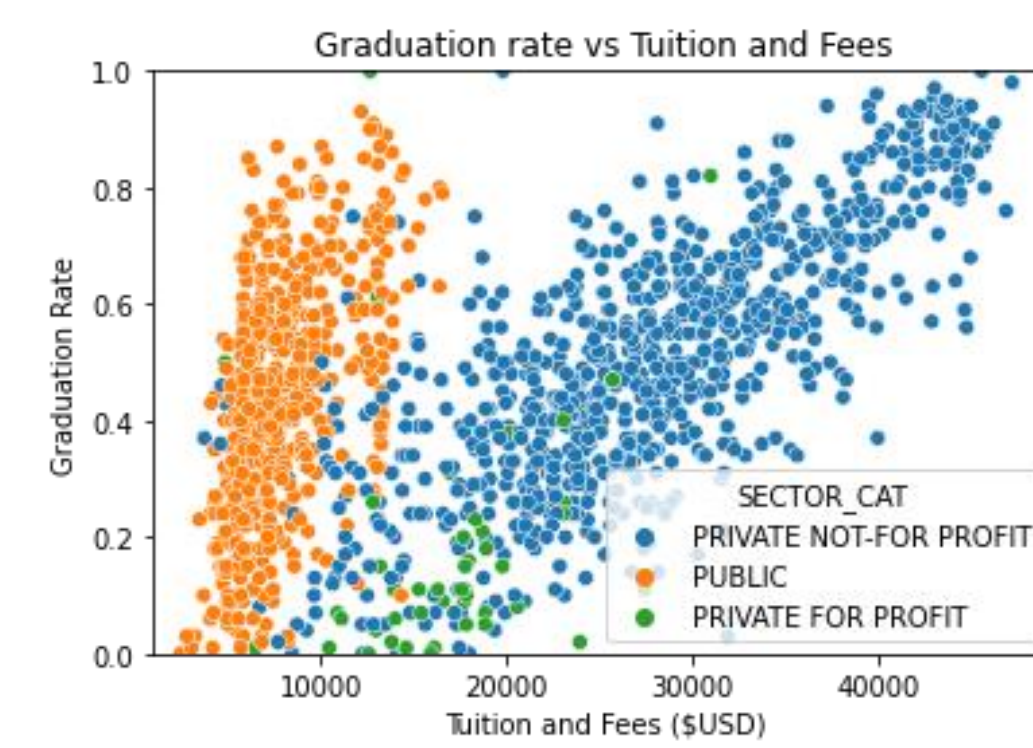
The hypothesis for SAT scores is supported, especially in Public schools. For ACT scores, there is not a defined correlation.

Hypothesis supported: Underrepresented students attending public or private, non-profit institutions that require standardized test scores upon admission experience higher rates of graduation.

FINANCIAL VARIABLES

Hypothesis

If there is an increase in tuition and fees at 4-year colleges, then there is a decrease in graduation rate among underrepresented student groups.



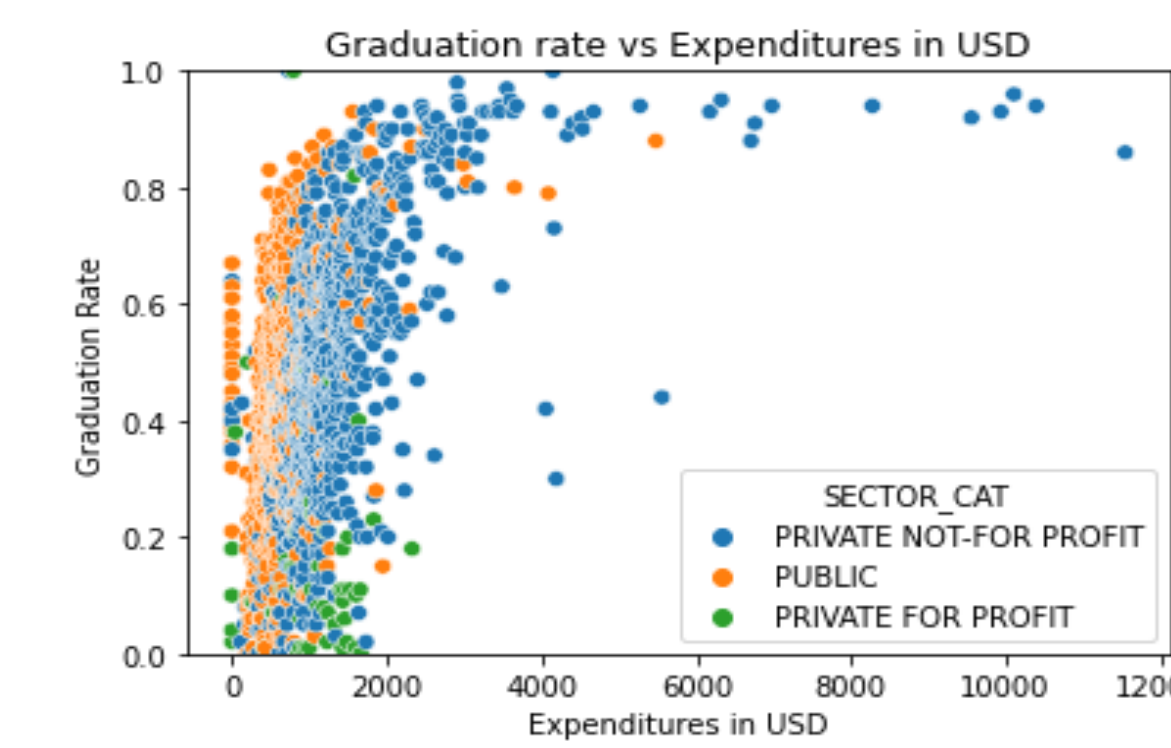
Reality

Despite the higher tuition and fees for private not for profit, underrepresented students are graduating at a higher rate than.

Hypothesis 1 not supported: There is a positive relationship between tuition and fees, and graduation rates of underrepresented students, especially at private non-profit institution.
Hypothesis 2 supported: Slightly increased graduation rates with higher institutional spending in private non-profit institution, but no connection in other types of institutions.

Hypothesis

If there is an increase in institutional spending on student services per student head at 4-year colleges, then there is an increase in graduation rate among underrepresented student groups.

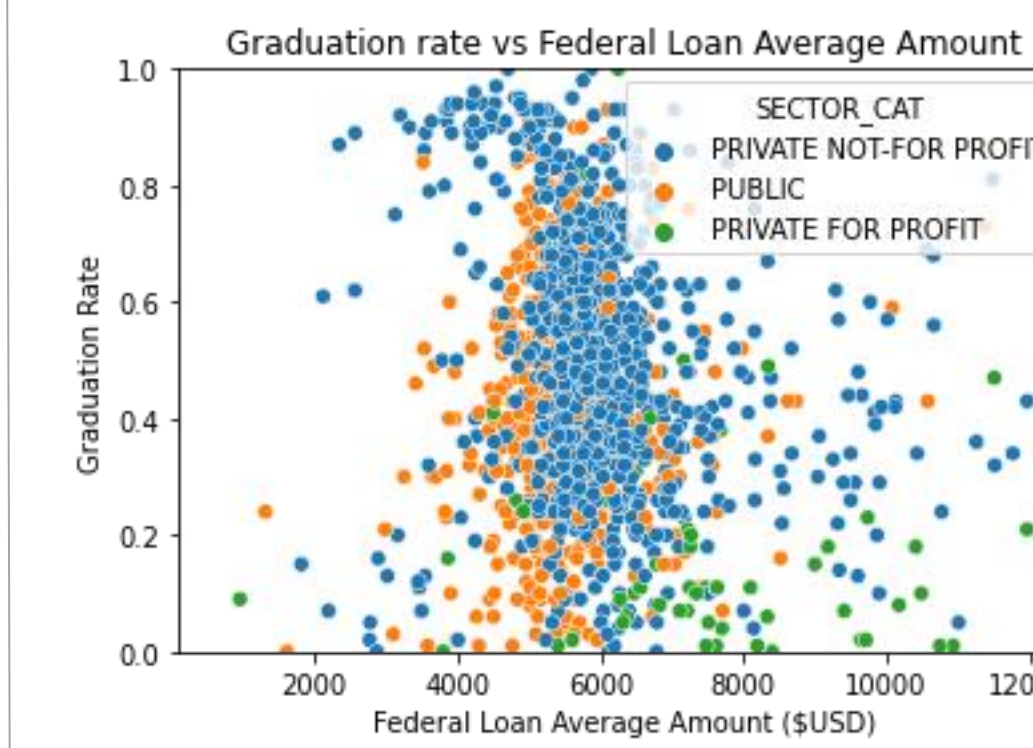


Reality

The hypothesis tends to be true at Private not-for-profit schools. However, for Public and Private for-profit schools, there is not a defined relationship

Hypothesis

If there is an increase in financial aid offered at 4-year colleges, then there is an increase in graduation rate among underrepresented student groups.



Reality

The graph does not show correlation between financial aid and graduation rate of underrepresented students.

This was tested with a correlation matrix which show a correlation of 0.19

Hypothesis not supported or unsupported: Graduation rates for private-not for profit slightly improve when grant aid is increased. Increased loan aid does not necessarily increase graduation rates.