

ECON 1000

Empirical Exercise #3 Submission Template

Due TUESDAY 10/10/2023, by 10am EDT on Gradescope

Gradescope Course Link: <https://www.gradescope.com/courses/565275>

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Narrative

For Public 4-year colleges in the state of New York that I decided to investigate, there were many interesting relations found between success and other variables. A strong positive coefficient was found in a multivariable regression of sticker price ($2.962e+00$) and endowment per student ($2.370e-04$), indicating that both the price and the endowment move in the same positive relation as students' success.

Unfortunately, some of the positive correlates of success turn out to be parents' income ($1.646e-05$) and schools' average sat scores ($6.305e-02$) which indicate selectivity. It's unfortunate because both don't have much to do with individual student's hard work or dedication during college but more about external factors. Also, unfortunately,

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Call:
lm(formula = success ~ access + grad_rate_150_p, data = colleges_4yr)

Residuals:
    Min       1Q   Median       3Q      Max
-38.833  -7.399   -0.856    6.699   57.710

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  11.29153    1.43062   7.893 6.45e-15 ***
access       -0.47683    0.05709  -8.353 < 2e-16 ***
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access and success move in different directions (-0.47683) in 4-year public colleges in New York, indicating a share of low-income students doesn't get access to the same level of success after college.

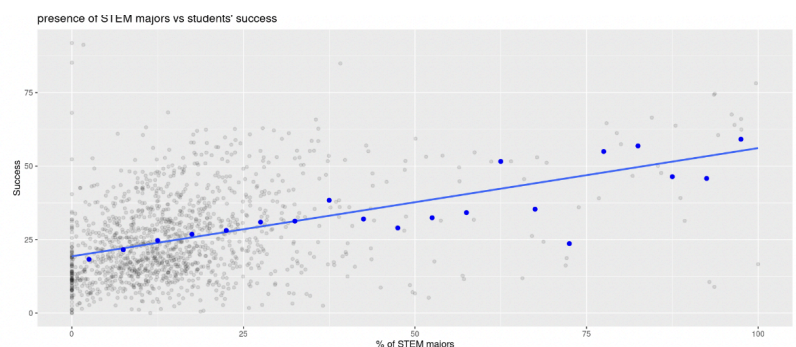
Straightforward, but still worth noting, is the positive correlation (0.35248) between graduation rate and success which makes sense as the more people graduate, the more are likely to get a job worth their degree.

Surprisingly, the multivariable regression of success in relation to female (-0.15757) and Hispanic student (0.02269) share of populations: both had very weak correlations, and while it's negative for female/success relation, the coefficient is so small that it's almost unrecognizable. It is promising that colleges in NY with larger female and Hispanic populations don't necessarily have lower success rates.

When I decided to look at the relationship between students' success and majors share in colleges in NY, there were many interesting findings. For the share of arts and humanities, the coefficient was very low (0.03065), indicating the absence of a strong correlation or dependency between the two variables. Very curious was the regression between success rates and share of major students because was negative (-0.1189), indicating that colleges with a significant presence of business majors and students' success move in different directions. Unsurprisingly, there is a positive correlation (0.36830) between stem majors share and students' success. Surprisingly to me, there was a positive correlation between social sciences major share and students' success which is very encouraging to someone pursuing a social science degree.

All multivariable regressions I ran had a very low p-value which affirms the coefficients in every case (while not necessarily proving that they are true but affirming the findings).

If compared to the findings earlier in the lab, NY Public 4-year colleges aren't that different with their success correlates. For the share of stem majors (0.226196), there is a similar



positive correlation thus indicating that both move in the same direction as students' success after selected college.

Unfortunately for all regressions run, it holds true that success and access go in different directions, indicating that for more low-income student population, the success rate goes down.

Overall, while I found many correlates that seem to be impacting students' success rates, it's unfortunate that many seem a product of generational wealth that impacts access, sat scores, chosen major, and other tracks which creates inequality and divide before and beyond college.