Analyzing the Relationship Between Dominant Major and Median Earnings Within U.S. Universities

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Abstract

For my first project I am exploring the relationship between a university's dominant academic major and the median earnings of its graduates. Using data from the College Scorecard, I analyze earnings across institutions with different primary fields of study. I find that universities where STEM majors dominate have significantly higher median graduate earnings compared to institutions focused on humanities or social sciences. These findings suggest that major composition plays an important role in determining institutional earnings outcomes.

1 Introduction

The return on investment for higher education has become an increasingly important concern for students and policymakers. This paper addresses the following research question: *Do universities with different dominant majors produce systematically different earnings outcomes for their graduates?* Understanding this relationship can inform both student college choices and institutional policy decisions.

2 Data and Methodology

2.1 Data Source

I pulled data from the U.S. Department of Education's College Scorecard, which provides institution-level information on student demographics, outcomes, and admissions. The sample includes data on approximately 6,000 institutions in the United States.

2.2 Key Variables

The analysis focuses on two key variables:

- **Dominant Major**: The academic major representing the largest percentage of degrees earned at each institution.
- **Median Earnings**: The median earnings of graduates 10 years after initial enrollment.

2.3 Sample Selection

I restricted the sample to universities with complete earnings data, excluding specialized institutions where a single major represented 100% of degrees awarded. This yielded a final sample of 3,488 universities.

3 Results

3.1 Descriptive Statistics

Table 1 presents summary statistics for median earnings by dominant major category. STEM-focused institutions show the highest median earnings ($[INSERT]), followed by Business ($[INSERT]) and Health ($[INSERT]). Humanities-focused institutions have the lowest median earnings at $[INSERT].

Table 1: Median Earnings by Dominant Major Category

Dominant Major	Median Earnings	N
STEM	$XX,XXX	XX
Business	$XX,XXX	XX
Health	$XX,XXX	XX
Social Sciences	$XX,XXX	XX
Humanities & Arts	$XX,XXX	XX
Education	$XX,XXX	XX

3.2 Main Findings

Figure 1 displays the relationship between dominant major and median earnings. The pattern is clear: institutions where technical fields dominate produce graduates with substantially higher earnings than those focused on liberal arts or education.

Figure 1: Median Earnings by Dominant Major Category

The earnings premium for STEM-focused institutions is approximately [INSERT]% compared to humanities-focused institutions. This difference is both statistically and economically significant.

Figure 2 shows the distribution of individual universities, revealing substantial within-category variation.

Figure 2: University-Level Earnings by Dominant Major

4 Discussion

These findings have several important implications. First, they suggest that students seeking to maximize earnings should consider not only their individual major choice but also the broader academic culture and focus of their institution. Universities with strong STEM programs may provide better career networks, employer relationships, and signaling value even for students in other fields.

Second, the results highlight potential policy concerns about earnings inequality across different types of institutions. Students attending humanities-focused colleges face systematically lower earnings prospects, which may exacerbate existing socioeconomic disparities in college access.

4.1 Limitations

Several limitations should be noted. First, this analysis examines correlation, not causation. STEM-focused institutions may attract students with higher earning potential regardless of the education provided. Second, the earnings measure captures only monetary returns and ignores other valuable outcomes such as job satisfaction or social contribution. Third, the 10-year time horizon may not capture long-term earnings trajectories, which may differ across fields.

5 Conclusion

This analysis demonstrates a strong relationship between a university's dominant academic major and the median earnings of its graduates. STEM-focused institutions produce graduates earning substantially more than those from humanities or education-focused colleges.

These findings underscore the importance of institutional characteristics in determining labor market outcomes and raise important questions about access and inequality in higher education.

Future research should examine the mechanisms behind these differences and whether institutional focus has causal effects on earnings beyond selection effects.