EPLORATORY DATA ANALYSIS IN COLLEGE MAJOR

Course: ALY 6070

Name: Yuanying Li

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1.INTRODUCAITONS:

Going to college provides an opportunity to not only earn a degree, but also boost your earning potential in the real world. When somebody tells you they are headed to a college or university, whether it's for an associate degree, bachelor's degree, master's degree, MBA or PhD, the first question out of everybody's mouth is 'Where are you going to school? In reality though, the choice of major can have a much bigger impact on your future earnings than the school you attend. And here is some information we could get from some datasets.

2.DATASETS:

There are 5 datasets, which are all-ages, grad-students, major-list, recent-grads, and women-stem, and we could explore them respectively.

2.1 major-list

In this dataset, there are 174 specific majors, which belong to 17 different major categories.

2.2 all-ages

The dataset has a deeper exploratory about the total number of each major and the amount of employed and unemployed corresponding to each major. Finally, to get a sense of the ranges of outcomes, it helps to look not just at the median wage but at the 25th and 75th percentiles.

Most and least popular majors and corresponding earnings:

- Business management and administration is the most popular major, there are 3,123,510 people choose field as their college major. For this major earn $ 58,000 at the median and their earning range from $40,000 at the 25th percentile to $85,000 at the 75th percentile. Followed by General Business, Accounting, and Nursing, the median earnings are $60,000 and $63,000, respectively.
- The least popular majors include Military Technologies($64,000), educational administration supervision($58,000), and school student counseling($41,000).

- It doesn't mean that popular major could earn more money in statistic, for example, although there are just 4315 graduate students in Military Technologies, comparing with the large number of Business major.

2.3 recent-grads

This dataset focus on graduate whose ages is less than 28 years old, and it has a some new features, like different gender concentration by major, different form employment and the number of college job and non college job in each major.

Gender concentrations by major

- Early childhood education is the major with the highest proportion of women. It is followed by medical assisting services, and communication disorders sciences and services.
- The majors in which women are most heavily concentrated are almost exclusively in the education and health fields.
- The majors with highest proportion of men are Naval Architecture and Marine Engineering, and Mechanical Engineering and related technologies.
- The top 10 majors with the highest proportion of men are in the Engineering and Industrial Arts and Consumer Services majors.

2.4 grad-students

The dataset contains the details on graduate school attendees. It list two different categories, those are graduate or nongraduate situation.

Most and least popular majors and corresponding earnings:

- Some majors are more likely to obtain a graduate degree than others. The majors with the highest rates of graduate degree attainment include: School Student Counseling, Educational Administration and Supervision, Health and Medical Preparatory Programs. And it is different situation on graduate, Psychology is the biggest number of program that graduate would choose, but the median wage is just 64,000, it is not a very high income job though they are the graduate in this program.

2.5 Women-stem

Highest-and lowest-earning Majors: Women

- Female Bachelor's degree holders earn the most with a Petroleum Engineering (median $110,000), followed by Mining and mineral engineering.
- Female bachelor's degree holders earn the least in zoology (median $26,000) followed by communication disorders science and services.

3.SUMMARY:

- Beware of Earnings Variation

Yet another complication is earnings variation. For example, earnings at the 25th percentile for ASTRONOMY AND ASTROPHYSICS is $44,000, but earnings at the 75th percentile for the same major is $31,500—a difference of $109,000.

- Not all STEM majors are equal