

# An Age-based Analysis of College-to-Career Path.

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## Introduction

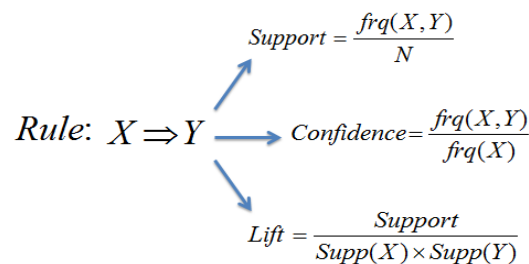
- A lot of students struggle deciding on their majors and understanding the career paths a specific major is connected to.
- We are looking to help students make more informed decisions on their choice of major.
- The question of the research is to understand the strongest associations between majors and occupations.
- Another goal of the research is to understand which majors are changing in importance between people under and over 30.

## Methods: Data Collection

- Data from the American Community Survey was collected and used for this research.
- The ACS is a nationwide survey that collects and produces information on social, economic, housing, and demographic characteristics about our nation's population every year.
- Data was used from Minnesota and Wisconsin.
- Over 100 thousand data points were collected
- Data was filtered to only include people who had completed a bachelors program, no more no less.
- Individuals with a large amount of missing data were also removed.
- After these filters were applied over 15,000 data points were used.
- Data was separated into 2 groups for people over 30 and people under 30.

## Methods: Analysis

- Market Basket Analysis was used to uncover the strength of associations between items.
  - Looked for association between field of study and occupations.
  - Occupations grouped into categories to increase strength of relationships.
- 2 Sample test was used to test for differences in proportions of a field of study with people under and over 30. (Figure 1)



https://bocerner.com/2015/07/22/what-the-hell-are-association-rules-in-analytics/

Figure 1: A visual display of how market basket analysis measures association strength.

## Results: Associations

- Majors such as education, finance, criminal justice have strong associations with certain occupation types.
- Large lift doesn't necessarily mean large confidence.
- No matter what major a person chooses, in most cases, they can end up in a variety of occupations.

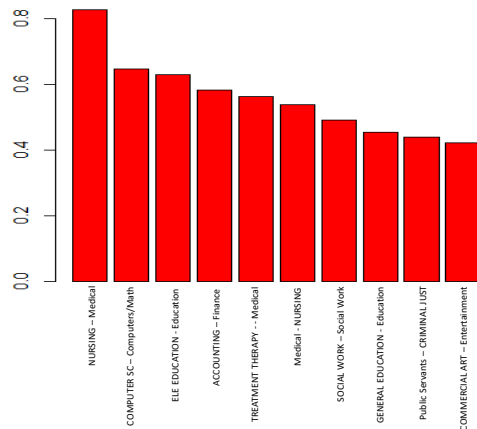


Figure 2: The top 10 associations by confidence. Majors are in all caps, occupation types are in normal case.

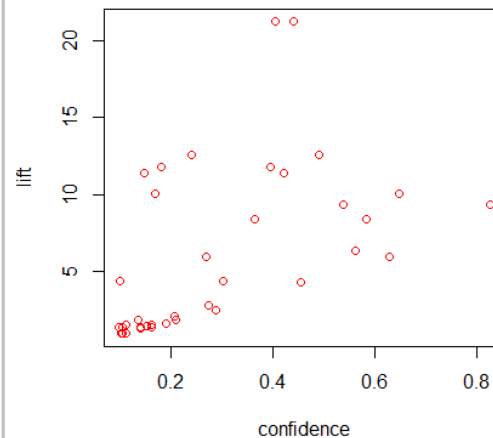


Figure 3: Large lift doesn't necessarily mean large confidence.

## Results: Age Based Analysis

- 2 Sample test is used to test for differences in proportions of a variable within two populations.
- Population was separated into over and under 30.
- Majors such as education, accounting, and electrical engineering have seen considerable decreases.
- Increases in sciences and in some arts. In general, people are moving to more specific majors.
- These changes are expected as people move away from low paying education jobs and towards high paying stem positions.

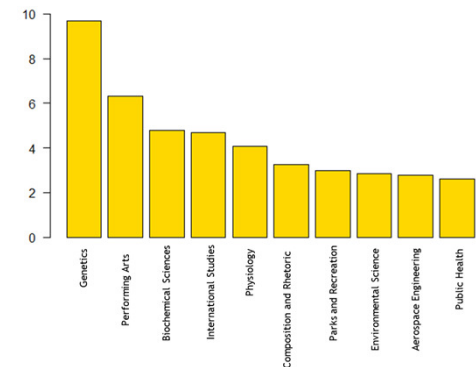


Figure 4: Largest ratio increase in majors.

## Conclusion

- No matter what major you choose you can end up in a wide variety of occupations.
- In the future, further research could be done to model how the associations weakened as people get older
- Students are moving away from education and business and towards STEM and Arts.
- In the future, jobs could be categorized to produce a better understanding of the big picture.
- Suggestions? [brisbia@uwec.edu](mailto:brisbia@uwec.edu) or [larsonnd@uwec.edu](mailto:larsonnd@uwec.edu)

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