

# **Advising the AFL-CIO on How to Slow the Rate of Attrition from America's Labor Unions**

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## **Abstract**

The goal of this project was to create a potential data science solution to the problem of decreasing union membership and pitch that idea to the AFL-CIO (who would most benefit from this) with a well-thought out business proposal. The nature/value of this project was proven using data visualization, and future data science and business steps to be taken were outlined in a powerpoint presentation.

## **Design**

The idea of this project came to me after seeing increased demand for better treatment of workers as places begin to open up again after COVID. Americans have generally had a positive view of workers' rights (such as \$15 minimum wage) and unions themselves after about 2010, yet union membership is steadily on the decline throughout America. The AFL-CIO advocates for the majority of unions in the US, so I'd like to help them decrease their attrition rate by focusing on features such as demographics and state legislation to create a time-series model, and the features that most impact the target value of attrition can be investigated.

## **Data**

The main dataset was from Kaggle, and it included over 6000 rows with 10 features. The data detailed the private, public, construction, and manufacturing sectors for every state from the years 1983 to 2015. The features included total sector employment, employees who were members of unions, and employees who were covered by collective bargaining agreements. The percent of employees in unions per state per year was calculated, as well as the rate of change of union membership. Data on the approval/disapproval of unions by the general public was also found from 1936 – 2020.

## **Algorithms**

The data was cleaned, explored, and analyzed in Excel using equations such as SUMIF, VLOOKUP, AVERAGEIF, etc. Tableau was used to create multiple line charts and a hover map of the United States that displayed the created line charts.

## **Tools**

- Exploratory data analysis in Excel
- Visualization in Tableau

## **Communication**

All visuals are embedded within the slides and also contained in Tableau workbooks (local and public), which are attached in the GitHub repository and will be presented.

Link to tableau:

<https://public.tableau.com/app/profile/maira.asmat/viz/UnionStates/HoverMap>