



# TUN Data Challenge

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INFO 320





# Problem and Motivation

- **Is there a relationship between a client's demographic profile (rank, branch, time in service, spouse status etc.) and a client's likelihood to complete a survey?**
- **Surveys are important for all businesses for feedback on their service. Hire Heroes request each customer to complete a survey when they have found employment. Our goal is to analyze the data to see if demographics have a say in survey completion. If they do, this data will better assist Hire Heroes in targeting those who do not complete the survey with reminders, incentives, etc.**



# Summary/Approach

- Determine necessary datasets
- Utilize Tableau Prep to clean datasets
  - Null values
  - Excess columns
- Create various decision tree models using Knime to see what are the key determinants of survey completion
- Use Tableau to visualize the data
  - Race
  - Branch of Service
  - Employment Status
  - Education

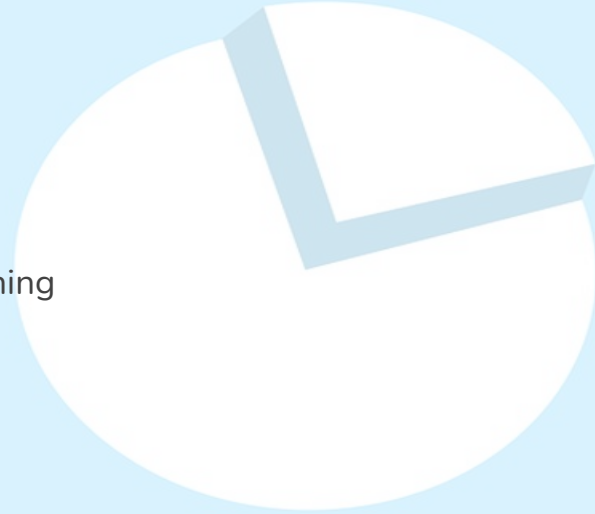




# Tools and Analytics

Tableau, Tableau Prep, and Knime were used.

- Tableau Prep - Data cleaning and table joining
- Tableau - Visualizations
- Knime - Decision Tree Model





# Datasets

- The “Salesforce\_Survey\_Demographics.xlsx” and “Feedback\_c.csv” spreadsheets were used and combined using the “Id” column as the primary key.

survey_co...	NO	YES
NO	13933	0
YES	0	12601

Correct classified: 26,534	Wrong classified: 0
Accuracy: 100 %	Error: 0 %
Cohen's kappa (κ) 1	

Surveys Complete

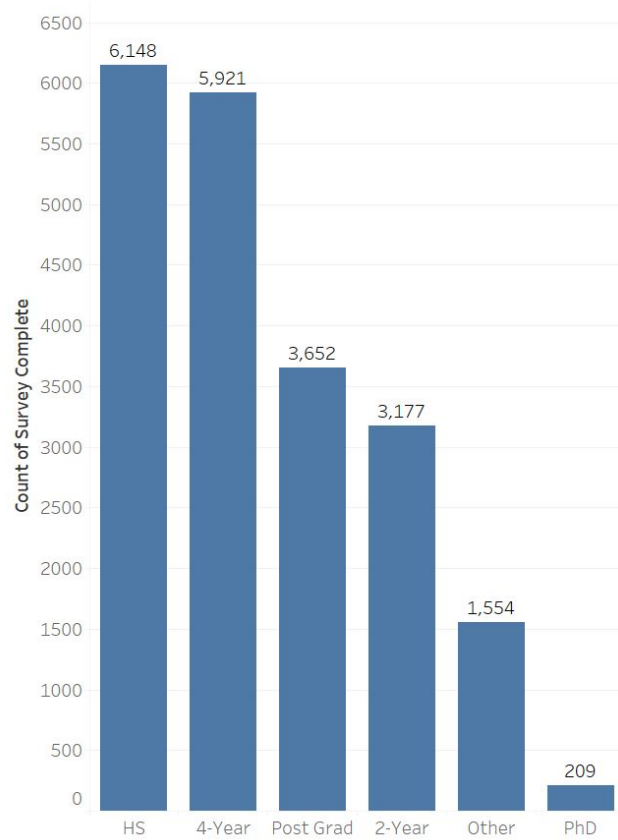
Survey_Co...	NO	YES
NO	96924	1
YES	2	12611

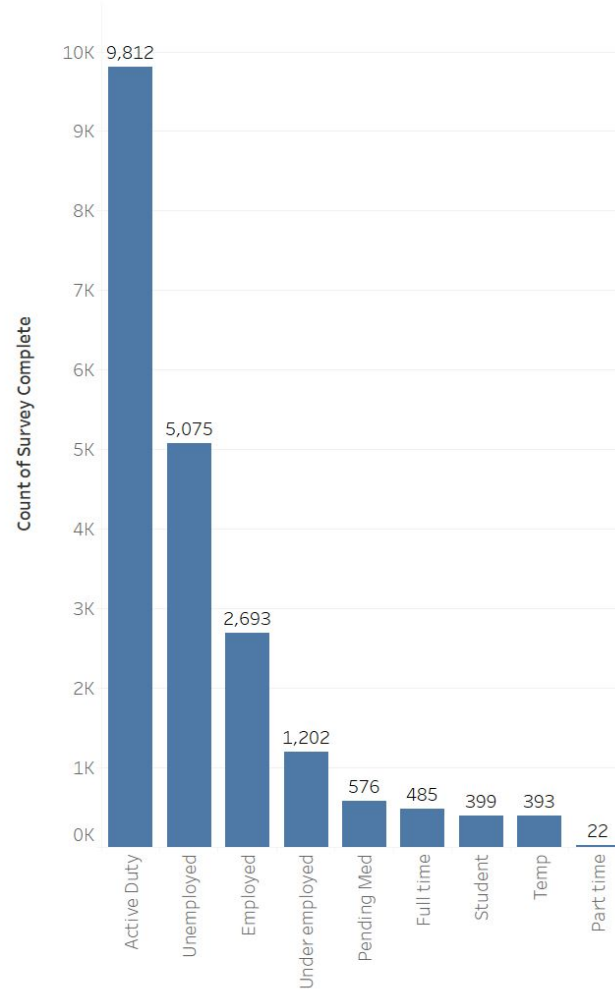
Correct classified: 109,535	Wrong classified: 3
Accuracy: 99.997 %	Error: 0.003 %
Cohen's kappa (κ) 1	

Surveys Complete\_No Race

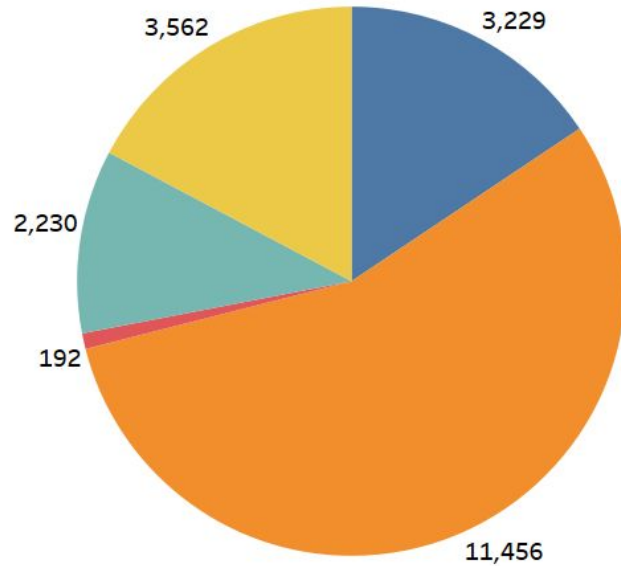
Survey Completion Rate by Educational Status



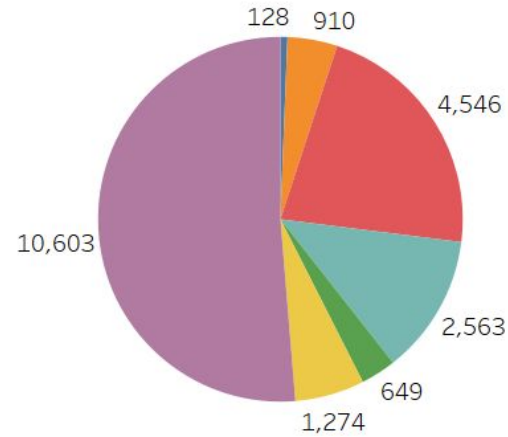
Survey Completion Rate by Status



# Survey Completion Rate by Branch



# Survey Completion Rate by Race



Count of Survey Complete

20,669

Service\_Branch\_\_c

- Air Force
- Army
- Coast Guard
- Marines
- Navy

Race\_\_c

- American Indian or Al..
- Asian or Pacific Island..
- Black or African Amer..
- Hispanic or Latino
- Prefer not to answer
- Two or more races
- White



# Results

- In the Education category we see an increase in surveys taken by those with their highest education being either HS or 4-Year Degrees.
- In the Employment Status category, Active Duty and Unemployed individuals are those who have completed the most surveys.
- In the Service Branch category, we see the majority of the surveys being taken from those in the Army and Navy.
- In the Race category, White and Black or African American have the highest survey completion rate among the different races.