EPPS6323 Research Proposal

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1 Research Topic

Human Resource Management for public officials

- Develop a machine learning model to ***classify and predict public employees' job satisfaction***.
- ***Compare factors predicting job satisfaction*** to enhance organizational management.
- Implications for improving job efficiency, loyalty, and professional atmosphere.

2 Research Questions

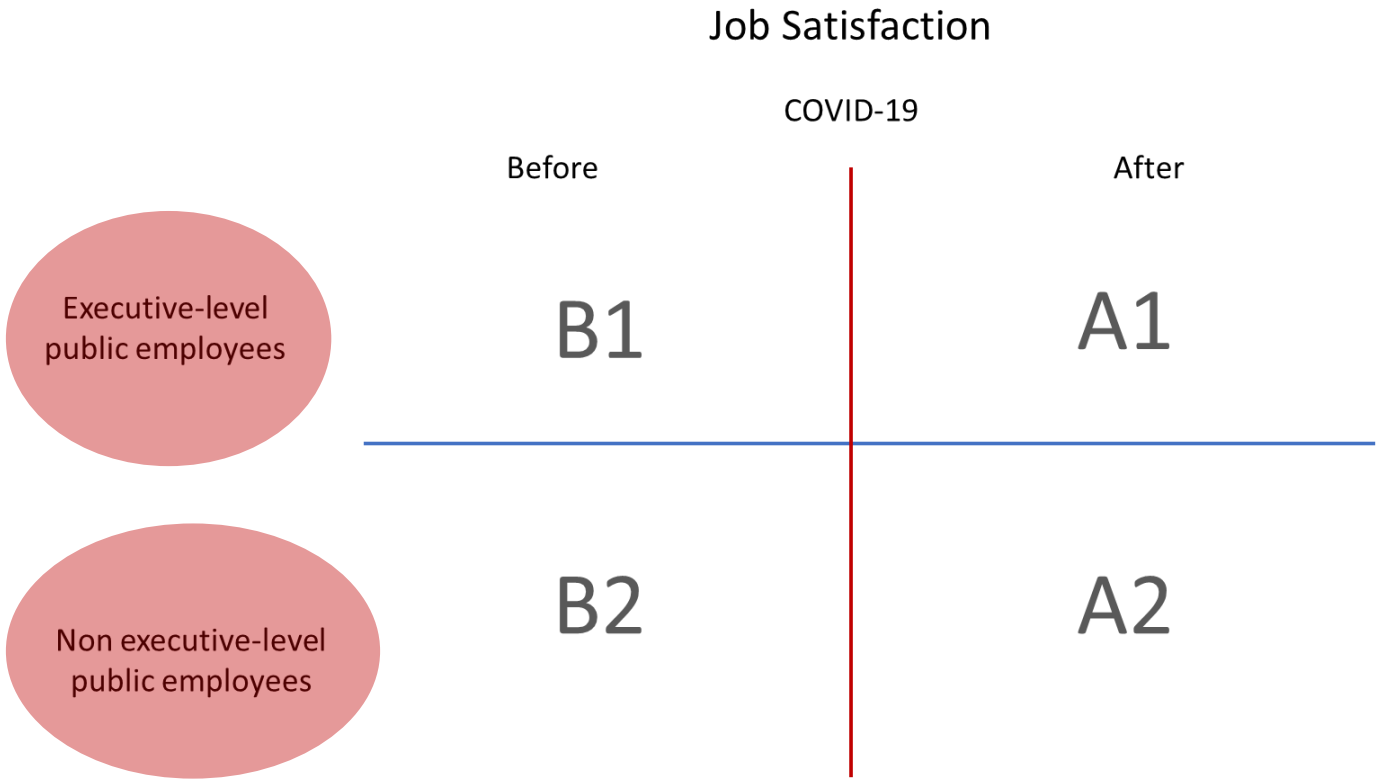
Q1. What kind of differences ***within group characteristics*** can we observe between public employees and executives?

Q2. How do factors affecting job satisfaction change when studying ***pre-pandemic and post-pandemic datasets respectively?***

Q3. How do factors affecting job satisfaction differ between ***different ranks (Executive-level and non-executive)?***

2 Research Questions

Q1. What kind of differences ***within group characteristics*** can we observe between public employees and executives?

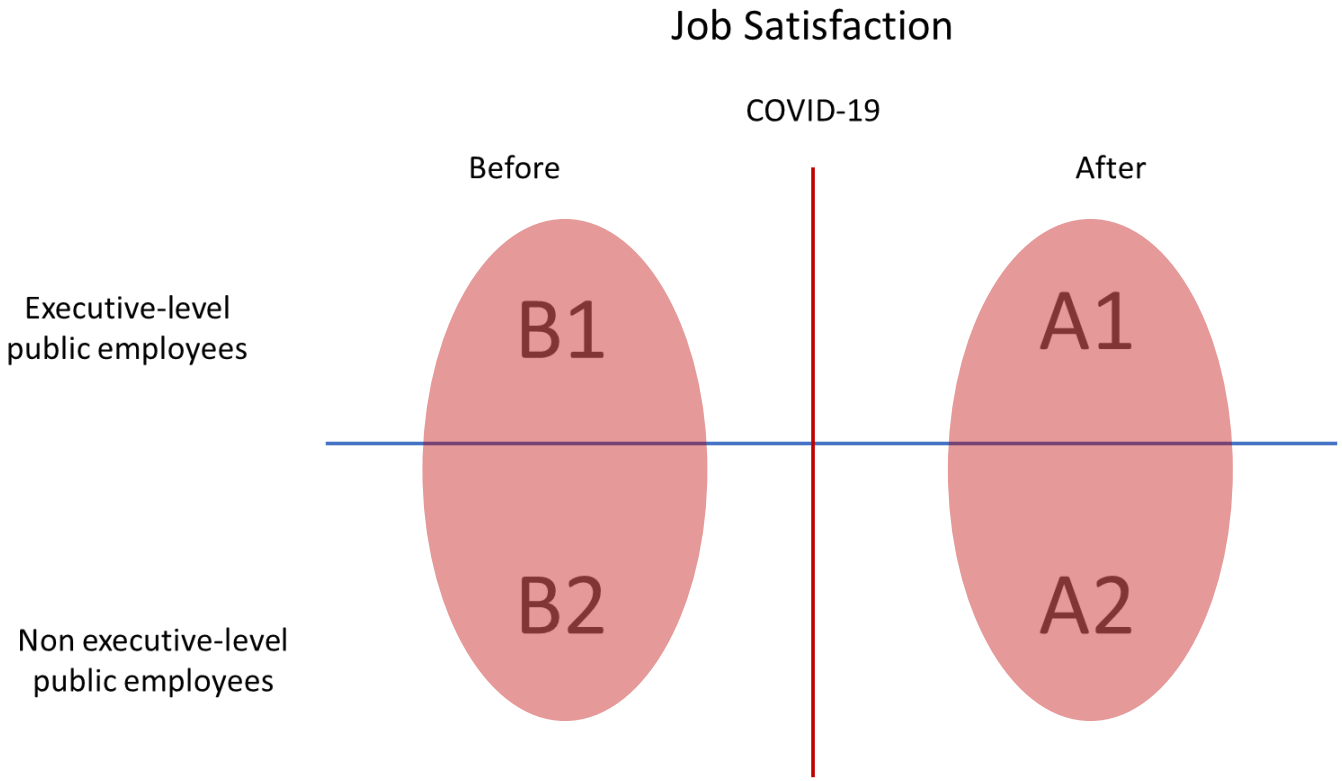


Methodology

- Clustering via unsupervised learning (k-means) for executive and non-executive employees.

2 Research Questions

Q2. How do factors affecting job satisfaction change when studying ***pre-pandemic and post-pandemic datasets respectively?***

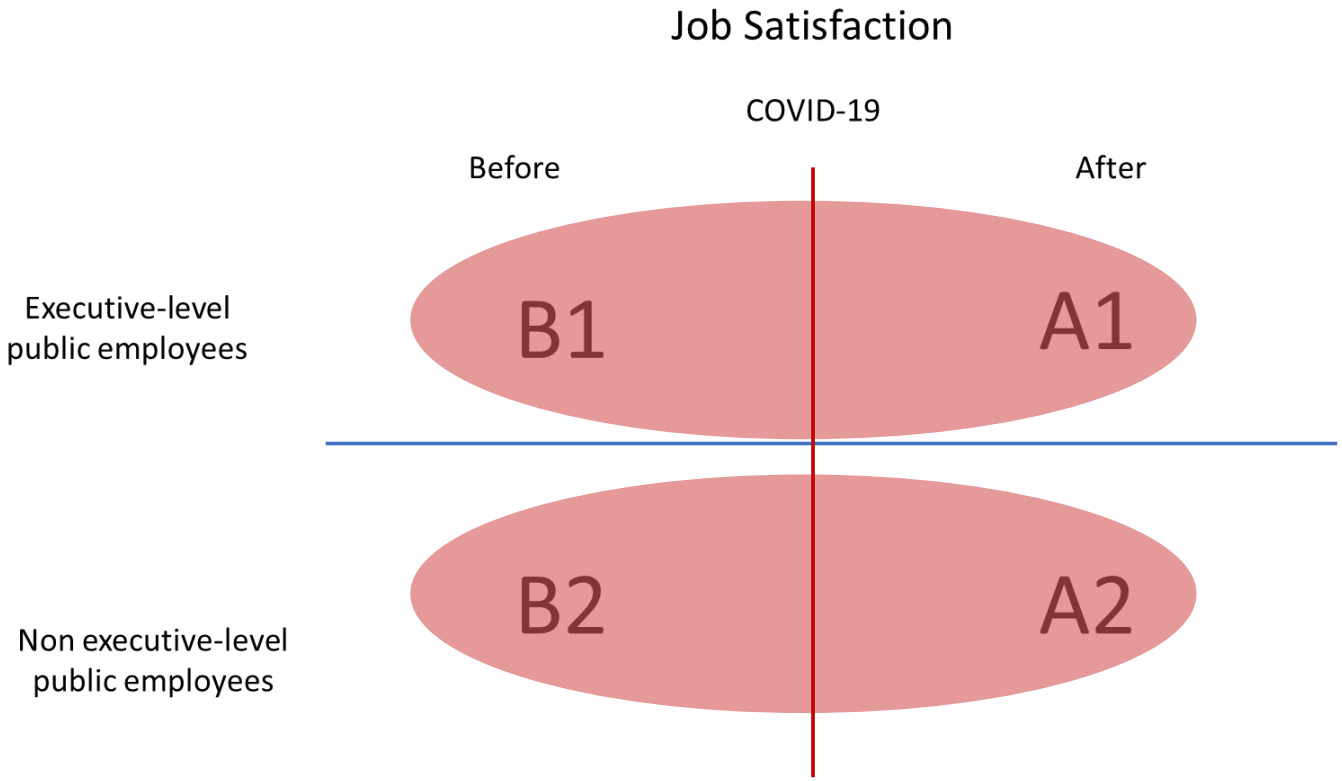


Methodology

- Classification modeling using supervised learning (decision trees, random forests, XGBoost).
- Feature importance analysis to understand factors influencing job satisfaction
- Comparison of pre and post-pandemic datasets.

2 Research Questions

Q3. How do factors affecting job satisfaction differ between ***different ranks (Executive-level and non-executive)?***



Methodology

- Classification modeling using supervised learning (decision trees, random forests, XGBoost).
- Feature importance analysis to understand factors influencing job satisfaction
- Comparison among different employee ranks.

3 Methodology

- Federal Employee Viewpoint Survey (FEVS) data (2019-2020)

1. Data distribution and characteristics analysis.

2. Clustering via unsupervised learning (k-means) for executive and non-executive employees.

3. Classification modeling using supervised learning
   (decision trees, random forests, XGBoost).
   - Feature importance analysis to understand factors influencing job satisfaction.
   - Comparison of pre and post-pandemic datasets and among different employee ranks.

4 Expectations

- Provide insights for ***effective personnel policies and workplace improvements*** to enhance public employees' satisfaction

- Enhance ***work efficiency and quality of public services***.

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THANK YOU