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# ASSESSING THE 2020 DEMOCRATIC PRESIDENTIAL CANDIDATES



# Can The Media Be Trusted To Provide Unbiased Information About Candidates???

- ✓ Advertising bias
- ✓ Consicion bias
- ✓ Corporate bias
- ✓ Mainstream bias .
- ✓ Partisan bias
- ✓ Sensationalism
- ✓ Structural bias

NO!!!

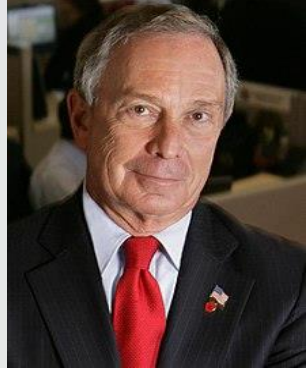
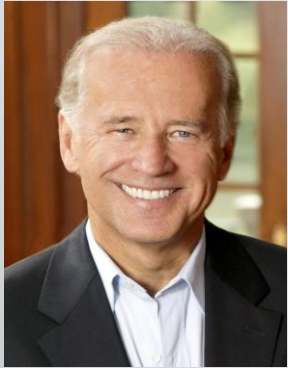


## What Is The Alternative?

Evaluating Candidates Based on  
NLP and Machine Learning Methods



# CANDIDATES

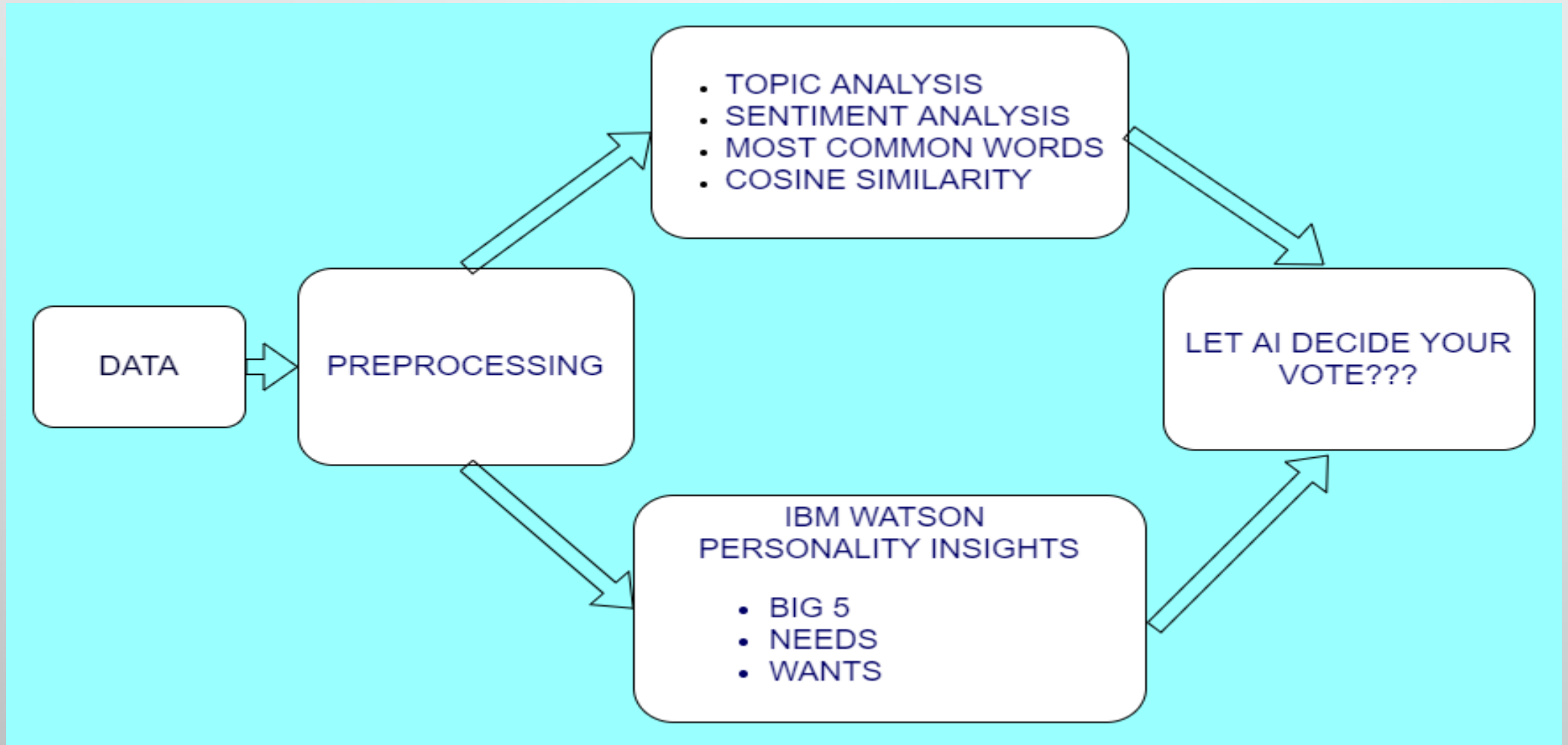


## DATA

Scraped from Transcripts of Debates and Speeches at  
Campaign Rallies

Time Period :Dec 2019-Feb 2020

# NLP PIPELINE



NLP Libraries: NLTK, Spacy, Gensim, Vader, TextBlob, NMF, CountVectorizer, IBM Watson Personality Insights

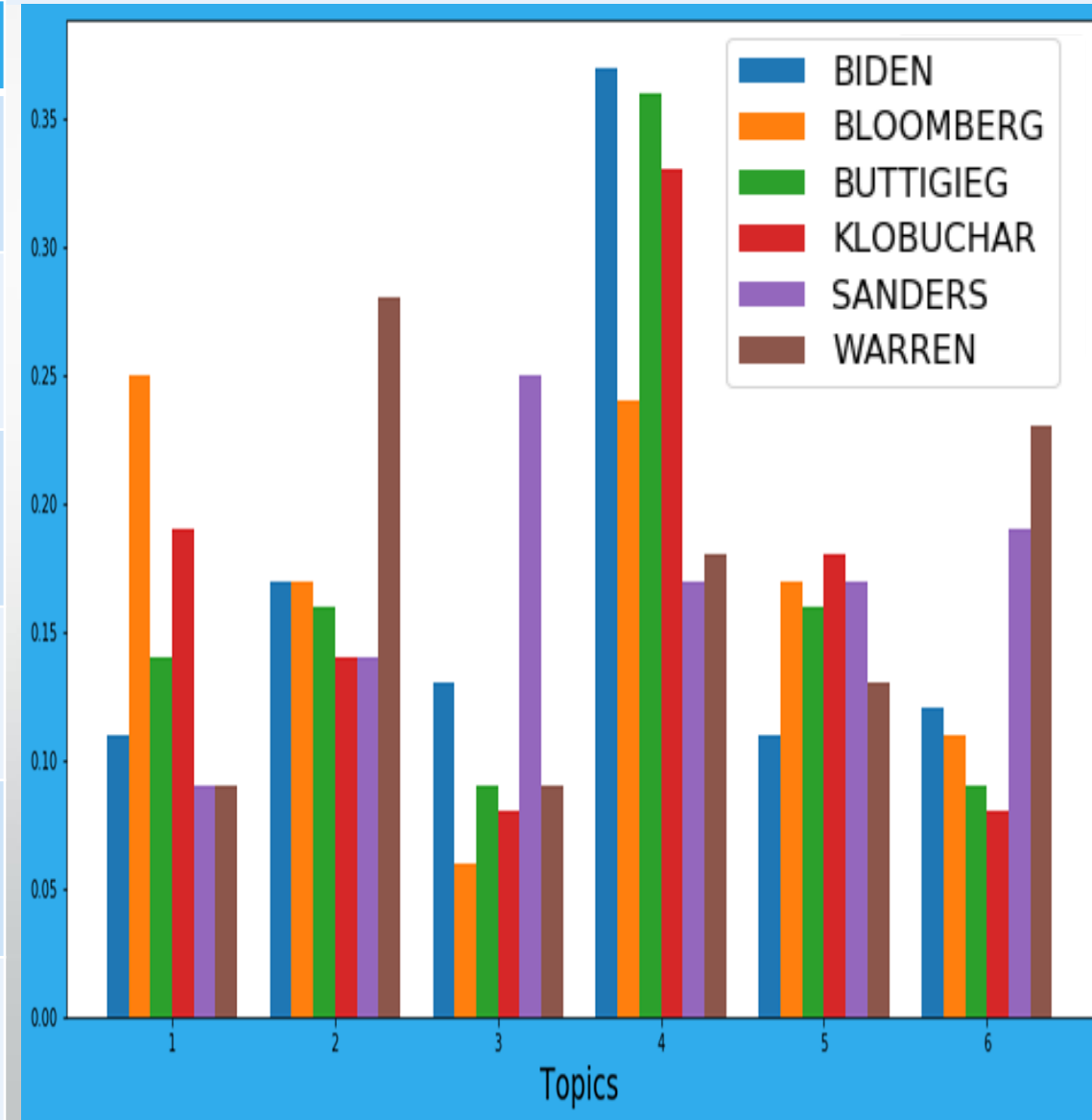
# MOST COMMON WORDS

Candidate	Top Words
Biden	Fact, Number, Deal
Bloomberg	New York, Win, Record
Buttigieg	Majority, Future, Ready
Klobuchar	Vote, Agreement, Senate
Sanders	Healthcare, Working , Change
Warren	Families, Money, Fight



# Topic Modeling

	TOPICS	Candidates
1	Defeat Trump, Vote, Election	Bloomberg
2	Tax, Wealth, Education, Childcare	Warren
3	Health Care, Prescription drugs	Sanders
4	Climate change, Trade agreements	Biden, Klobuchar
5	Congress, Troops, Iraq, War	Similar Importance
6	Working class, Wages, Families	Warren, Sanders



# COSINE SIMILARITY

- The Most similar : Sanders and Warren
- The Least similar: Sanders and Bloomberg

## SENTIMENT ANALYSIS

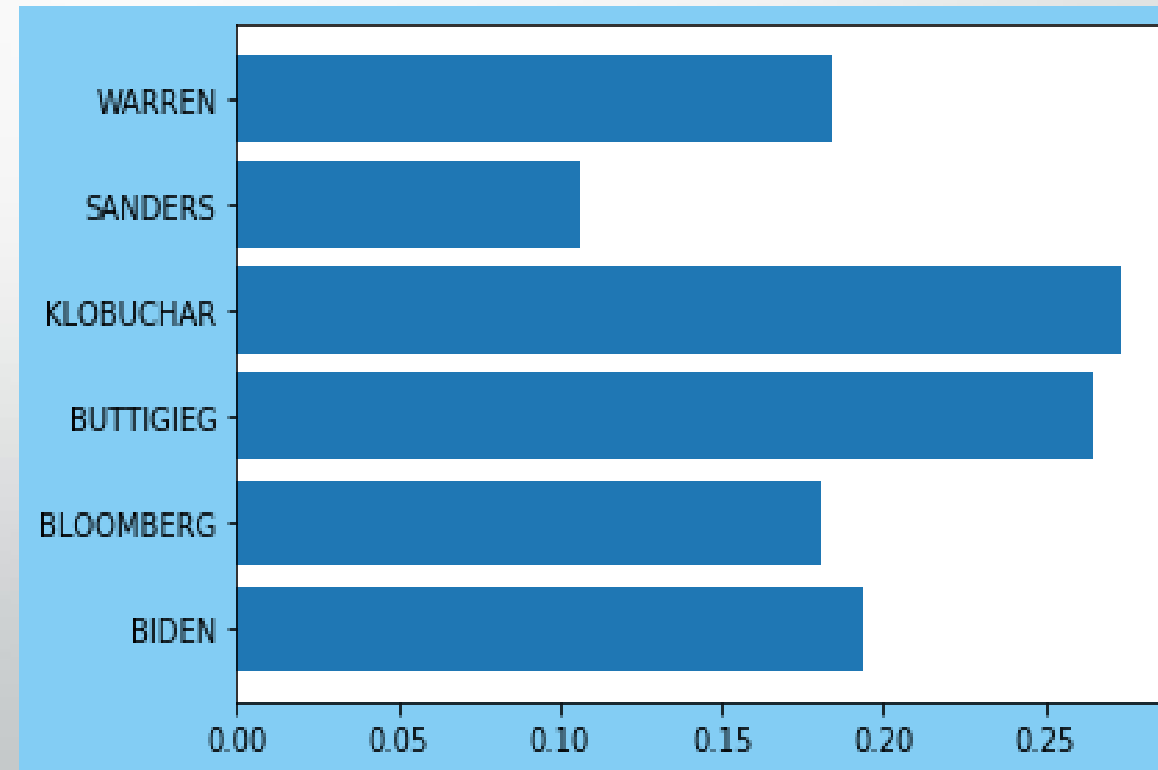
Proved to be difficult to analyze.

Bernie Sanders :

- Mean “compound” sentiment **0.1**
- “Billionaire” sentences sentiment: **0.4**

Doesn't make sense based on domain knowledge!

“Last few years were really great for billionaires like Mike Bloomberg”

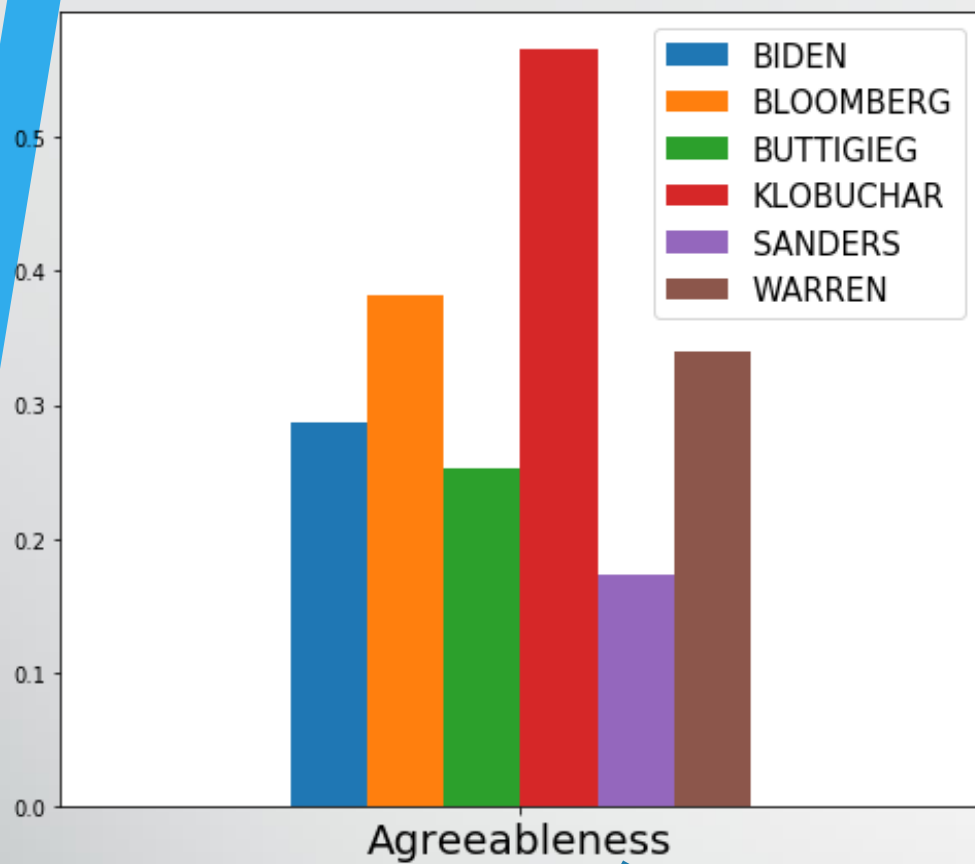


# IBM WATSON PERSONALITY PROFILE

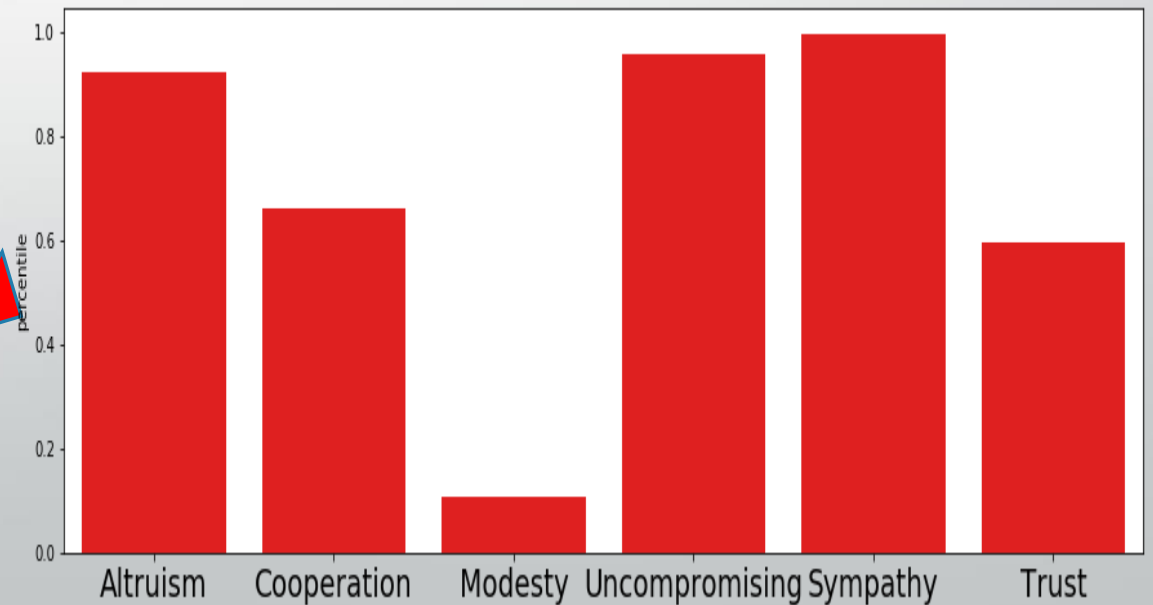
- **Big 5** – Openness, Self-discipline, Extraversion, Agreeableness, Neuroticism
- **Needs** - Excitement, Harmony, Curiosity, Ideal, Closeness, Self-expression, Liberty, Love, Practicality, Stability, Challenge, and Structure
- **Values** - Helping others, Conservation, Hedonism, Self-enhancement, and Open to change



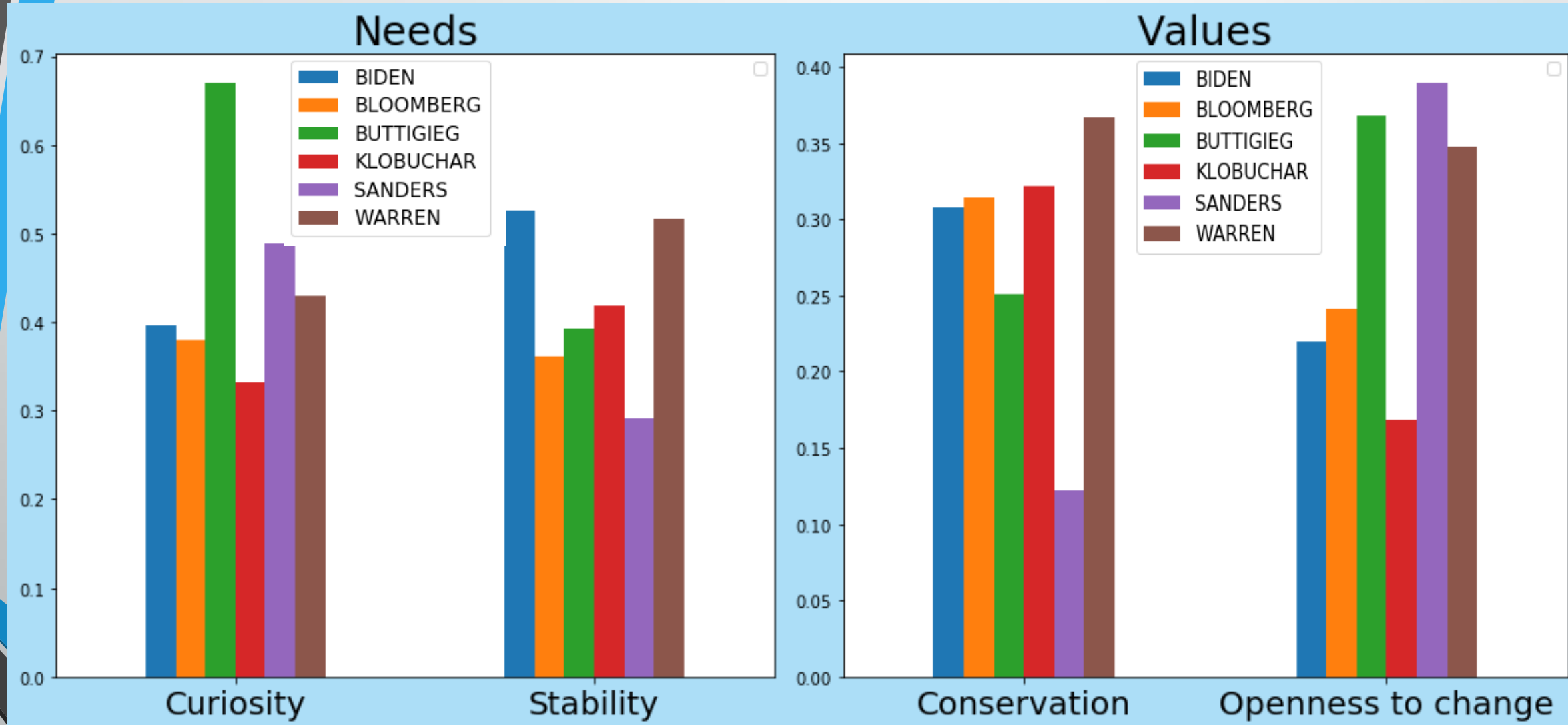
# BIG FIVE - Agreeableness



## Klobuchar: The facets of Agreeableness



# Needs and Values



# NEXT STEPS

- Obtain additional data, e.g. older speeches as well as different type of data such as tweets
- Increase the level of granularity in terms of topic selection
- Compare IBM Watson results with LIWC2015 platform
- Implement a web application



# Thank You!

## Do You Have Any Questions?



# APPENDIX