Chinese Aid in the Middle East and Africa

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Summary

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Image:
https://www.brookings.edu/opinions/chinas-aid-to-africa-monster-or-messiah/

Problem Statement

China has been a big player in the international stage as America is retreating in influence. There is a debate on the effect of China's aid and influence in Africa and the Middle East. How has Chinese aid affected the development and politics of countries in the Middle East and Africa? What are the characteristics of countries where China is more likely to invest? Can amounts of Chinese aid be predicted based on other factors?

Criticisms of Chinese Aid

- The Chinese government does not impose restrictions based on human rights/other considerations
- Chinese aid increases local corruption
- China is more interested in its own political ambition than helping developing countries
- China is only interested in extracting resources at the expense of local economies
- Chinese aid is a debt trap

Data Sources

- William and Mary's AidData (Chinese and World Bank aid)
- USAID
- Freedom House
- World Bank
- Transparency International

Dealing with Missing Data

- Lack of Chinese Transparency
- Machine learning for Tracking Underreported Financial Flows (TUFF)
- TUFF Robot
- 39% of the values for costs of projects are missing
- Used NLP on text to make predictions, 94% accuracy on test data
- Used the model to make predictions, although probably not as accurate

Exploratory Data Analysis

Gray:

Higher Chinese Aid

Red:

Higher United States Aid
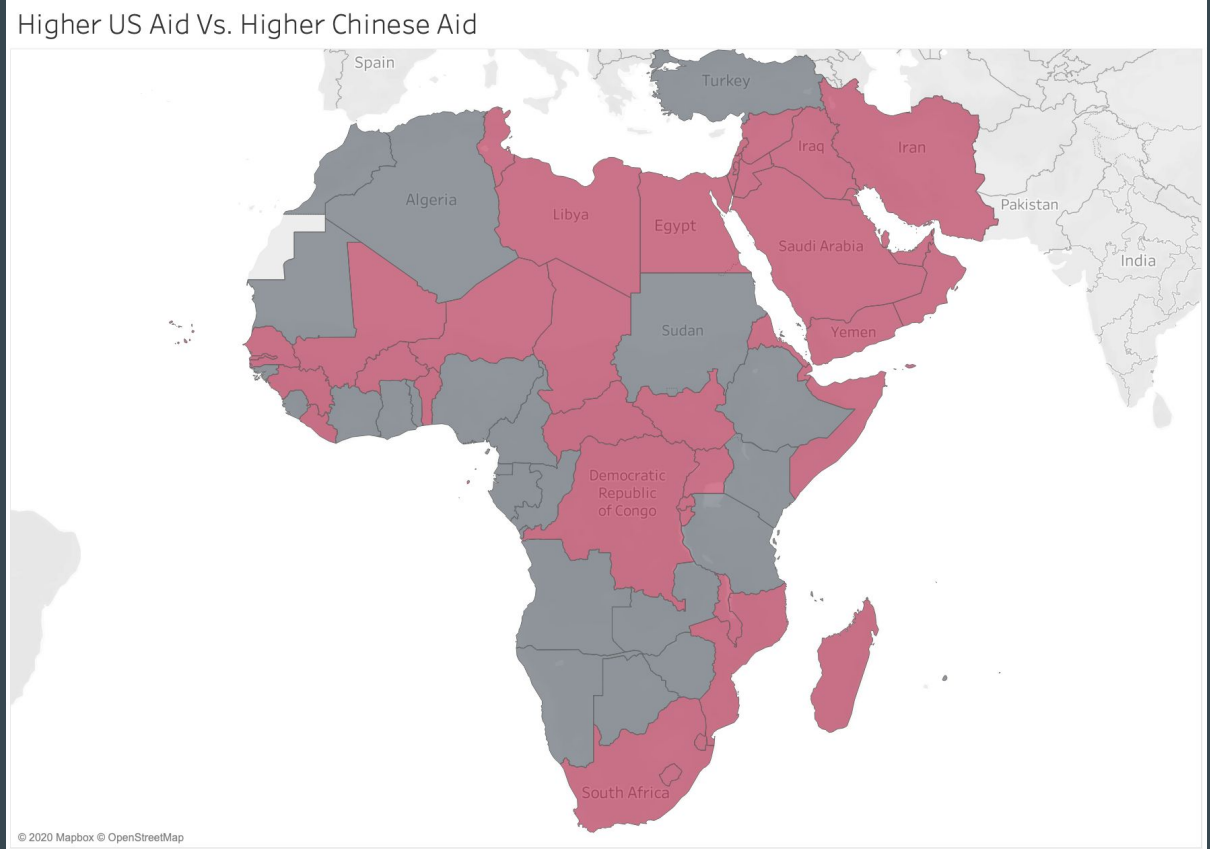
General Characteristics of Recipients of More Chinese Aid Vs. More US Aid

- Higher populations
- Correlation between higher Chinese aid and higher World Bank aid
- Lower Freedom House scores, but higher positive change
- Lower HDI, but higher positive change
- Lower GDP, and similar change in GDP from 2000-2014.
- Lower debt to GDP
- Slightly lower GDP from resource rents
- Slightly worse CPI scores (which correlate with lower HDI and GDP)

Unsupervised Models

- Chose clustering models to see the relationships between countries/variables:
    - DBSCAN gave negative silhouette scores
    - Built three K-means models
1. All numeric variables
2. Chinese/US/World Bank totals
3. Chinese/US/World Bank per capita

Cluster with All Variables

Largest Cluster (Blue):

- More total aid from China, US, but less from the World Bank

- More per capita world bank aid, lower per capita Chinese and US aid

- Lower Freedom House scores

- More corrupt

- Lower HDI, bigger change

- Higher populations

- Lower debt to GDP
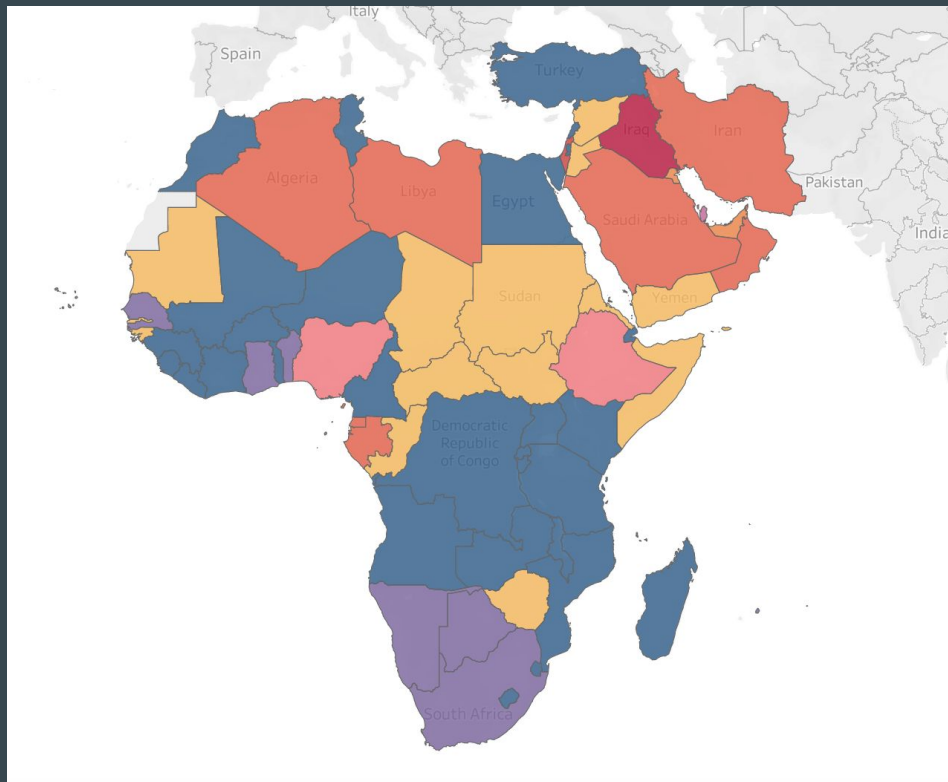
Clustering: Total Aid vs. Per Capita Aid
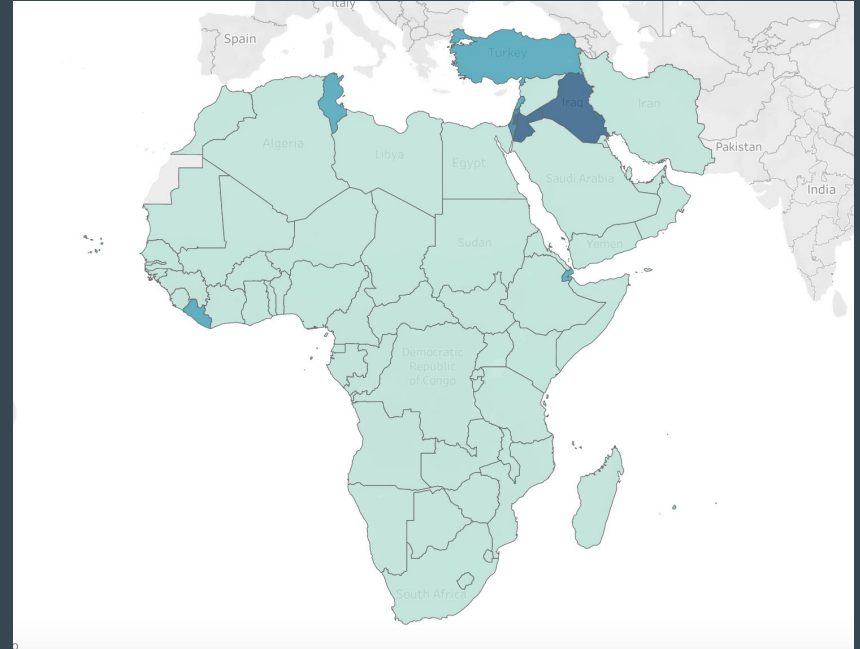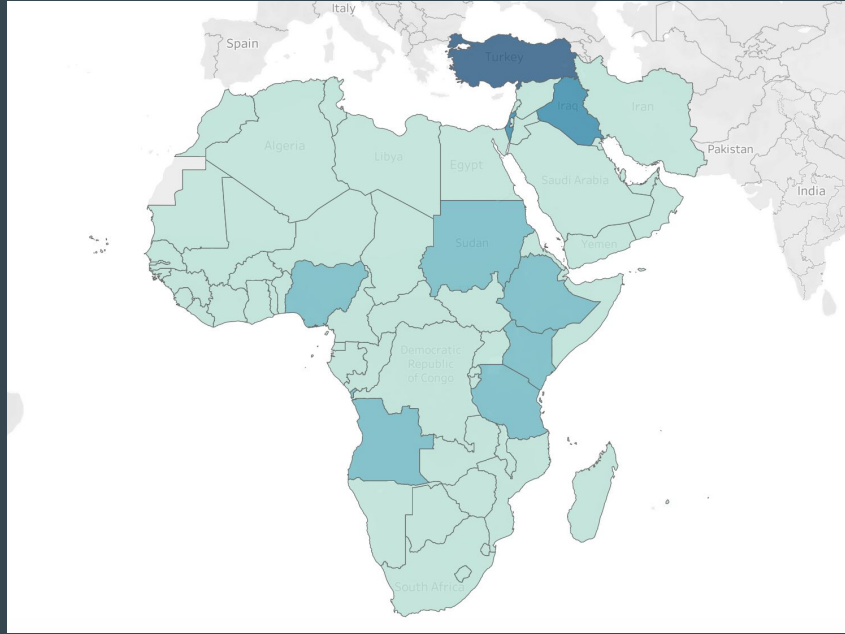
Supervised Models

Problem: Can classification or regression be used to predict the amount of Chinese aid, or countries that get more Chinese aid?

- This was not successful
- Very low scores on regression modeling (negative on test scores)
- Scored just above/below baseline for classification models
- Cannot account for geo-political factors beyond development/political indicators
- Sample size too small

Conclusion

- This data does not show evidence that critiques of Chinese aid are accurate
- China and the World Bank overall invested in poorer developing nations, whereas US has given more to nations such as Israel and Gulf States
- Aid from all sources comes with political motivations, which in the case of China and the United States, are competing motivations
- Generally aid is good; African countries generally need the help

Questions?