

# Analysis of Political Bloc Support and GDP Correlation (2015-2023)

DSA210 Term Project

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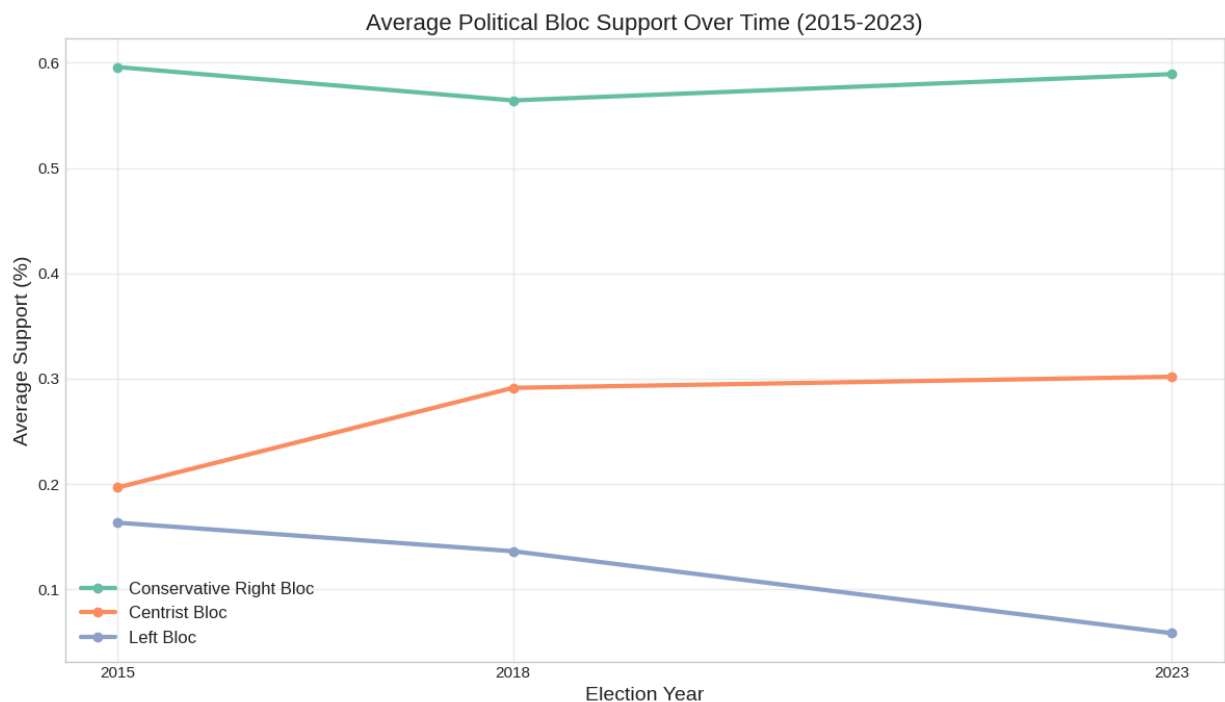
# Overview

This analysis examines the relationship between GDP and political bloc support in Turkey across three election years: 2015, 2018, and 2023. The study groups political parties into three blocs—Conservative Right, Centrist, and Left—and explores their support trends over time. Additionally, it investigates correlations between GDP and bloc support, performing hypothesis testing to assess statistical significance.

## Key Findings

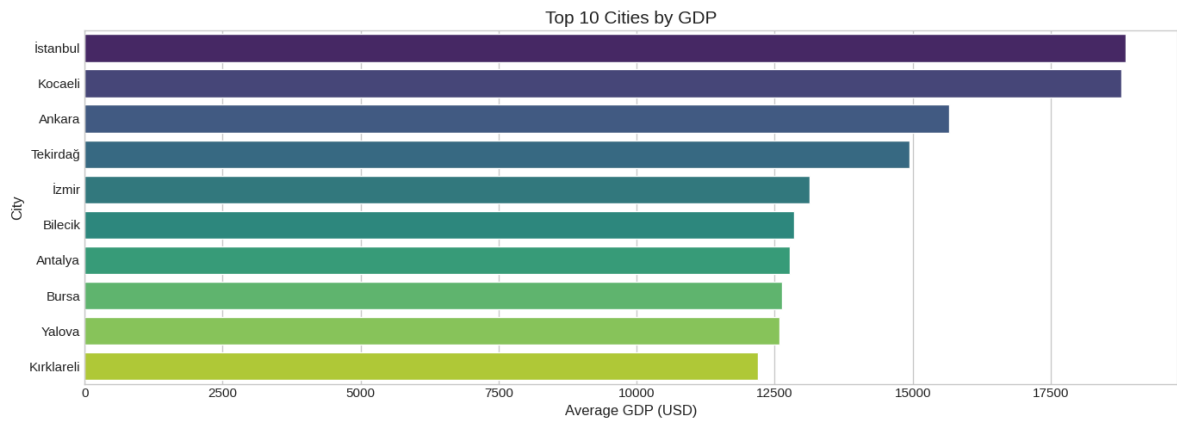
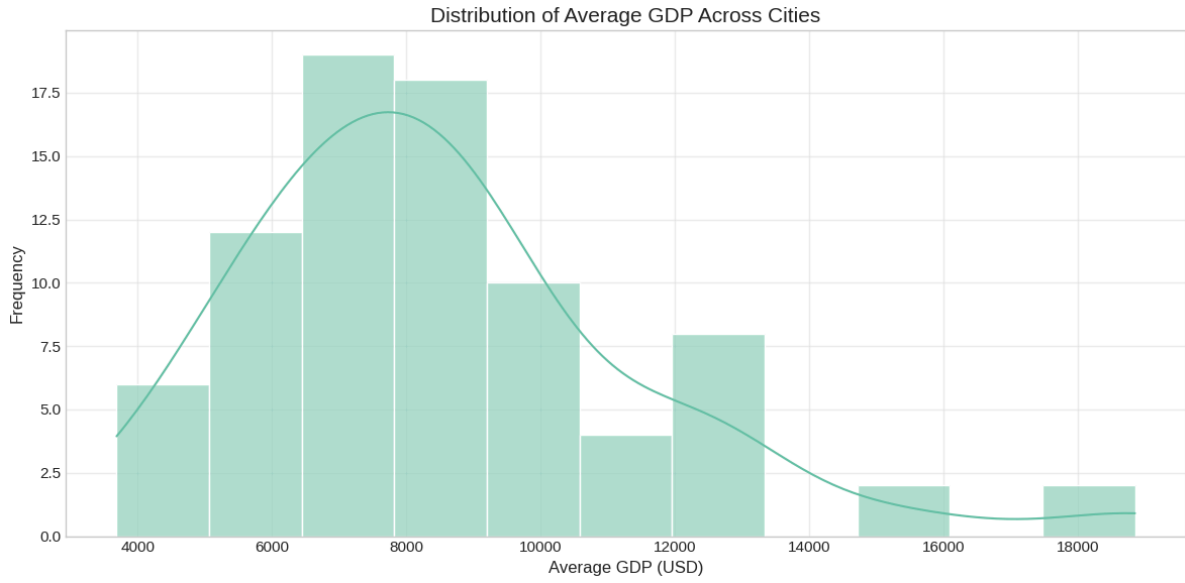
### 1. Bloc Support Trends (2015-2023):

- The Conservative Right Bloc consistently maintained significant support across all years, with slight variations.
- The Centrist Bloc showed moderate growth in support, particularly in 2018.
- The Left Bloc suffered a drop in overall support relative to the others.



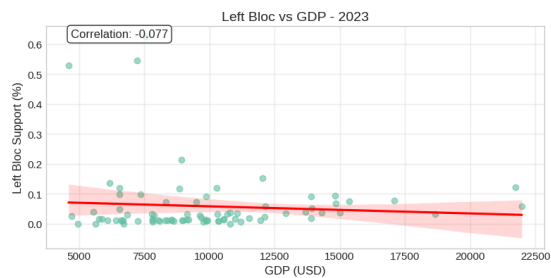
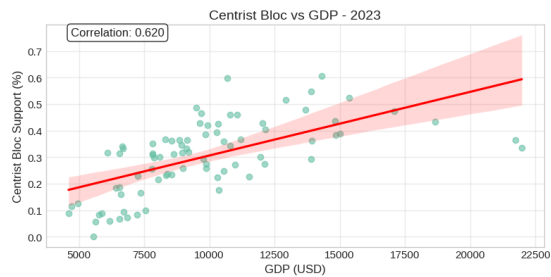
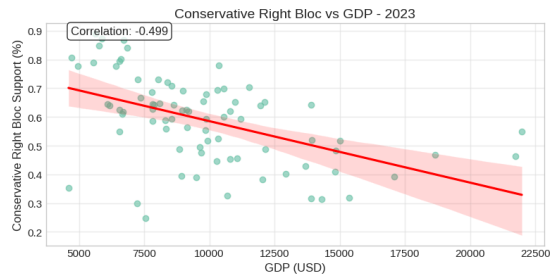
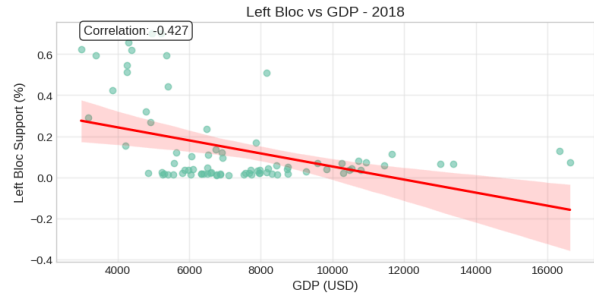
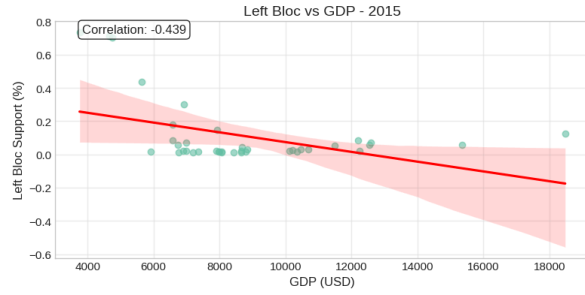
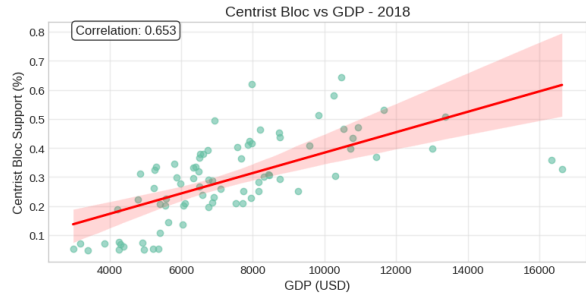
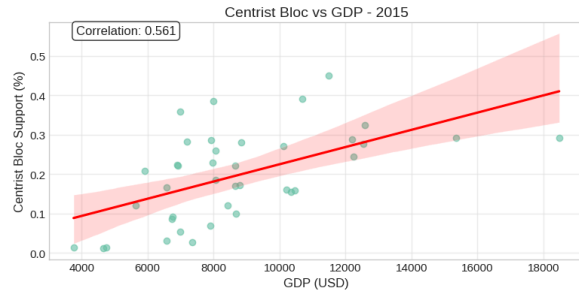
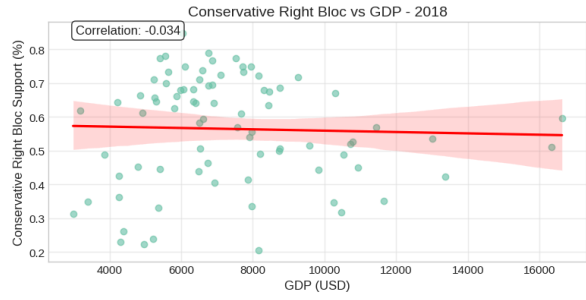
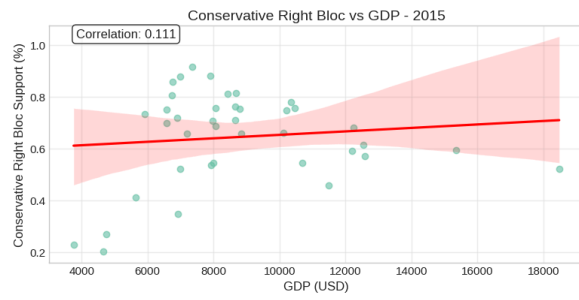
### 2. GDP Distribution:

- Significant disparities in GDP were observed across cities. The top 10 cities had substantially higher GDP compared to the bottom 10.
- The GDP distribution was visualized using histograms and bar charts, highlighting economic inequality.



### 3. Correlation Analysis:

- Correlation matrices and scatter plots revealed varying relationships between GDP and bloc support:
- The Conservative Right Bloc showed a weak to moderate negative correlation with GDP.
- The Centrist Bloc exhibited a weak positive correlation with GDP.
- The Left Bloc demonstrated a weak to moderate positive correlation with GDP.
- These relationships were visualized through heatmaps and regression plots.



## 4. Hypothesis Testing:

- Pearson correlation tests were conducted for each bloc and GDP:
- For the Conservative Right Bloc, the null hypothesis (no correlation) was rejected in some years, indicating a statistically significant negative correlation.
- For the Centrist Bloc, the null hypothesis was rejected in 2018 and 2023, suggesting a moderate positive correlation.
- For the Left Bloc, the null hypothesis was rejected consistently, indicating a significant positive correlation with GDP.
- The strength of correlations ranged from weak to moderate.

## Conclusion

The analysis highlights a complex relationship between economic factors (GDP) and political preferences. While GDP appears to influence bloc support, the strength and direction of these correlations vary by bloc and year. The findings suggest that economic conditions may play a role in shaping political dynamics, but other factors likely contribute to voter behavior.

To further explore these dynamics, machine learning models will be applied to the 2015 and 2018 data to predict the 2023 results, providing deeper insights into the factors driving political trends.