

Regional Stress Response to Macroeconomic Shocks & Earthquakes in Türkiye

A Data-Driven Analysis Using Google Trends, Earthquake Data, and FX Shocks (2018–2025)

1. Project Overview

This project investigates whether Türkiye's seven geographical regions exhibit different levels of collective stress in response to major nationwide shocks.

2. Data Sources

- Google Trends provincial-level data for stress-related keywords.
- Earthquake data (magnitude ≥ 4.5 , depth 0–40 km).
- FX shocks from USD/TRY log-returns.

3. Analysis Pipeline

- Collect Google Trends per province.
- Construct earthquake and FX shock event dates.
- Build a weekly region-level stress index using z-scores.
- Perform event window analysis (± 30 days).
- Conduct ANOVA to compare regional differences.

4. Key Result

ANOVA p-value = $0.0886 \geq 0.05 \rightarrow$ No statistically significant regional differences in stress responses.

5. Conclusion

Türkiye exhibits a synchronized national stress response to major events.