

## **Inequality, Climate Change, and Protests Around the World, 1996-2020**

### Abstract

Social movement scholars have long explored the extent to which social inequality and political conditions shape protests, broadly defined. However, most research relies on single-country or comparative case studies. Few projects have explored the extent to which we can extrapolate from e.g., factors affecting protests in industrialized and/or wealthy countries to factors shaping protests worldwide. To that end, we present a unique analysis that blends classic social science approaches with insights from climate science that increasingly show the direct and indirect effects of climate change on issues related to human migration, political instability, and protests. Specifically, we explore how extreme precipitation and temperature patterns in combination with political conditions and social inequalities around gender, ethnic, and socio-economic axes impact protest patterns. To that end, we employ a global sample of countries for the post-Cold War era, conducting a series of cross-sectional time-series analyses on 115 countries between 1996 and 2020 ( $n=115 \times 25=3,875$ ). For our outcome variable, we draw on media-reported protests captured by the *Integrated Crisis Early Warning System (ICEWS)* database. Our explanatory variables are derived from the satellite-based *Climate Hazards Infrared Precipitation with Station (CHIRPS)* database, the satellite-based *Climatic Research Unit (CRU v. 4)* time-series on temperatures (both standardized), as well as various socio-political datasets, including the *World Bank*, *V-Dem* dataset, and *Polity IV*. Models also control for urbanization and related quality of life indicators known to affect protests (e.g., literacy rates, cell phone subscriptions).

Findings indicate two major patterns. First, social inequalities overall strongly predict the level of protest countries experience in a given year. However, the relationship between *gendered* grievances and political opportunities impacts protest patterns differently than those around ethnic and economically based dynamics, pointing to indirect and potentially nonlinear effects. Second, despite evidence from other research that climate-related dynamics shape protests at local levels, our national-level analyses suggest that temporal rather than cross-sectional dynamics related to climate volatility have a strong effect on protest levels. We conduct additional robustness checks using alternate protest databases (GDELT, ACLED) and contextualize these findings in light of extant social science theories.

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