

FROM STREETS TO BALLOTS: THE IMPACT OF CLIMATE PROTESTS ON PUBLIC AWARENESS AND ELECTORAL OUTCOMES

Azhar Hussain, Javad Shamsi, Ranjana Sinha

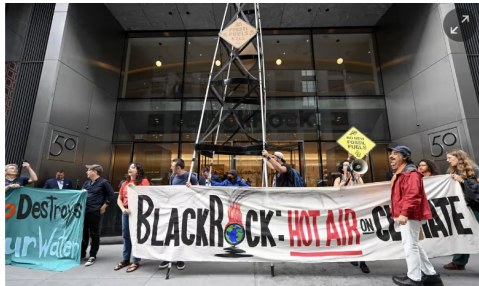
The Political Economy of Environmental Policy

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MOTIVATION

Climate activists kick off rallies against fossil fuel in week of action in New York

Protests were a preview of planned marches in the city ahead of United Nations' climate ambition summit on 20 September



Climate activists hold banners in front of the headquarters of BlackRock in New York. Photograph: Anadolu Agency/Getty Images

Progressive lawmakers and climate activists rallied at the Capitol on Thursday to demand an end to fossil fuel usage, previewing a planned march in New York on Sunday ahead of the United Nations' climate ambition summit on 20 September.

THE RESEARCH QUESTION

Are climate-related protests effective in:

1. increasing climate-change awareness among the general population?
2. influencing citizens' electoral voting decisions?
3. increasing the impetus on climate-related issues among politicians?

IMPORTANCE

- Environmental protests have become more frequent in recent times.
 - fig: increasing protest count
- Protests coincide with growing public interest and media coverage.
 - fig: google trends, TV & media attention
- Limited evidence on the ability of climate protests to engender any form of climate action.

We try to identify a causal link between climate protests and policy discourse, exploring the conditions, forms, and channels through which such protests affect public attitudes and policy preferences.

WHAT WE FIND - IN A NUTSHELL

Are climate-related protests effective in:

1. increasing climate-change awareness among the general population?
 - Significant increase in search queries and media attention.
2. influencing citizens' electoral voting decisions?
 - Voters show more support for their local Green party following protest.
3. increasing the impetus on climate-related issues among politicians?
 - Positive correlation between protest frequency and the intensity of climate-related discussions.

RELATED LITERATURE

- Protests influence citizens' political views and affect policy-making (Madestam et al. 2013).

Focus on climate-related protests

- Rank-and-file opinion is not fully geared toward pro-environmental policy (Besley and Hussain 2023).

Look at citizen voting decisions

- The importance of electronic media in changing social outcomes (Kearney and Levine 2015).

Connection between public awareness and policy change

DATA

- **Climate Protests:**
 - *CountLove*: US; 2017 to 2021; date, location, cause, **no. of attendees**.
 - *ACLEd*: US and Europe; January 2020 to present; date, location, participating group, type of event, but **no attendance figures**.
 - *Fridays for Future*: Covers 131 countries and 2350 cities; location and attendance (reported occasionally, 38% in our case).
- **Google Trends:** Daily and weekly search intensity for "climate change" topic in the US (national and DMA level).

DATA

- **GDELT Media Coverage:** Catalogues many media outputs worldwide to track events, linguistic patterns, and emotional tones.
- **Hansard records:** Official transcripts of debates and proceedings in the British parliament.
- **European NUTS level Election Dataset:** European Parliament election results reported at NUTS3 level.
- **ERA5-Land data:** Hourly precipitation at $0.1^\circ \times 0.1^\circ$ spatial resolution.
- **Chapel Hill Expert Survey:** Categorises political parties on the basis of ideology and political stance.

ROADMAP

- 1 Awareness and Attitudes
- 2 Election Voting
- 3 UK Parliamentary Discussions

US WEEKLY ANALYSIS - SPECIFICATION

Are climate protests associated with higher online search activity and media coverage of related topics?

$$y_t = \alpha + \beta \text{Protest}_t + \gamma X_t + \varepsilon_t$$

- y_t = Google search intensity/media coverage in week t .
- Protest_t = No. of climate protests/No. of attendees in climate protests in week t across the US.
- X_t = Controls (linear and quadratic time trends, seasonal effects captured by month-fixed effects).

US WEEKLY ANALYSIS - RESULTS

$$y_t = \alpha + \beta \text{Protest}_t + \gamma X_t + \varepsilon_t$$

	Search Intensity		News Climate		TV Climate		News Climate Exc. Protest		TV Climate Exc. Protest	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
No. Protests	.022*** (.0025)		.013*** (.003)		.015*** (.003)		.0083*** (.0031)		.013*** (.0031)	
No. Attendees		.16*** (.023)		.076*** (.027)		.094*** (.027)		.04 (.027)		.08*** (.027)
N	199	199	212	212	212	212	212	212	212	212
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R2	.487	.423	.236	.196	.23	.189	.212	.193	.215	.178

Robust standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

► fig: heterogeneity by TV station

DMA ANALYSIS

- To get closer to a causal link, we focus on a finer geographical level, ie., Designated Market Area (DMA) in the US that forms a distinct media market.
- Concern: Transient, unobserved regional shocks that simultaneously drive the likelihood of protest and affect outcome.
- Use variation in rainfall intensity on protest days as a source of *exogenous variation* (eg., Madestam et al. use it as IV for attendance).
 - fig: rain-attendance correlation

DMA ANALYSIS - RESEARCH DESIGN

Do protests occurring on rainy days exert a distinct impact compared to those on non-rainy days?

We estimate the following specification for DMA i on day t :

$$y_{it} = \alpha_j + \eta_t + \beta \text{Protest}_{it} + \delta \text{Protest}_{it} \times \text{Precipitation}_{it} + \varepsilon_{it}$$

- y_{it} = Google search intensity for DMA i on day t .
- α_j = DMA FE.
- η_t = Date FE.
- Protest_{it} = No. of climate-related protests during day t in location i .

AWARENESS AND ATTITUDES - DMA ANALYSIS RESULTS

$$y_{it} = \alpha_j + \eta_t + \beta \text{Protest}_{it} + \delta \text{Protest}_{it} \times \text{Precipitation}_{it} + \varepsilon_{it}$$

	(1)	(2)	(3)
	Search Intensity	Search Intensity	Search Intensity
Protest × Precip	-3.4919*** (1.2210)	-2.3157*** (0.4990)	-1.9727*** (0.4379)
Protest	26.6693*** (1.0840)	1.8430 (1.7600)	0.7221 (1.5346)
DMA FE	No	Yes	Yes
Date FE	No	No	Yes
Observations	163876	163876	163876

Robust standard errors clustered at the DMA level in parentheses.

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ROADMAP

- 1 Awareness and Attitudes
- 2 Election Voting
- 3 UK Parliamentary Discussions

ELECTION VOTING

- Increased awareness is short-term. To understand whether this has tangible and long-term consequences we look at voting decisions.
- Focus on protests that were *pre-announced at the international level* and immediately followed up by an election.
- Fridays for Future (FFF) organised global protests across 125 countries
 - Protests organized everywhere on March 15, 2019
 - 1 million protesters across 2,200 locations
 - European Parliamentary elections happened in May 2019.

ELECTION VOTING - SPECIFICATION

Do climate protests influence citizens' voting behaviour?

We estimate the following specification:

$$y_i = \alpha + \beta \text{Protest}_i + \delta \text{Protest}_i \times \text{Precipitation}_i + \gamma X_i + \varepsilon_i$$

- y_i = Vote shares for political parties in location i .
- Protest_i = Indicator for occurrence of FFF protest in location i .
- X_i = Control for education level and long-run average rainfall in location i in the month of March.

ELECTION VOTING - RESULTS

	Green Party	Conservative	Socialist	Agrarian/Centre	Christian Democrats
Protest x Precip	-0.357*** (0.125)	0.502 (0.413)	-0.144 (0.134)	1.274 (1.032)	-0.145 (0.292)
Protest	5.208*** (0.635)	-2.128** (1.080)	1.164 (0.805)	-1.028 (2.168)	-3.209** (1.427)
Observations	957	906	1314	113	1067
Mean	6.100	8.854	14.25	8.135	14.92
Standard Deviation	6.989	9.468	10.14	8.652	15.64

	Liberal	Radical Left	Radical Right	Regionalist	Voter Turnout
Protest x Precip	0.161 (0.133)	0.155** (0.0631)	-0.881*** (0.165)	0.0433 (0.147)	-0.744*** (0.189)
Protest	2.605*** (0.755)	-0.654 (0.423)	6.243*** (1.024)	-0.738 (1.048)	4.366*** (1.001)
Observations	1186	1508	1279	680	1064
Mean	9.352	4.676	14.97	3.396	52.57
Standard Deviation	8.906	4.866	14.18	7.438	11.51

Robust standard errors in parentheses

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UK PARLIAMENTARY DISCUSSIONS

- Explore the relationship between protest occurrence in a constituency and the degree to which its MP discusses climate issues in the legislature.
- Two measures of engagement:
 1. *Discussion density*: The occurrence of climate-related keywords counted and normalised against total word count of MP's annual speeches
 - keywords
 2. *Valence measure*: Reflects MP's attitudes towards climate issues by evaluating the sentiment in parliamentary discourse

UK PARLIAMENTARY DISCUSSIONS - SPECIFICATION

Do MPs in the UK respond to climate protests by discussing climate-related topics more in Parliamentary discussions?

$$y_i = \alpha + \beta \text{Protest_count}_i + \gamma X_i + \varepsilon_i$$

- y_i = Discussion density/Valence of climate issues by MPs from constituency i .
- Protest_count_i = No. of climate-related protests in constituency i .
- X_i = Control accounting for pre-existing levels of awareness and interest in climate-related issues in constituency i .

UK PARLIAMENTARY DISCUSSIONS - RESULTS

$$y_i = \alpha + \beta \text{Protest_count}_i + \gamma X_i + \varepsilon_i$$

	Discussion Density				Valence Measure			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Number of Protests	0.0111** (0.0028)	0.0204* (0.0064)	0.0035 (0.0026)	0.0262 (0.0192)	0.0116*** (0.0009)	0.0146** (0.0042)	0.0106** (0.0016)	0.0188** (0.0047)
Constituencies	All	Labour	Conservative	Other	All	Labour	Conservative	Other
Observations	753	253	368	132	753	253	368	132

Robust standard errors in parentheses

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CONCLUSION

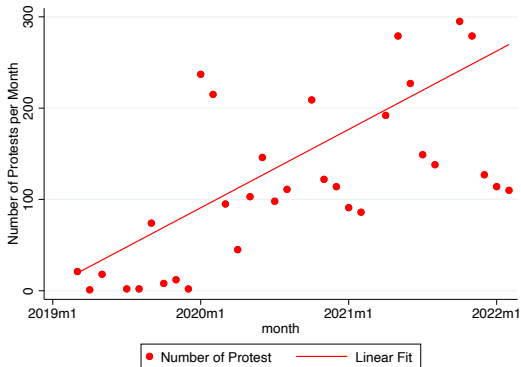
- Given the increasing occurrence of climate protests, we look into whether these protests make a difference.
- There is greater awareness and media coverage of climate issues immediately following protests.
- Protests also influence citizen's voting decisions, with both Green and Radical Right parties garnering higher vote shares, highlighting the dual impact of environmental activism.
- They are also associated with more discussion on climate issues by politicians in the UK, particularly the Labour party.

THANK YOU!

Thank you for your questions and feedback!

Please email me at ranjanasinha2901@outlook.com for further questions/comments.

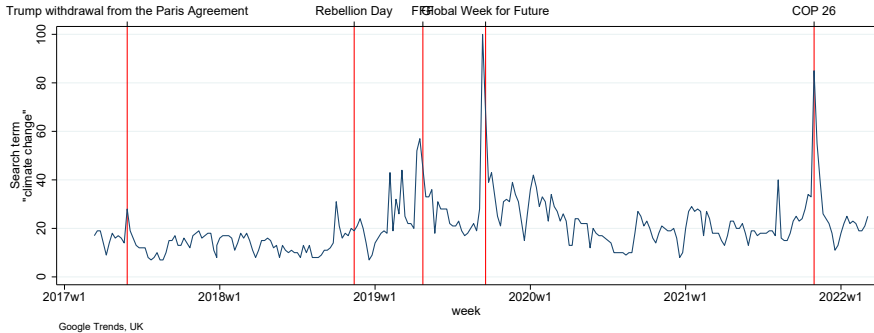
MONTHLY COUNT OF PROTESTS IN EUROPE AND NORTH AMERICA



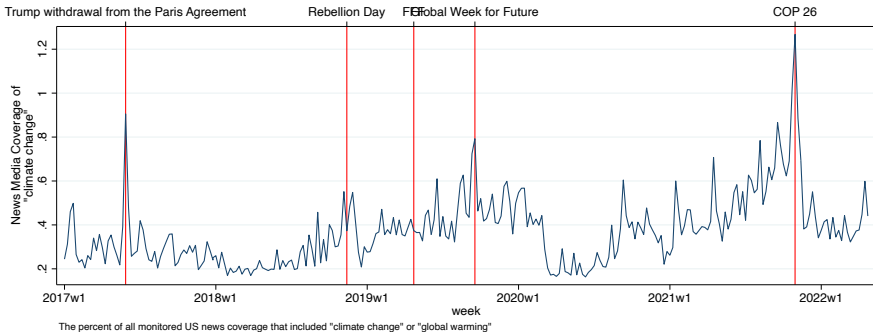
Source: ACLED dataset. Monthly protests > 300 omitted for clarity.

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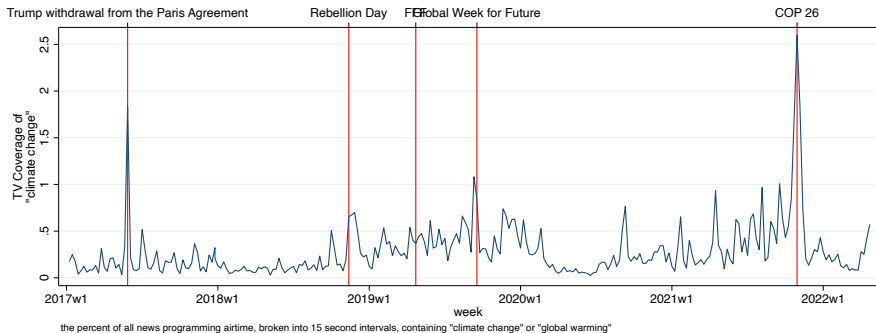
CLIMATE CHANGE ENGAGEMENT IN GOOGLE TRENDS IN THE UK



CLIMATE CHANGE ENGAGEMENT IN PRINT MEDIA IN THE UK



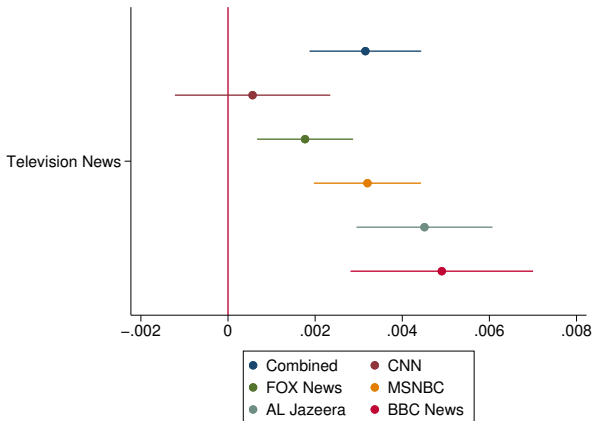
CLIMATE CHANGE ENGAGEMENT ON TV IN THE UK



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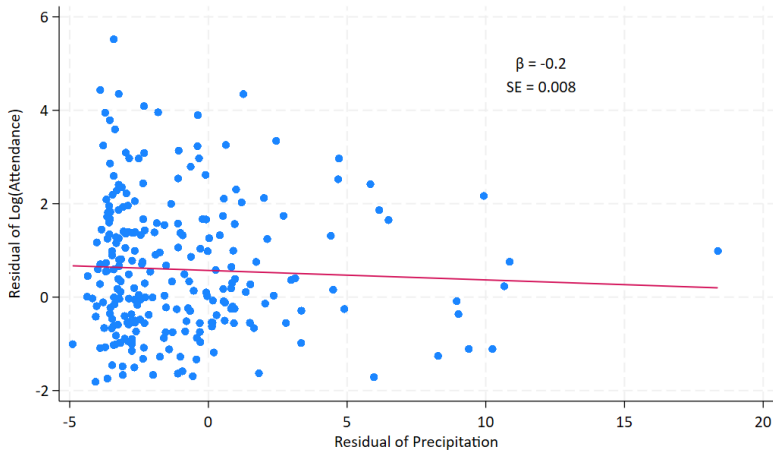
US WEEKLY ANALYSIS - RESULTS

Protest Coverage across different TV stations



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ATTENDANCE AND PRECIPITATION ON DAY OF PROTEST



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KEYWORDS

environment, climate change, global warming, biodiversity, carbon footprint, sustainability, greenhouse effect, carbon emissions, climate policy, fossil fuels, energy efficiency, renewable energy, carbon neutral, and Paris agreement.

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