A QUANTITATIVE SURVEY ON PUBLIC ATTITUDES TOWARDS CLIMATE TAXATION IN THE US: A STATA-BASED LOGISTIC REGRESSION STUDY

1. Introduction and Rationale

Climate taxation—such as carbon pricing and fuel levies—has emerged as a policy tool to reduce emissions. However, its adoption in the US remains politically divisive. This study investigates the **demographic, political, and attitudinal factors** that shape public support or opposition to climate taxes using survey data and logistic regression in STATA.

2. Research Objectives and Questions

- To identify which factors predict support for climate taxation among US adults
- To examine how political ideology, income, and environmental concern influence this support
- To test whether environmental concern moderates the effect of political ideology

Research Question: What individual-level factors predict public support for climate taxation in the United States?

3. Survey Design and Sample

- **Target Group:** US adults aged 18+
- **Sample Size:** 300 responses (collected via Prolific and Reddit political forums)
- **Questionnaire Structure:**
    - Support for Climate Taxation (binary: Support = 1, Oppose = 0)
    - Political Ideology (7-point liberal–conservative scale)
    - Environmental Concern (5-point Likert scale)
    - Annual Household Income (categorical brackets)
    - Controls: Age, gender, education

4. STATA Analysis Plan

Dependent Variable:

- Binary: Support for climate taxation (1 = yes, 0 = no)

Independent Variables:

- Political ideology
- Environmental concern
- Income
- Interaction term: Political ideology × Environmental concern

Control Variables:

- Age, gender, education

Steps in STATA:

1. Data cleaning (encode, label, gen)
2. Logistic regression (logit)
3. Marginal effects (margins)
4. Interaction term estimation (logit with c.variable1#c.variable2)
5. Goodness-of-fit: Hosmer-Lemeshow test

5. Simulated Results (STATA Output Interpretation)

Variable	Odds Ratio	Std. Err.	p-value
Political Ideology (more cons.)	0.61	0.12	0.003
Environmental Concern	2.18	0.40	0.000
Income (above \$80k)	1.26	0.25	0.210
Interaction (Ideology × Concern)	0.81	0.08	0.031

- **Interpretation:**
  - Conservatives are **less likely** to support climate taxation.
  - Higher environmental concern **strongly predicts support**.
  - The interaction shows that **even conservatives with high concern are more supportive**—but less so than liberals with equal concern.
- **Model Fit:** Pseudo $R^2 = 0.24$, Hosmer-Lemeshow p = 0.28 → Good model fit

6. Conclusion and Interpretation

Support for climate taxation in the US is shaped by a complex mix of ideology and environmental concern. **Political beliefs remain the strongest predictor**, but the effect is moderated by how concerned individuals are about environmental issues. Policy framing may be more effective when aligned with underlying values, especially for conservative audiences.

7. Report Structure

1. Abstract
2. Introduction
3. Literature Review
4. Conceptual Framework and Hypotheses
5. Methodology
6. STATA Analysis and Logistic Model
7. Discussion and Interpretation
8. Policy Implications
9. Limitations and Suggestions for Future Research
10. References
11. Appendix (Survey items, STATA syntax)

Academic and Policy Relevance

- **Academic:** Suitable for dissertations in public policy, political economy, environmental economics, or applied statistics.
- **Policy:** Useful to environmental NGOs, government agencies, and climate campaigners designing targeted communication strategies.