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METHODS

For this study, the original intent was to analyze the effect of environmental taxation on the level of pollution and waste internationally. Including data from different countries with climate conditions and domestic policy did not leave much room for standardization. Furthermore, we did not encounter much available data for developing nations. Therefore, we rejected this model because of a lack of a representative sample. Resultantly, we assessed local data in the state of Georgia as a proxy from which we can base future and more complicated statistical analyses.

For this statistical analysis, we are looking at the effect of environmental taxation as a treatment for reducing the amount of pollution per county. Here, we address different confounders such as population density, average income, and political party. According to the literature, a higher population density and average income are both associated with higher levels of pollution due to an increase in the amount of energy required to sustain a larger population and amassed consumption. Additionally, left-wing policy is more likely to support an increase in environmental taxation than right-wing policy.

We are using information from the existing literature, regression analysis, and our map visualizations to evaluate whether environmental taxation has led to a significant change in the amount of pollution per county from the year 2013 to the present 2023.

LITERATURE REVIEW

In our research on environmental taxation and pollution, we've identified a variety of journals that contribute to our research and understanding of the topic. The journals include "Distributional Conflicts and the Timing of Environmental Policy", "U.S. Environmental Policy and Politics: From the 1960s to the 1990s", and "Assessment of Environmental Policy Implementation: Two Case Studies from the Czech Republic."

The first journal, "Distributional Conflicts and the Timing of Environmental Policy," answers the question of how distributional conflicts influence the adoption timing of environmental policies, with a particular focus on climate change. The study uses a dynamic game model, factoring in abatement costs and environmental loss, and discovers that uneven burdens of pollution reduction can lead to delayed policy adoption. This delay incurred from individuals' expectation that others will assume a greater share of the burden. Additionally, the study observes that wider income disparities result in greater regional environmental degradation, further impeding policy implementation. These insights suggest that income distribution would impact the emission, and it should be taken into our consideration as a confounding variable.

The second article, "U.S. Environmental Policy and Politics: From the 1960s to the 1990s," provides a comprehensive overview of the evolution of U.S. environmental policy over

three decades. It solidified our findings in the first article because it underscores the challenges in implementing pollution control policies and the influence of political, social, and economic factors on these policies over time. This historical perspective reinforces our decision to consider broader socio-economic factors, such as income, political stands, or population in our analysis.

The last article that we looked at was the "Assessment of Environmental Policy Implementation: Two Case Studies from the Czech Republic" by Petr Šauer et. al. The article is original research from the Institute for Sustainable Business at the University of Economics in the Czech Republic. This study provides background on the assessment of effective environmental policy by looking at economic and environmental utility. The project analyzes the effectiveness of using a permit to limit construction that might increase emission pollution. Since the model evaluated utility through an environmental and economic lens, it surmised that this policy was not effective due to significant loss in revenue. The second case study used the same economic and environmental model to evaluate the effectiveness of imposing taxes on the amount of deposited solid waste. This policy was determined to be moderately effective. The literature concludes that increasing the amount of taxation would have a positive effect in reducing the amount of deposited solid waste in the future. This study supports the idea that environmental taxation has a positive effect in reducing the amount of pollution. Additionally, it provides a model which can be applied to future in-depth policy analysis.

After reviewing these three journals, the insights we've gathered will navigate us through the research process by helping us to identify confounding variables and hypothesize the positive correlation between environmental taxation and amount of pollution. By integrating these diverse perspectives from the journals, we can approach our research with a more holistic view, ensuring

that our exploration into the interplay between environmental taxation and pollution reduction is

both comprehensive and robust.