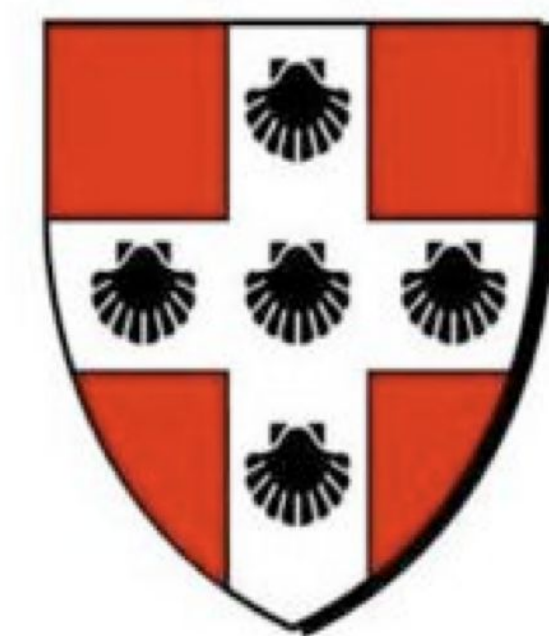




The Relationship Between County-Level Climate Change Vulnerability and Climate Change Beliefs among Americans



Isaac Doggett, Quantitative Analysis Center, Wesleyan University

- Do attitudes about climate change differ in more and less vulnerable counties of the US?
 - Is this relationship moderated/confounded by majority political party of counties?

Introduction

- People in high risk areas don't seem to become more knowledgeable about climate change but do seem to become more worried about climate change (Carlton et al., 2015)
- People in general who believe more in climate change or are more knowledgeable about climate change tend to be more worried about climate change (Hoogendoorn et al., 2020)
- Liberal people tend to be more worried about climate change (Paniello-Castillo et al., 2025)
- Most studies in this area not in the United States and are done qualitatively by surveying residents in particularly at risk areas

Results

Bivariate

- Pearson correlation tests revealed that the vulnerability percentile of a county is significantly negatively correlated with both the proportion of a county who think climate change is happening and the proportion who are worried about climate change. The P values for these tests were $2.2e-16$ and $4.591e-12$ respectively.
- Linear regression analyses paralleled these results, showing that on average, a county is expected to have .055 less percent of people who believe in climate change and .032 less percent of people who are worried about climate change for each additional vulnerability percentile they are in ($P=2e-16$ and $4.6e-12$ respectively).

Multivariate

- After accounting for majority political party linear regression analyses showed that on average for each additional vulnerability percentile a county is in .04% less of the county are expected to believe in climate change and .015% less of the county are expected to be worried about it. ($p=2e-16$ and $7.4e-6$ respectively) (Figure 1)
- A county that had more democratic voters than republican voters in the 2024 presidential election was expected to have 12% more of their population believing in climate change and 14% more of their population worried about it. ($p=2e-16$ for both) (Figure 2)

Discussion

- As a county's vulnerability to climate change increases the proportion of people who believe in climate change and who are worried about climate change in that county decrease very slightly but significantly. This relationship holds when controlling for majority political party, which was thought to be a possible confounding variable explaining this trend.
- The proportion of people who both believed in and were worried about climate change was substantially and significantly higher in majority Democratic counties than in majority Republican.
- These results add to the existing findings in this field, giving us a better sense of where American viewpoints on climate change fit in with a broader international picture. The findings presented here go against the existing findings in this field with people living in high risk areas being neither more worried or more knowledgeable about climate change than people living in low risk areas.

Methods

Sample

- The data set included 3,228 counties from all across the US, all of these counties were either surveyed to get voting and climate change attitude data or were assessed by the researchers behind the US Climate Vulnerability Index. Counties that were part of both of these groups were used to arrive at my conclusions

Measure

- The percentile of vulnerability to Climate change (according to the US Climate Vulnerability index) that each county was in was recorded as used as the measure of climate change vulnerability for this study.
- The proportion of each county who believed in climate change and who were worried about climate change was recorded via survey by Climate Change in the American Mind
- The proportion of each county who voted democratic/republican in the 2024 presidential election was recorded by Ballotpedia

Vulnerability Percentile and "Happening" by Political Party

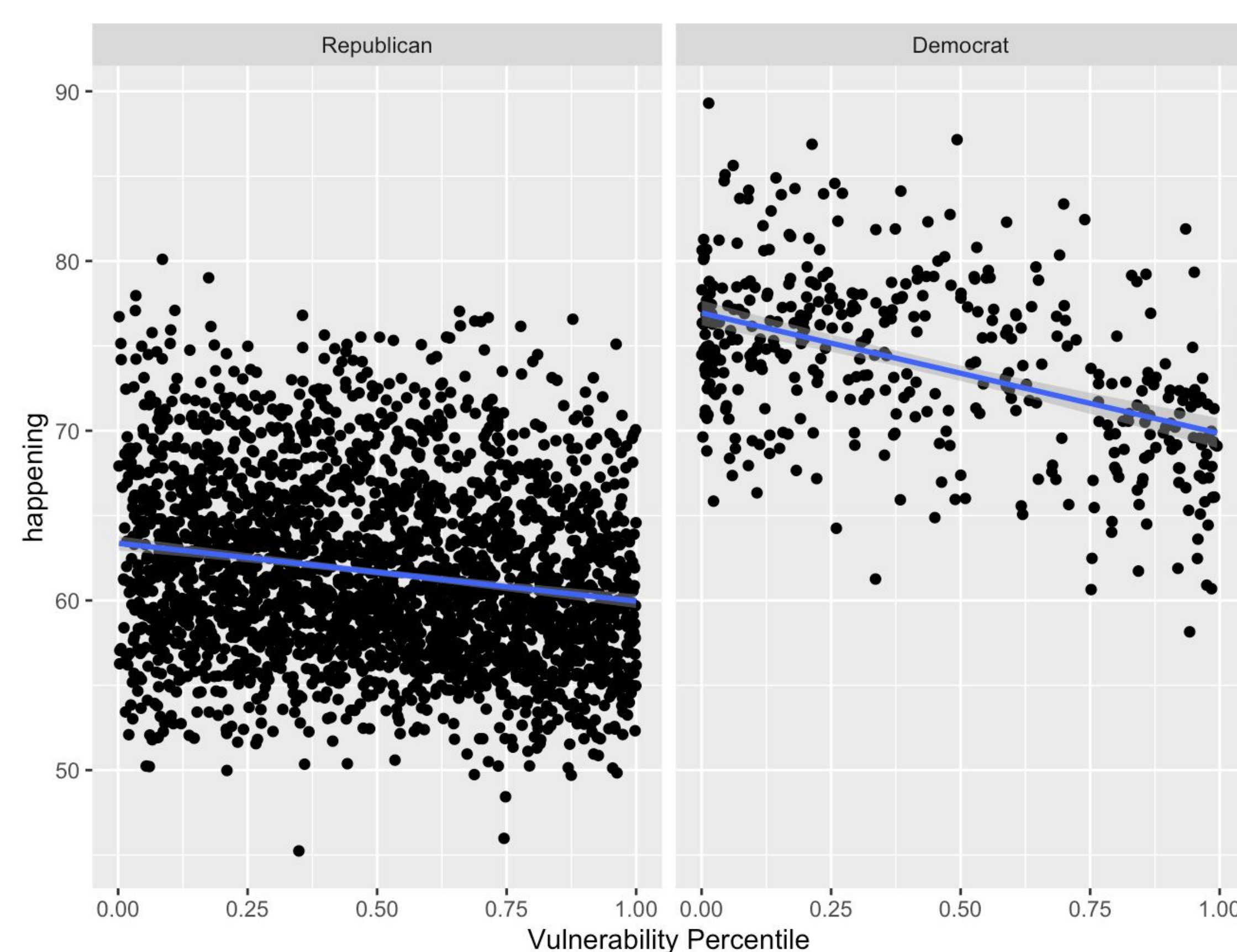


Figure 1:

Graphs showing the relationship between vulnerability percentile and proportion of county that believes climate change is happening in Republican and Democratic Counties.

Predicted Amount of Worried Inhabitants based on Vulnerability Percentile and Political Party

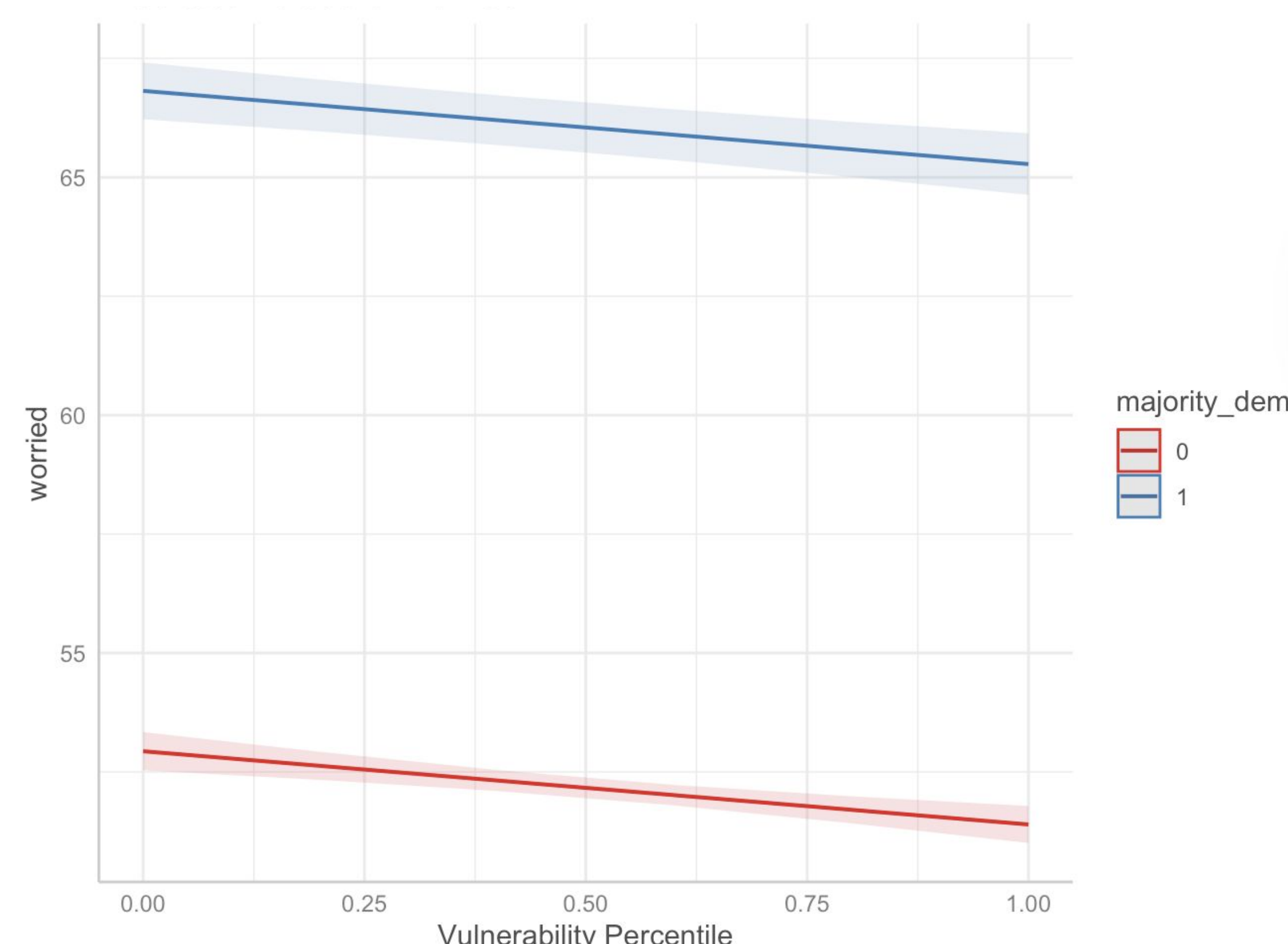


Figure 2:

Plot showing the predicted proportion of a county who will be worried about climate change based on vulnerability percentile and majority political party (linear regression)

References

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