Why are some individuals more prone to worry about climate change than others?

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Introduction

The glaciers are melting, the seas are rising, the weather is becoming more extreme, and more are becoming increasingly worried about the climate crisis. According to Yale research in 2021, **65% of Americans** are worried about climate change and **46%** believe climate change will harm them personally a great or moderate amount ("Yale Climate Opinion Maps 2021")!

Past research has mostly focused on younger individuals who are anxious about climate change as they are more likely to feel the full consequences of the climate crisis. However, other demographics have yet to be investigated thoroughly.

This study aims to explore whether other demographics, such as **race, gender, and educational attainment** also affect whether a person is more prone to be worried about climate change.

Methodology

Research Question: Why are some individuals more prone to be worried about climate change than others?

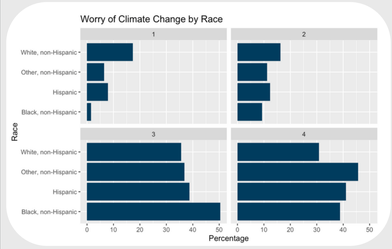
Hypothesis: Differences in race, gender, and education level are likely to affect an individual's level of worry. I believe they will worry about climate change at different degrees than their counterparts (i.e. people of color vs White individuals). To put it simply, they could be more or less worried about climate change.

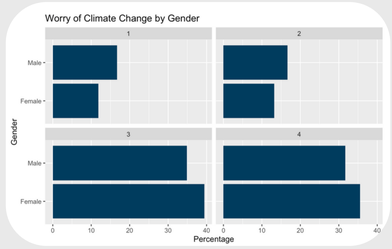
- **Ha:** People of color (POC) ≠ White
- **Hb:** Women ≠ Men
- **Hc:** Higher Education (some college + Bachelor's and Up) ≠ High School

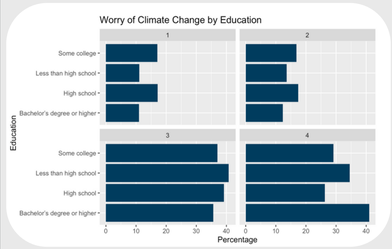
Data: 2021 nationally representative survey of U.S. adults aged 18 and older conducted by Yale with 1,642 observations.

- **Explanatory variables:** race, gender, and education level
- **Response variables:** level of worry/harm
- **Control variables:** generation and happening
- **Interaction terms:** happening*harm_personally, happening*harm_personally*harm_US

Visualizations







Based on the graphs, POC are more likely to choose level 3 or 4 than White respondents. The same is true for women compared to men. Bachelor's degree and up was most likely to choose level 4 while other groups were more likely to choose level 3.

Level 1: Not at all worried • **Level 2:** Not very worried • **Level 3:** Somewhat worried • **Level 4:** Very worried

Hypothesis Testing

Hypothesis Test

	Dependent variable:
	worry
raceBlack, non-Hispanic	0.249
	p = 0.158
raceOther, non-Hispanic	0.489***
	p = 0.008
raceHispanic	0.427***
	p = 0.008
genderFemale	0.187*
	p = 0.053
educationlessHighSchool	0.390*
	p = 0.098
educationsomeCollege	0.215
	p = 0.103
educationbachelorDegreeUp	0.500***
	p = 0.0001
generationMillennials	0.321
	p = 0.191
generationGenerationX	0.202
	p = 0.399
generationBabyBoomers	0.116
	p = 0.618
generationSilent	0.083
	p = 0.768
happening	2.207***
	p = 0.000
Observations	1,642
Note:	*p<0.1; **p<0.05; ***p<0.01

Ha (Race):

- Black = White
- Other ≠ White
- Hispanic ≠ White

Hb (Gender):

- Women ≠ Men

Hc (Education):

- Some College = High School
- Bachelor's degree and higher ≠ High School

I tested my hypothesis with the Ordinal Logit Regression because it is a statistical analysis model that displays the relationship between ordinal response variables and multiple explanatory variables, which is the type of data I am using for this study.

Model Discussion

Table 2: Ordered Logistic Regression Results

	Dependent variable: worry		
	Model 0 (1)	Model 1 (2)	Model 2 (3)
raceBlack, non-Hispanic	0.249	−0.490**	−0.452**
	p = 0.158	p = 0.013	p = 0.027
raceOther, non-Hispanic	0.489***	0.334	0.457**
	p = 0.008	p = 0.103	p = 0.032
raceHispanic	0.427***	0.048	0.066
	p = 0.008	p = 0.786	p = 0.720
genderFemale	0.187*	−0.041	−0.032
	p = 0.053	p = 0.699	p = 0.770
educationlessHighSchool	0.390*	0.403	0.462*
	p = 0.098	p = 0.125	p = 0.095
educationsomeCollege	0.215	0.305**	0.397***
	p = 0.103	p = 0.034	p = 0.008
educationbachelorDegreeUp	0.500***	0.689***	0.653***
	p = 0.0001	p = 0.00000	p = 0.00001
generationMillennials	0.321	0.179	0.276
	p = 0.191	p = 0.498	p = 0.322
generationGenerationX	0.202	0.090	0.088
	p = 0.399	p = 0.728	p = 0.746
generationBabyBoomers	0.116	0.018	−0.088
	p = 0.618	p = 0.942	p = 0.738
generationSilent	0.083	0.0001	−0.183
	p = 0.768	p = 1.000	p = 0.564
happening	2.207***	1.590***	0.446
	p = 0.000	p = 0.000	p = 0.461
harm_personally		1.802***	3.236***
		p = 0.00000	p = 0.008
harm_US			2.243**
			p = 0.015
happening:harm_personally		−0.029	−0.281
		p = 0.807	p = 0.517
happening:harm_US			0.151
			p = 0.640
harm_personally:harm_US			−1.088**
			p = 0.041
happening:harm_personally:harm_US			0.220
			p = 0.228
Observations	1,642	1,642	1,642
Note:			*p<0.1; **p<0.05; ***p<0.01

This is a snapshot of three different models that were tested with Ordinal Logit Regression, which is a statistical analysis model that displays the relationship between ordinal response variables and multiple explanatory variables. After testing multiple models with the explanatory variables and interaction terms, Model #2 is the strongest based on it's AIC and BIC. As the model grew stronger, the significance for some variables fluctuated.

Conclusion

This analysis mostly **supports Hypothesis A** as Black (less) and respondents of some other race (more) were likely to worry about climate change at a different degree than White respondents. However, there was not a difference for Hispanic respondents.

This analysis **does not support Hypothesis B** once the interaction terms were included in the model. There was no difference between genders in Model 2.

Lastly, this analysis does **support Hypothesis C** as the significance level for Some College and Higher was .01, and they were very worried about climate change compared to individuals with a high school education level.

Overall, based on my findings, it seems as though different demographics (race and education level) can impact an individuals level of worry.

References

"Yale Climate Opinion Maps 2021." Yale Program on Climate Change Communication, 18 May 2023.