



# Factors Attributing to Belief In the Existence of Climate Change

Zack Truce, Applied Data Analysis, Wesleyan University

## Introduction

- General public belief in anthropogenic climate change has not been universal. There has been a divide among people due to a variety of factors.
- The trapping of sun heat from greenhouse gases is increasing the average global temperature with some of the following catastrophic effects: rising of ocean waters threatening the loss of habitable land worldwide, mass migrations and deaths of certain species affecting food chains, more frequent and more powerful weather phenomena, and so on.
- Despite the real dangers that abound from an abnormally-warming planet, concerted efforts by politicians, dirty energy companies, and conspiracy theorists have been made over decades to discredit the evidence brought forth by natural and social scientists.
- Motivations to mislead the public include financial threats to big oil and gas companies as well as other invested industries, political control, a lack of scientific literacy needed to understand the data and events, and destabilizing democratic societies.

## Methods

### Sample

- Respondents (n=929) were drawn from the 2017 National Surveys on Energy and Environment (NSEE), adult residents of the United States, interviewed by land lines and cell phones in English, weighted by age, race, educational attainment, income, and gender to best reflect population parameters for these factors provided by the U.S. Census Bureau.

### Measures

- Belief in climate change was assessed using a series of questions regarding evidence of increasing average global temperature in the past four decades and the need for immediate actions by governments.
- Of the identifying demographic information, this research mainly focused on age groupings (categorically), level of education reached, and personal political leanings. The question of affiliation to political parties (Democrats, Republicans, etc.) was ignored.

## Research Questions

- Does one's level of education correlate positively with belief in climate change, as having a broader understanding of the world and science would suggest more trust in the evidence gathered by professionals?
- Does personal ideology determine if one is willing to ignore whatever rhetoric is espoused in order to believe that change has been occurring in the planet, threatening the future prospects of life on Earth?

## Results

### Univariate

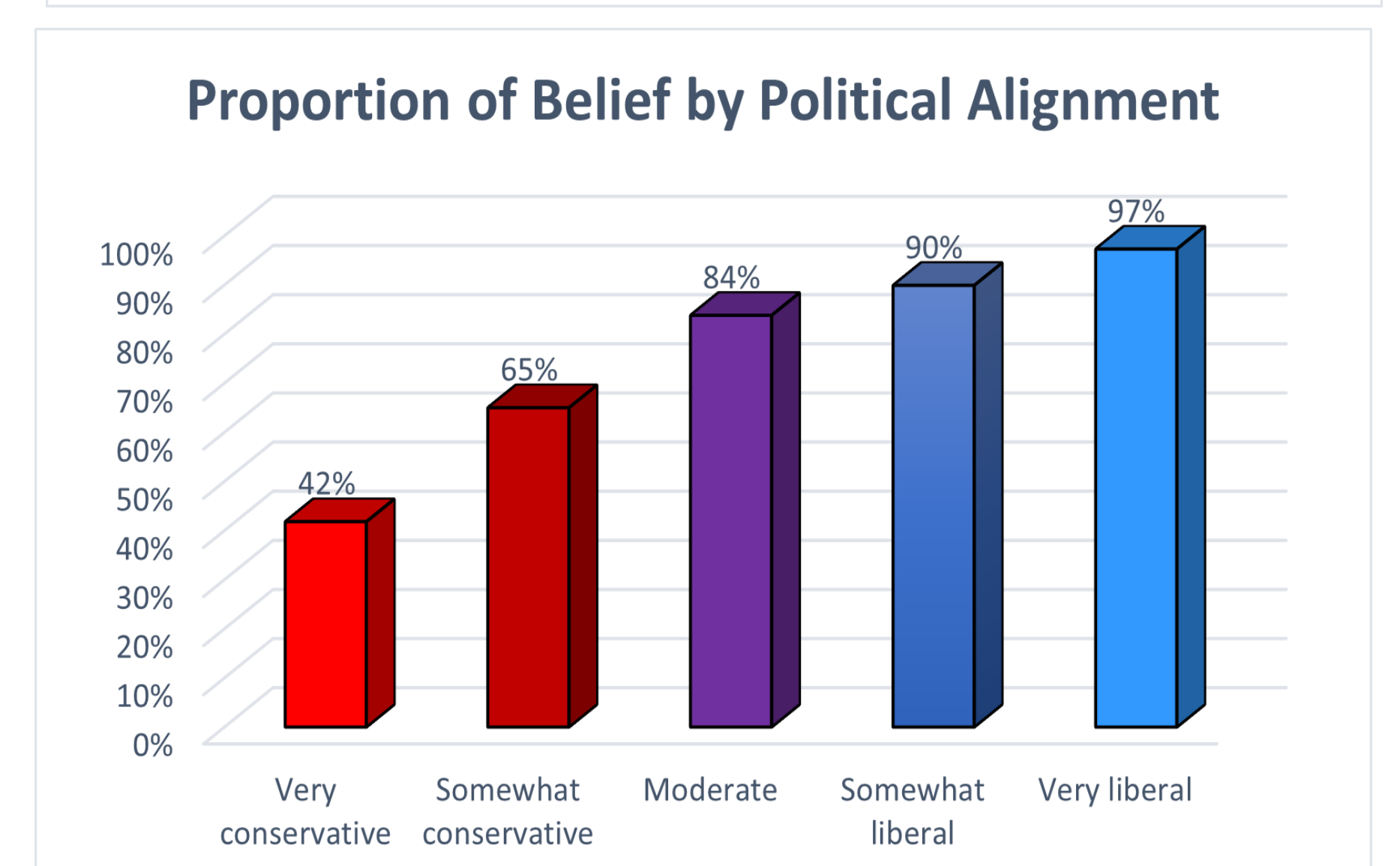
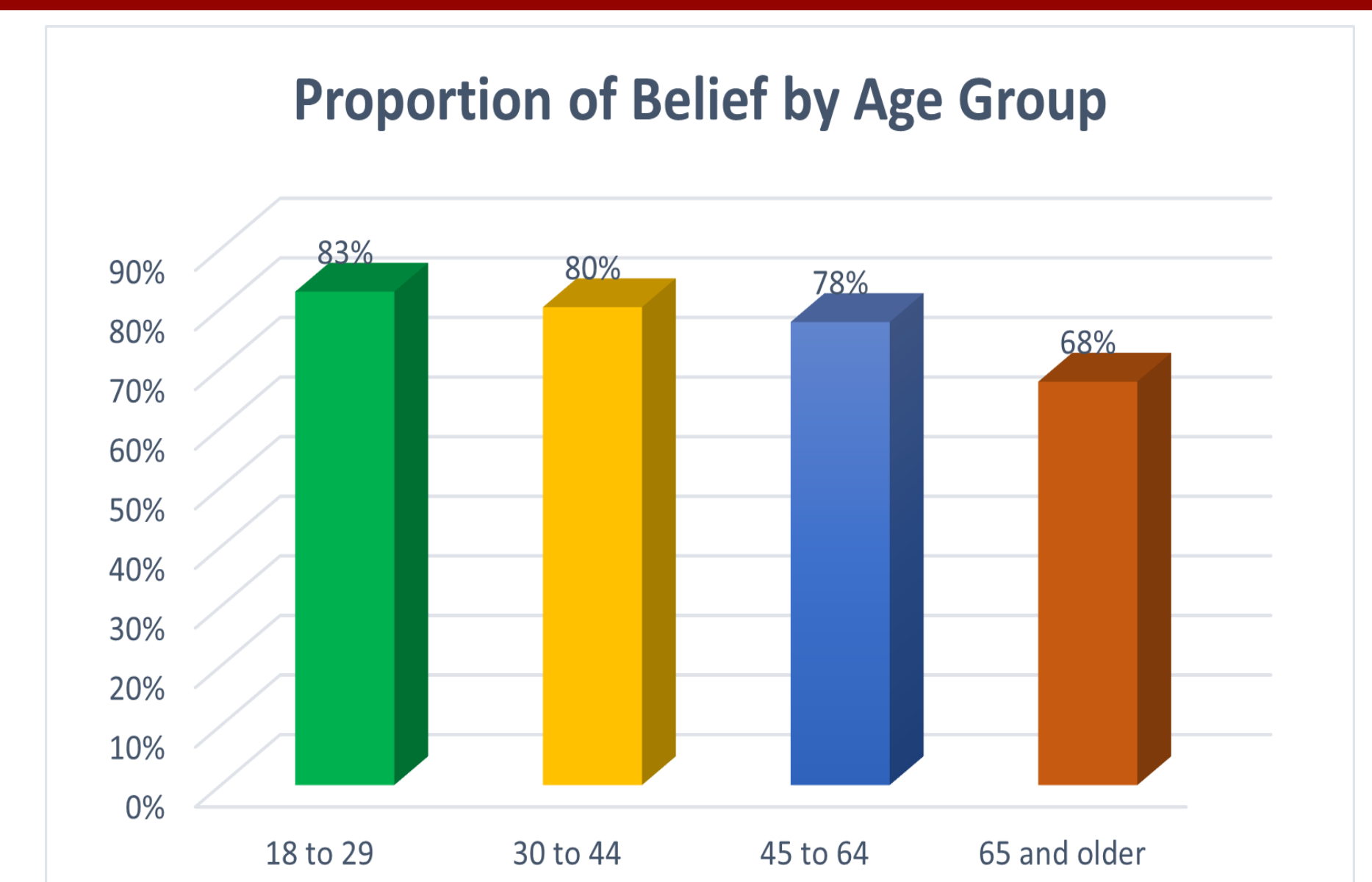
- 95% of respondents have received at least some amount of post-secondary education. A very small percentage of subjects did not finish high school.
- 36.1% of respondents identify as political moderates, with the remainder roughly evenly split between conservatives and liberals.

### Bivariate

- Chi-squared analysis showed **the strongest correlation for belief in climate change to how liberal a person's ideology is** (97.2% of most liberal respondents) versus how conservative (41.8% of most conservative),  $\chi^2=123.19$ , df 4,  $p<2.2 \times 10^{-16}$ . Conversely, it appears that one is less likely to believe in climate change **as they get older** ( $\chi^2=13.2$ ,  $p=0.0041$ ).
- There is also a correlation among college-educated people to believe in climate change, the most being at the graduate level.

### Multivariate

- The sample is overwhelmingly schooled above a high school level. Even with an apparent trend among the most-educated people, that factor does not moderate belief in climate change strongly enough.
- After controlling for all variables, belief has reliably shown to decline as people are older. Political views remain the strongest indicator for belief in climate change (OR=2.34).



## Discussion

- Strong trends in regards to age and political views in relation to belief in climate change have been confirmed. From this survey sample used, the connection amongst college-educated people is clear. Yet there was a disappointing lack of high school and non-high school graduates included to more accurately gauge that factor in.
- The substantial presence of people who willingly ignore or deny the threat of climate change, despite the vast body of scientific evidence, is cause for concern. The reach and speed of misinformation are formidable vectors to contend with in order to have the world's population support actions to adequately combat and attempt to reverse global warming.
- It is clear that political leaders need powerful incentive to refrain from discrediting and attacking climate science.
- Older generations need to realize the burden they place on their children to devoting their lives to fight global disaster.