

The effects of Climate Change vary depending on geographic location. Based on models and predictions, some areas in the United States will see increased average temperatures and some areas may see more precipitation. However, there is little information about regional perception of Climate Change. This study analyzed responses to a Climate Change survey to determine if there are any relationships between the region and their concerns. The survey used for data collection was created in Google Forms, and over 2,000 respondents participated. Three hypotheses were proposed for this study: 1) Coastal regions in the United States will have a principal concern of change in sea level. 2) Midwest regions will have a principal concern of change in frequency of droughts. 3) Regions more prone to see the effects of Climate Change will be more concerned than other regions. In the data analysis, hypothesis one was shown to be false, and the actual principal concern was change in temperature. Hypothesis two was also not supported, and the actual principal concern was in change in temperature. Hypothesis three was supported with coastal regions being the most concerned about Climate Change versus other regions.



The change in global or regional climate patterns due to increased levels of atmospheric carbon dioxide produced by the use of fossil fuels is slowly becoming a more prevalent problem. Some impacts on Climate Change are change in sea level, change in storm strength, etc (Figure 1). The increased impacts of Climate Change is opening the minds of obstinate minded individuals. Climate Change is now accepted among various important agencies, like the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA), creating more awareness. In fact, NASA has released projections of the world climate in the future (Figure 2). They have all agreed that human activities, like the increase of burning of fossil fuels and surplus of greenhouse gases from human activities, are all important factors in the cause of Climate Change ("Climate Change Facts"). Some people though still stubbornly hold to the false belief that Climate Change is not real. The next step to battling Climate Change would be to bring awareness and to present the facts to the common people, and spark the motivation to adapt their lifestyles to combat their carbon footprint. To better motivate audiences to adapt, an understanding of what concerns them in the first place must be achieved. By examining concerns on Climate Change by region and coastal zone in the United States, messages or broadcasts can be accurately targeted for specific audiences of a region.



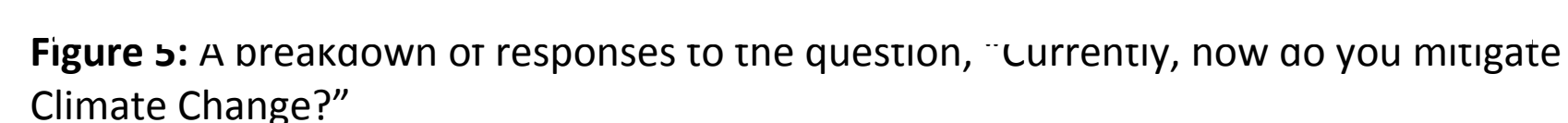
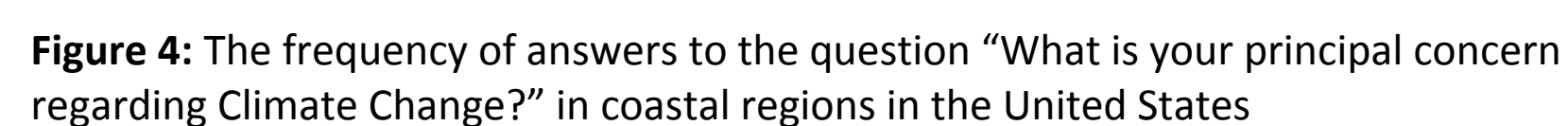
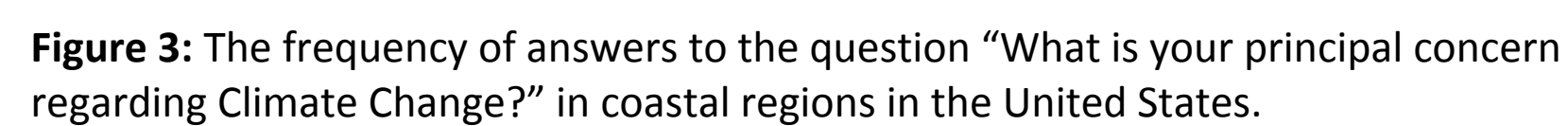
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- To determine the principal concerns of each region regarding Climate Change
 - To better understand each region's perception on Climate Change

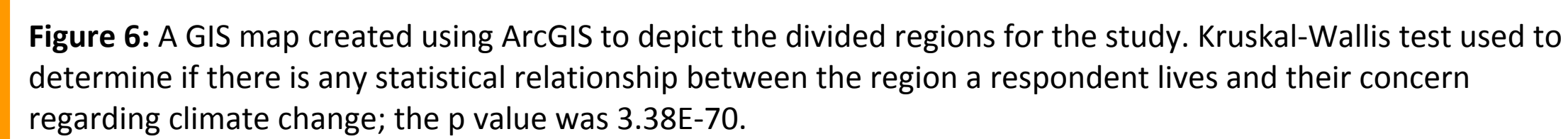
- A 5 question survey with minimal bias was created in Google Forms
- Some of the questions used were:
 - “In which regions of the United States do you live?”
 - “What sentence best matches your level of concern on Climate Change?”
 - “In your opinion, what is the most significant impact of Climate Change in your region?”

- The sampling audience was respondents over the age of 16 in the United States of America, and was taken on the computer (**Figure 7**)
- The survey was dispersed through several social media platforms to collect responses
- Respondents would be sorted into the regions that they live in (**Figure 6**)

- After the collections of responses, Microsoft Excel and Google Sheets was used to analyze the data collected



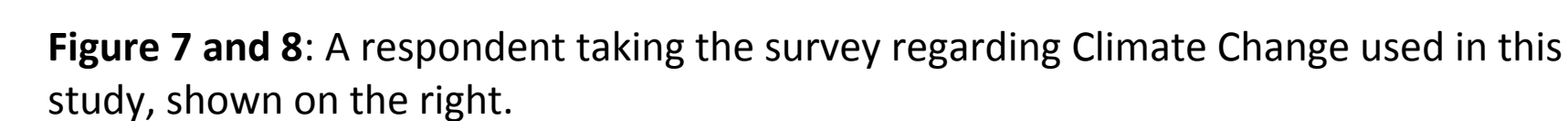
- The principal concern of the coastal regions (New England, Middle Atlantic, South Atlantic, and Pacific) regarding Climate Change is change in sea level, supporting the first hypothesis.
- The principal concern of midwestern regions (West North Central, West South Central, East North Central, and East South Central) regarding Climate Change is change in temperatures, proving the second hypothesis false.
- The most concerned regions were the coastal regions of the United States (New England, Middle Atlantic, South Atlantic, and Pacific), supporting the third hypothesis.



Region	Highly Concerned	Moderately Concerned	Concerned	Moderately Unc Concerned	Highly Unc Concerned
East North Central	45%	10%	8%	16%	21%
East South Central	53.20%	8.30%	21.30%	8.50%	12.80%
Middle Atlantic	41.40%	18.40%	19.80%	8.40%	11.90%
Mountain	42.10%	28.90%	7.90%	10.50%	10.50%
New England	54.70%	10.20%	9.50%	5.20%	20.40%
Pacific	55.40%	11.50%	11.50%	5.00%	16.50%
South Atlantic	34.90%	12.80%	11.10%	10.60%	30.60%
West North Central	37.80%	40.00%	11.10%	6.70%	11.10%
West South Central	46.30%	24.40%	9.80%	4.90%	14.60%

Region	Principal Concern
East North Central	Change in temperature
East South Central	Change in temperature
Middle Atlantic	Change in sea level
Mountain	Change in temperature
New England	Change in temperature
Pacific	Change in frequency of droughts
South Atlantic	Change in sea level
West North Central	Impacts on wildlife
West South Central	Change in temperature

- Hypothesis 1, stating that the principal concern of coastal regions regarding Climate Change is change in sea level, was proven false.
 - The principal concern regarding Climate Change in coastal regions was change in temperature, with 23.1% of respondents (**Figure 3**).
 - It should be noted that change in sea level is the second most common answer from these regions, with 21.8%.
 - Change in temperature could be the principal concern of Climate Change in this area because most people see the word “climate” and instantly think of the weather/temperature; therefore, they believe change in temperature is the correct answer.
- Hypothesis 2, stating that the principal concern of midwestern regions regarding Climate Change is change in frequency of droughts, was proven false.
 - For midwestern regions, the principal concern regarding Climate Change is change in temperature, with 33.9% of respondents (**Figure 4**).
 - Change in temperature could be the principal concern of Climate Change in this area for the same reason it was in coastal regions; however, midwestern regions experience more extreme temperatures, causing a genuine concern in change in temperature.
- Hypothesis 3, stating that the most concerned region on Climate Change would be the coastal regions, was proven correct.
 - For the Pacific and New England regions, more than 50% of respondents were highly concerned about Climate Change (**Table 1**).
 - Many coastal regions see the results of Climate Change everyday on the ocean; therefore, it is more difficult for a group of people to ignore the results when it is right in front of their faces.
 - It should be noted that majority of the regions though were concerned about Climate Change, even though the coastal regions were the most concerned percentage wise.
- Through additional analysis, other interesting results were found. For instance,
 - The most common way respondents mitigated Climate Change was through recycling (**Figure 5**).
 - More than half of regions in the United States had a principal concern of change in temperature (**Table 2**).



The purpose of this study was to determine each region's principal concern regarding Climate Change, and to better understand their perceptions on Climate Change. It was found that:

- Each region had some level of concern regarding Climate Change
- Among all of the principal concerns for each region, change in temperature was the most common.

In my future research regarding Climate Change, I plan on better understanding why respondents have a certain outlook on Climate Change. For example, do respondents gain their own opinion from their own research, or do they only believe what they hear in the media? I will also look more in depth into the role of politics in respondents' perceptions on Climate Change.

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