

Abstract

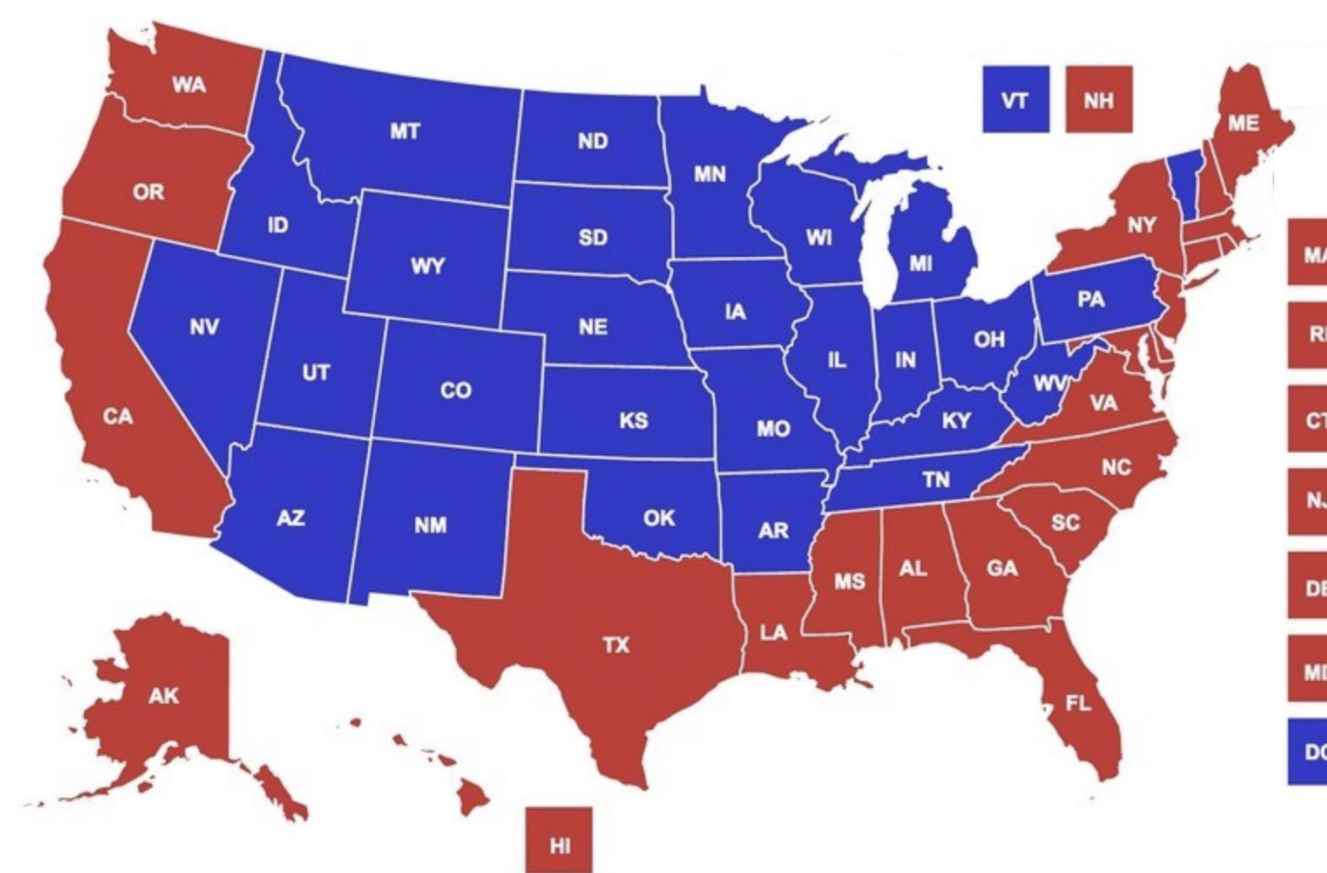
While studies have been done in other countries comparing coastal areas to interior areas in perceptions of climate change, there are few studies of this issue based in the U.S. This study addresses that gap by conducting a comparison of perceptions of climate change between coastal and interior states. The data used for this analysis come from The Yale Climate Opinion Maps. Specifically, this research compares opinions from respondents in coastal states with those of interior states, both cross sectionally at three time periods 2014, 2016 and 2018, and longitudinally, to see if the patterns of beliefs and concerns remain consistent. Descriptive statistics and paired t-tests revealed that coastal states have a higher percentage of respondents reporting high levels of concern about climate change for all questions when compared to non-coastal (Interior) states. There is also a slight decrease in concern and belief in global warming for interior states between 2016 and 2018. Our research suggests that further study needs to be done determining why these trends have appeared.

Introduction

- Studies have been done in other countries examining the influence of coastal proximity on perceptions of climate change (Milfont et al., 2014) but nothing has been done in the United States.
- Coastal areas are largely at risk for natural disasters, but it has not been established whether this has impacted the perceptions of residents in coastal states.
- This study seeks to examine if states with coastal borders have a different perception of climate change than that of the non-coastal (interior) states.

Methodology

A Map of the Coastal versus interior states. Coastal states are in Red, Interior states are in Blue



- The Data used were provided by The Yale Climate Opinion Maps from the years 2014, 2016 and 2018. The data provides estimated percentages of populations based on response to a survey.
- The states were first coded as either Coastal or Non-Coastal (Interior) state
- SPSS statistical software to compare statistics for the means of the estimated percentages for each of the coastal and interior states on estimated percentages of the counties within the states based on the following variables
 - Estimate percentage who think that global warming is happening
 - Estimate percentage who are somewhat/very worried about global warming
 - Estimate percentage who think that global warming is caused mostly by human activities
 - Estimate percentage who think global warming will harm them personally a moderate amount/a great deal
 - Estimate percentage who think global warming will harm people in the US a moderate amount/a great deal

Results

What Percentage of Counties Report Global Warming is Happening

	Year	Mean	Standard Dev.
Coast	2014	60.3675	5.28171
	2016	65.8461	5.95452
	2018	65.9361	6.32356
Interior	2014	58.1902	4.37921
	2016	63.8544	4.8899
	2018	62.6025	5.0536

What Percentage of Counties Are Worried About Global Warming

	Year	Mean	Standard Dev.
Coast	2014	50.5809	5.58801
	2016	53.5756	6.66637
	2018	56.3563	6.83378
Interior	2014	47.6071	4.36438
	2016	50.9175	5.13699
	2018	52.5943	5.04481

What Percentage of Counties Report Global Warming is Caused by Humans

	Year	Mean	Standard Dev.
Coast	2014	45.6718	4.84551
	2016	48.9208	5.29919
	2018	52.3683	5.74449
Interior	2014	44.1315	3.86154
	2016	47.4287	4.30687
	2018	50.3953	4.26933

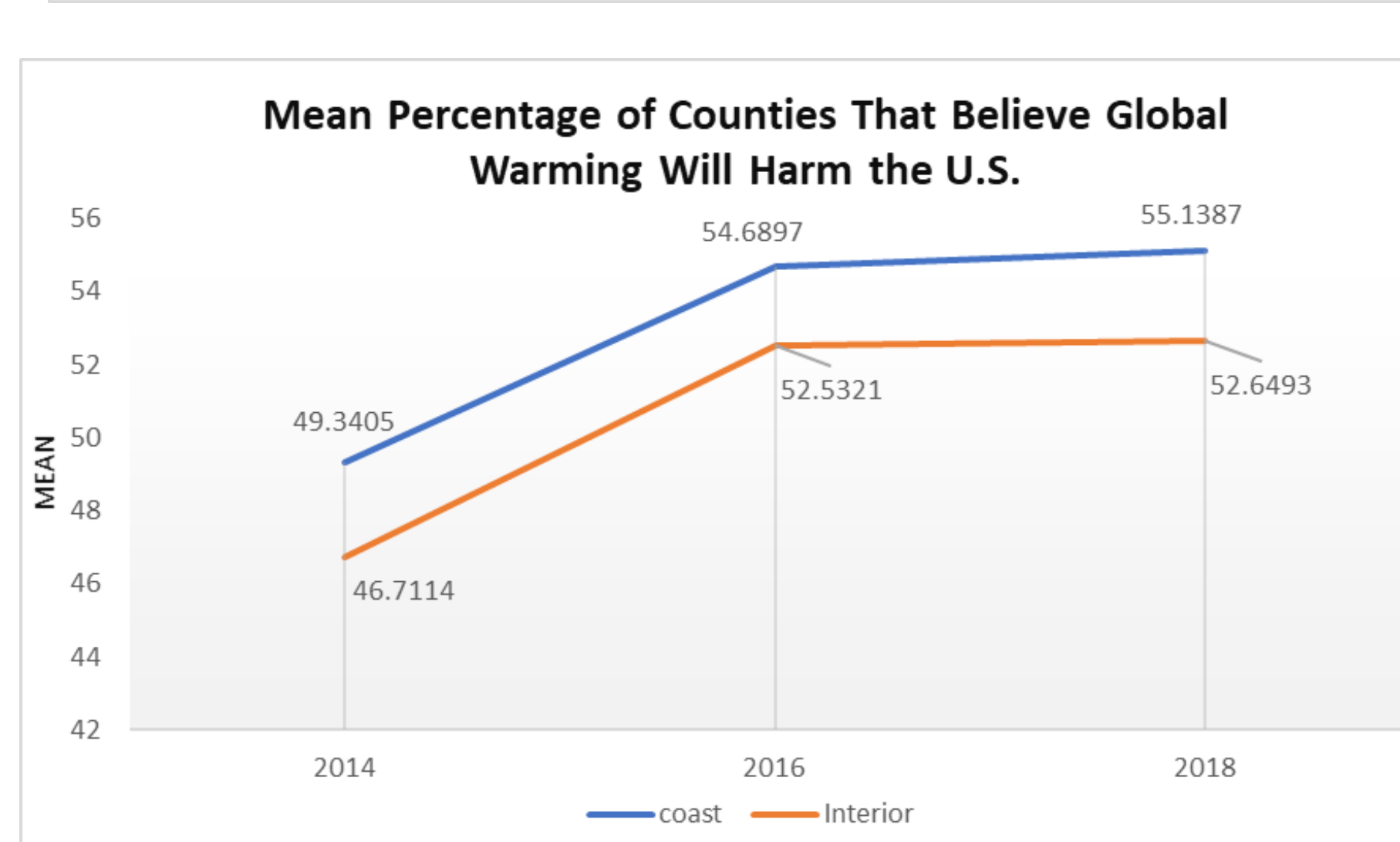
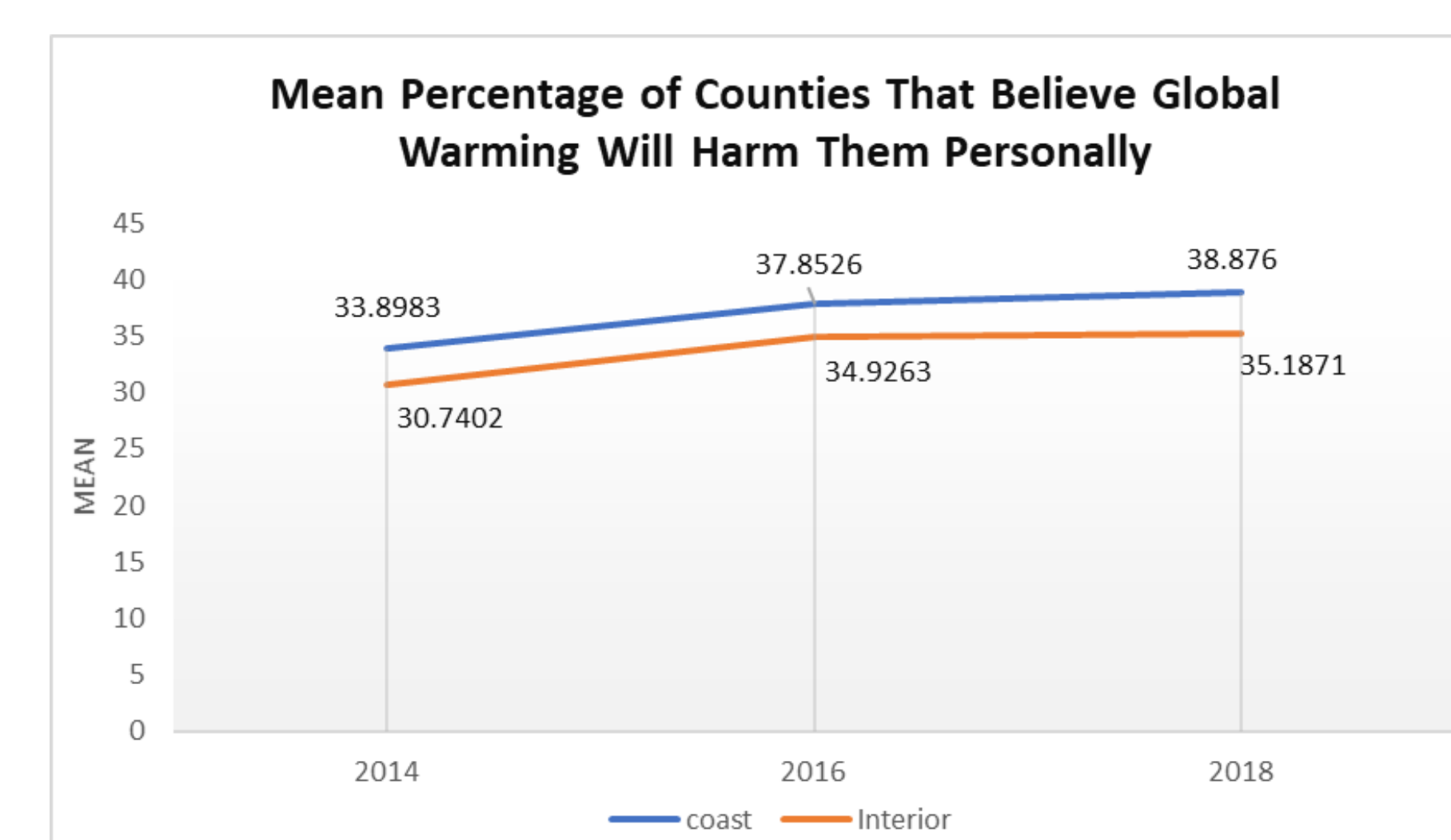
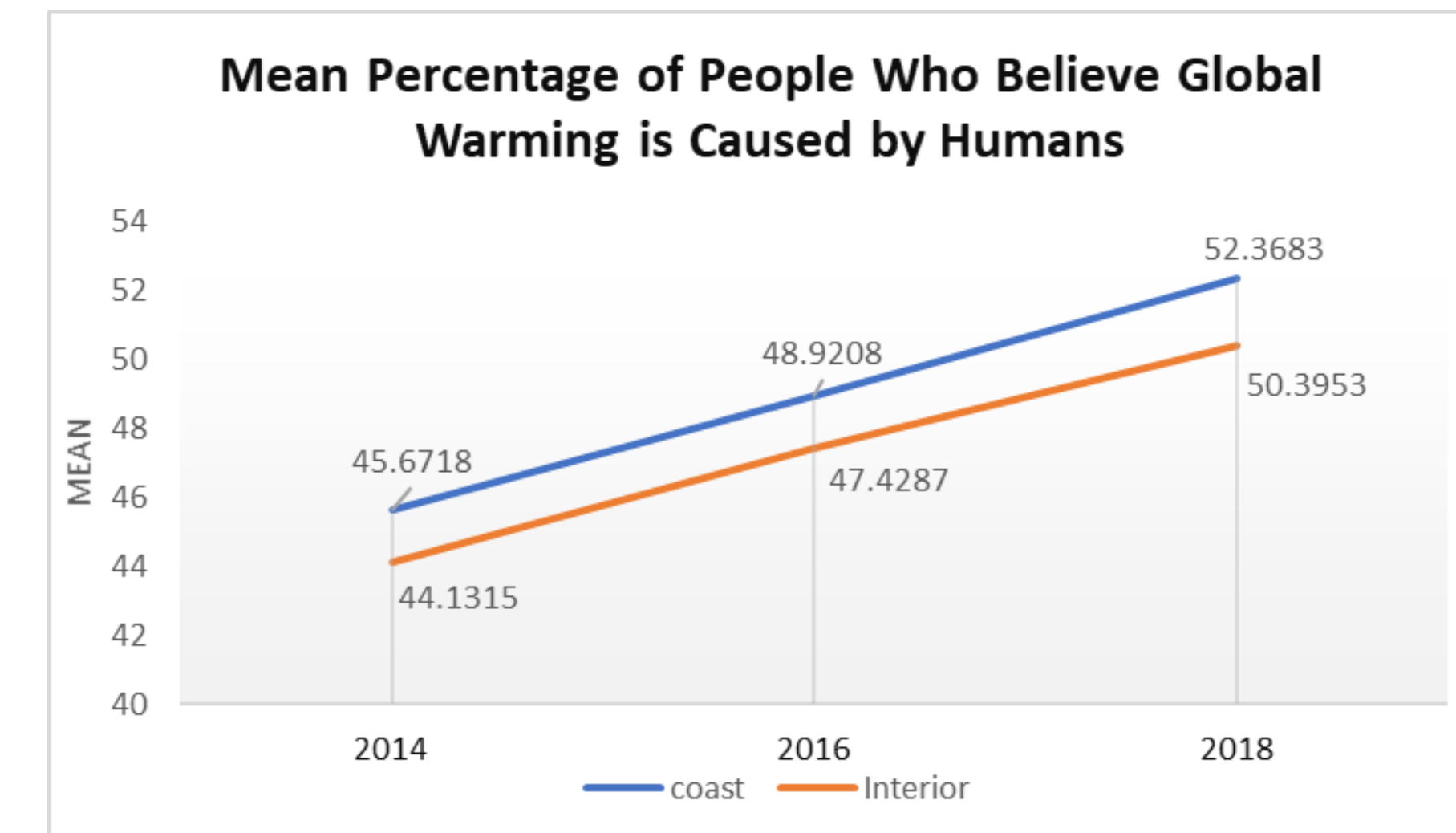
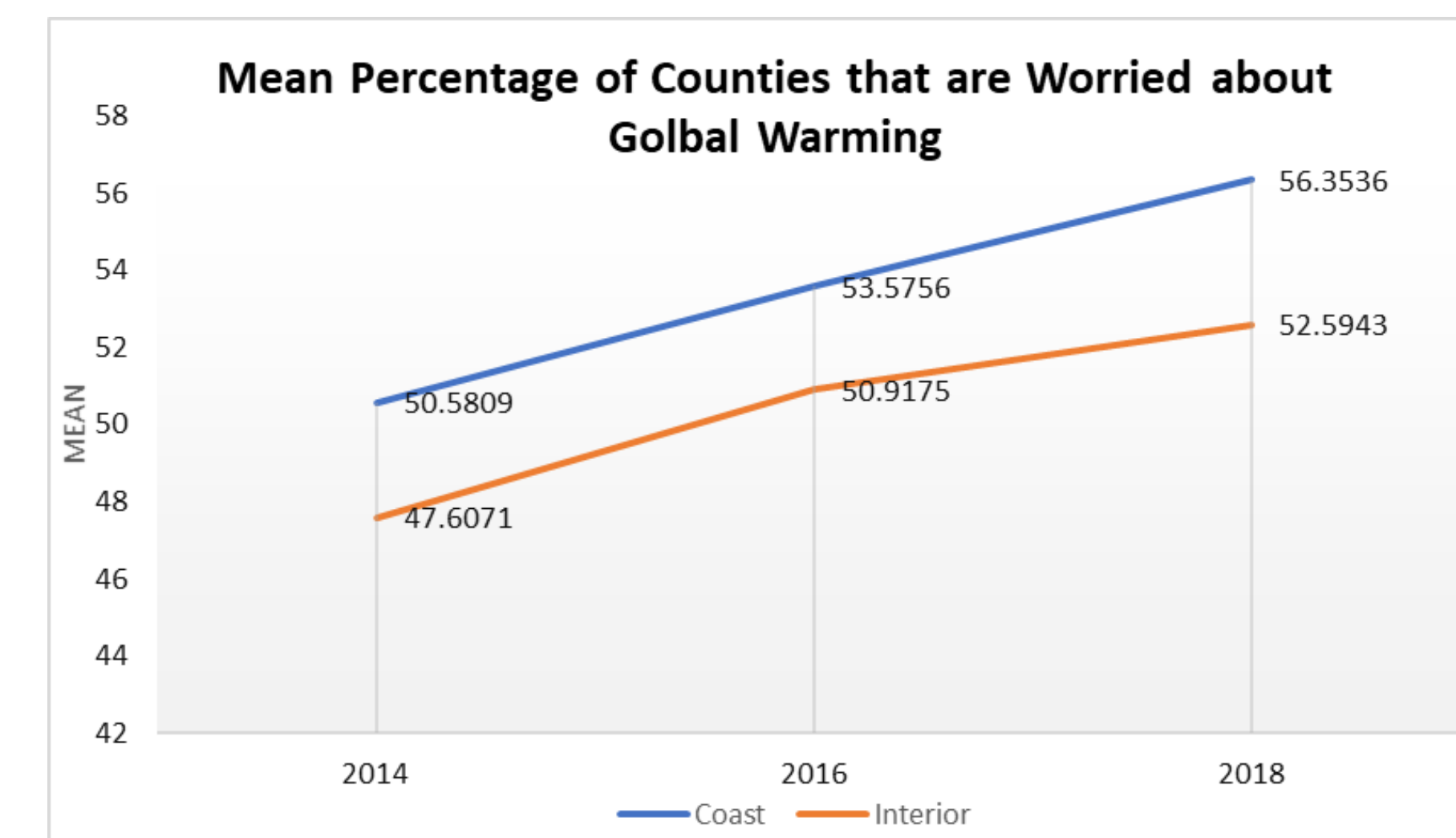
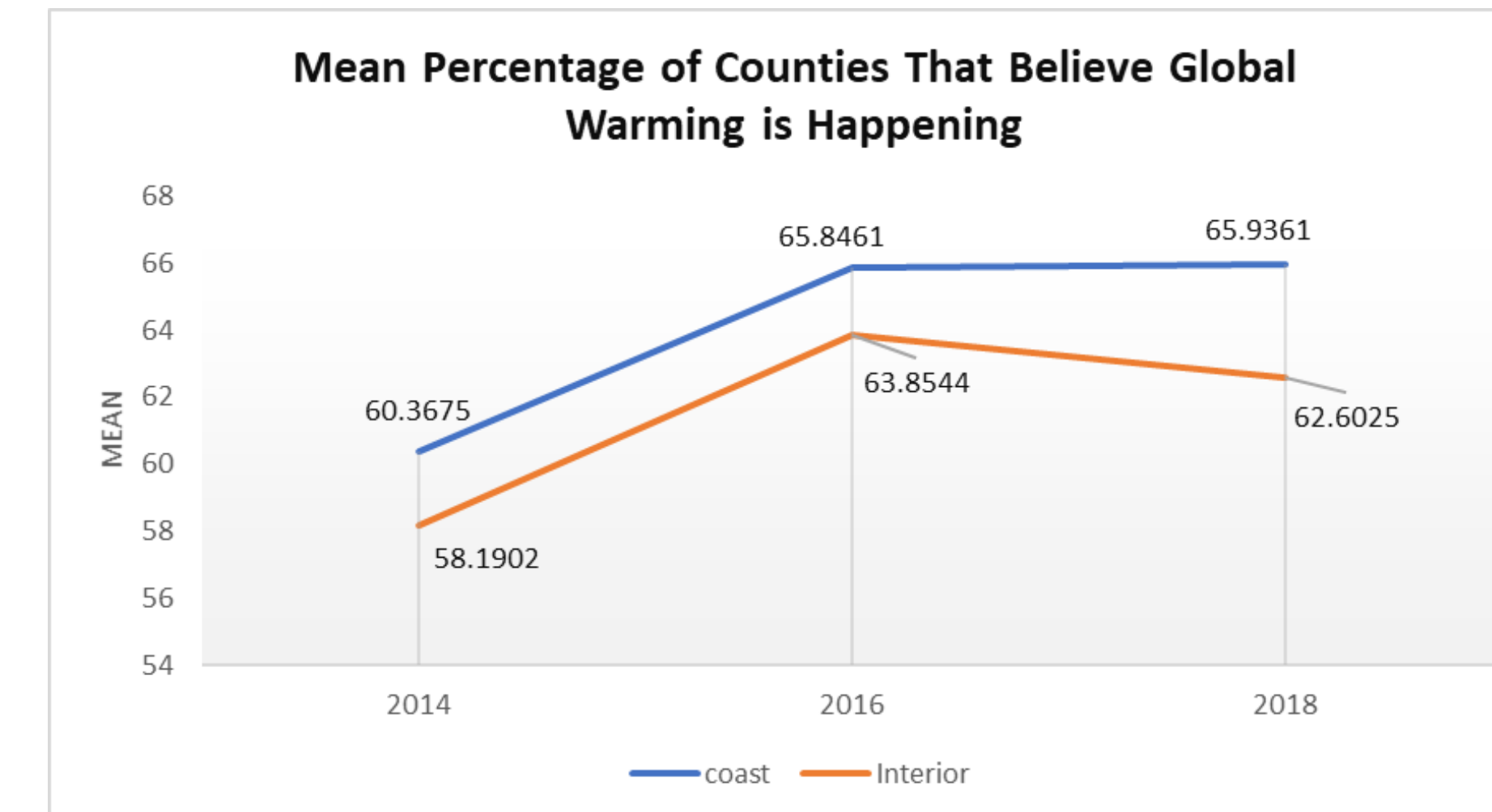
What Percentage of Counties Report They Believe that Global Warming Will Harm Them Personally

	Year	Mean	Standard Dev.
Coast	2014	33.8983	3.73202
	2016	37.8526	4.70438
	2018	38.876	5.12353
Interior	2014	30.7402	2.95023
	2016	34.9263	3.29278
	2018	35.1871	3.52989

What Percentage of Counties Report Global Warming Will Harm The United States

	Year	Mean	Standard Dev.
Coast	2014	49.3405	4.16186
	2016	54.6897	5.15993
	2018	55.6897	5.52997
Interior	2014	46.7114	3.48864
	2016	52.5321	3.9029
	2018	52.6493	3.86981

Plots



Conclusion

- Coastal states evidence a higher concern than the interior states on all questions. All the difference were significant based on a series of paired t-tests.
- Looking at the patterns over time, there seems to be a larger divergence in some questions, such as *is global warming happening*, but consistent patterns for the other questions such as *will global warming harm the U.S.*
- From examination of the trend lines shown in the graphs, it seems that the belief that global warming is happening decreased in the interior states between 2016 and 2018.
- The estimated percentages of counties that are *worried about global warming*, that *believe global warming is caused by human activities*, and that *believe global warming will harm the U.S.* appears to have slowed its rate of change from 2016 to 2018 when compared to the rate of increase between 2014 and 2016.

Future Direction

- Based on the trends in the data, there is a significant difference between the coastal and interior states regarding their perception of global warming
- In general, states showed an increase in the belief in climate change. However, there were a few states that did not follow this trend. Further research should be conducted to determine what is causing these outliers to break from the general trends
- Further study to understand the reasons for the higher perception of risk could clarify people's perceptions of living on the coasts in terms of climate change mitigation strategies. Further, a more detailed study of counties within coastal states could determine if it is proximity to the coast that increases belief in climate change.
- Further research should also be done to determine the accuracy, and if accurate, the cause of the decrease in growth of belief in climate change.

References

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Acknowledgments

"This publication (or program) was made possible by the National Science Foundation EPSCoR Grant No. 1757353 and the State of Delaware."