How does Proximity to Water Impact Income?

Aaron Halbert

How many times have you or a friend dreamed of a life along the beach, river or lake? That idyllic peaceful life that we envision only the well off can afford. Is it true that only the wealthy can afford to live in areas where the land to water ratio is relatively low? Does being near water automatically guarantee a higher income that can give you that life of leisure so many of us desire? Well that is the aim of our analysis here. To answer the question once and for all, “How much money can I earn by just being on the water?”

In order to answer this all too important question, my colleagues and I have used the “US Household Income Statistics f6551f68-f” dataset from Kaggle.com. It provided all the necessary information to answer our question on the surface. A list of all the cities in the US, the total area of land in the city, the total area of water in the city, and the mean income of the city.

Once the data is loaded into python the [‘Mean’] column is stored in a variable called mean, as well as the [‘ALand’] column into the variable land, and the [‘AWater’] column into water. From there I calculated the total percent of water in a city using the following formula: (water/(land+water))\*100. At this point I graphed the percent of area covered by water in a city vs the mean income of the city. This provided a scatter plot that I then fit with a regression line. The resulting regression line and R value of 0.017037 highly suggest that there is no correlation at all between these two factors.

To explore if this result differed between different income levels the data was sliced to look at the top .1%, 1%, and 10%, earning cities. The results were largely the same with very similar R values.

In conclusion given this particular dataset there seems to be no discernible relationship between one’s proximity to water and the mean income of the city. While this does not necessarily mean that being on the beach or some other idyllic waterfront is not connected to higher incomes, it does show that the amount of water in a city has little to no impact on the average income of the entire city. To better determine this in the future we could further specify specific households that are within a certain square mileage of a clearly defined body of water vs households outside that zone. However even if there is a correlation between these two data points after that, it still does not imply acasual relationship between the two. More study would be needed past that point to determine that.