Restaurants, Location and Ratings

Hypothesis:
Seafood is a large and popular food that many people often enjoy. Furthermore, seafood that is fresh and high quality are often praised and sought after. With an interest in restaurants and a love for seafood, we wanted to investigate the effect that a seafood restaurant's location has on the rating and price point of a restaurant. Specifically, we wanted to test this as the hypothesis that: the closer the restaurant is to the ocean, the higher the rating and price point of a feature would be.

Data:
We sourced our data by utilizing Yelp's API to get information about resulting restaurants from a "seafood" search. Therefore, placing our data into a local database, we had a table with the following columns of interest: name, address, state, longitude, latitude, distance_from_ocean, region, price point, reviews_count, and ratings. Because we had ~1000 data points, we wanted to use as much data as possible and therefore converted our null values into their respective average values. For example, ratings with "nan" values would be given a rating of "3" out of "5".

Findings:
Claim #1: The price point of a "seafood" restaurant is not the same per region,
Support for Claim #1: Using a Kruskal-Wallace H-test, we get a p-value of .0031. Therefore, we reject the null hypothesis that the price point is the same per region. Therefore, we can statistically accept that the price point of restaurants per region is different. This makes sense as central regions are farther away from the ocean versus states that belong to regions like the Northeast.

Claim #2: The price point has an effect on the rating of a "seafood" restaurant.
Support for Claim #2: Running an independent t-test, we get a p-value of 0.003, meaning that we reject the null hypothesis that the price point has no effect on the rating of a "seafood" restaurant. Therefore, we accept the alternative hypothesis that the price point does have an effect on the rating of a "seafood" restaurant. This makes sense as higher prices often signify higher quality which leads to higher ratings.

Claim #3: There is a negative correlation between the distance a restaurant is from the ocean and its price point. (As the distance from the ocean decreases, the price point increase)
Support for Claim #3: With a p-value of 0.095 we fail to reject the null hypothesis. Therefore, we accept that there is no correlation between the distance a restaurant is from the ocean and its price point. There are many caveats to this claim as prices may be cheaper due to an easier access to seafood. Additionally, restaurants may ship there seafood from coastal areas inflating prices in areas farther from the ocean.