**Do earthquakes over 6.1 magnitude have an effect on trade in Iceland?**

After manipulating the data so that statistical tests could be performed, a few inferences were made on the effect of GDP growth in Iceland by large earthquakes. The original data was plotted as a line plot, with a scatter plot of earthquakes over 6.1 magnitude overlaying on the same figure (shown below). The average change after a 6.1 magnitude earthquake was 2.24% per year. The p-value was calculated and was 6.8e-35, with a preset significance level (alpha) of .05. Then a correlation coefficient test was executed, and the result was -.09. Since the correlation coefficient was relatively small, it indicates there is no correlation between earthquake magnitude and trade in Iceland. The statistics prove there is a reduction in trade after large earthquakes. The p-value indicates that we can reject the null hypothesis. This could be a potential type I hypothesis error. The relatively small number of earthquakes over 6.1 magnitude could have led to this type I error. When the p-value was calculated it took into account all earthquakes, not just those over 6.1 magnitude. There is just not enough data to conclusively prove it one way or the other. One other data limitation was one of the earthquakes occurred in 2008. It is hard to analyze this point because of the financial collapse that had large implications to the economy.

A group of people on a map

Description automatically generated

**Do earthquakes over 6.1 magnitude have an effect on GDP in Iceland?**

After manipulating the data so that statistical tests could be performed, a few inferences were made on the effect of GDP growth in Iceland by large earthquakes. The original data was plotted as a line plot, with a scatter plot of earthquakes over 6.1 magnitude overlaying on the same figure (shown below). The average change after a 6.1 magnitude earthquake was -0.33% per year. The p-value was calculated and was .02, with a preset significance level (alpha) of .05. Then a correlation coefficient test was executed, and the result was .07. Since the correlation coefficient was relatively small, it indicates there is no correlation between earthquake magnitude and trade in Iceland. The statistics prove there is a reduction in trade after large earthquakes. The p-value indicates that we can reject the null hypothesis. This could be a potential type I hypothesis error. The relatively small number of earthquakes over 6.1 magnitude could have led to this type I error. When the p-value was calculated it took into account all earthquakes, not just those over 6.1 magnitude. There is just not enough data to conclusively prove it one way or the other. One other data limitation was one of the earthquakes occurred in 2008. It is hard to analyze this point because of the financial collapse that had large implications to the economy.

A picture containing table, filled, man, different

Description automatically generated

**Do earthquakes over 6.1 magnitude have an effect on manufactures exports in Iceland?**

After manipulating the data so that statistical tests could be performed, a few inferences were made on the effect of manufactures exports in Iceland by large earthquakes. The original data was plotted as a line plot, with a scatter plot of earthquakes over 6.1 magnitude overlaying on the same figure (shown below). The average change after a 6.1 magnitude earthquake was 0.11% per year. The p-value was calculated and was 8.1e-8, with a preset significance level (alpha) of .05. Then a correlation coefficient test was executed, and the result was -.23. Since the correlation coefficient was relatively small, it indicates there is no correlation between earthquake magnitude and trade in Iceland. The statistics prove there is a reduction in trade after large earthquakes. The p-value indicates that we can reject the null hypothesis. This could be a potential type I hypothesis error. The relatively small number of earthquakes over 6.1 magnitude could have led to this type I error. When the p-value was calculated it took into account all earthquakes, not just those over 6.1 magnitude. There is just not enough data to conclusively prove it one way or the other. One other data limitation was one of the earthquakes occurred in 2008. It is hard to analyze this point because of the financial collapse that had large implications to the economy.

A close up of a map

Description automatically generated