**8102 Lab 2** Yue Lin

**Assignment Ⅰ**

The box map and box plot for variable *AL99PC* are shown in Figure 1, where negative outliers in the box map are highlighted. According to Figure 1, there is a higher percent of Alianza Votes over Valid Votes in the center Argentina; compared to that in the eastern and southern Argentina, the percent of Alianza Votes over Valid Votes is observed to be higher in the north-west. The negative outliers are more clustered in the east.

A close up of a map

Description automatically generated

Figure 1. Box map and box plot for variable AL99PC.

The box map and box plot for variable *TURN99PC* are shown in Figure 2, where negative outliers in the box map are highlighted. According to Figure 2, there is a higher Percent of Effective Votes over Valid Votes in the western Argentina, which gradually decreases as it goes to the east. Negative outliers are mostly located in the east.

A screenshot of a cell phone

Description automatically generated

Figure 2. Box map and box plot for variable TURN99PC.

**Assignment Ⅱ**

The box plot for variable *INC* is shown in Figure 3, where the highest *INC* value is highlighted. The selected value seems to still fall into the 1. 5 times interquartile range (IQR), so it is not an outlier.

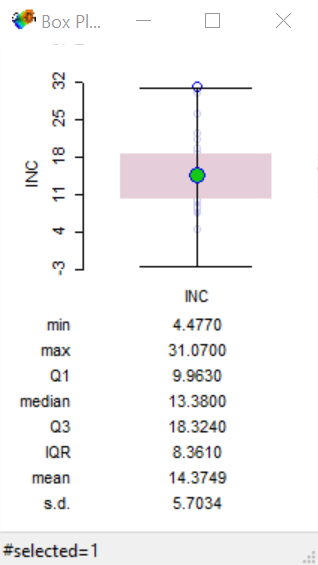


Figure 3. Box plot for variable INC.

As is shown in the scatterplot, the observation with the highest *INC* value is not a potential outlier, because it falls approximately on the best-fitting line in the plot.

The quantile plot for variable *INC* is shown in Figure 4, where the highest *INC* value is highlighted. The observation with the highest *INC* value seems not to be an outlier here because its value is not distinctively different compared to its neighbors. I don’t think there are any spatial outliers here because the spatial variations are gradual among the research units.

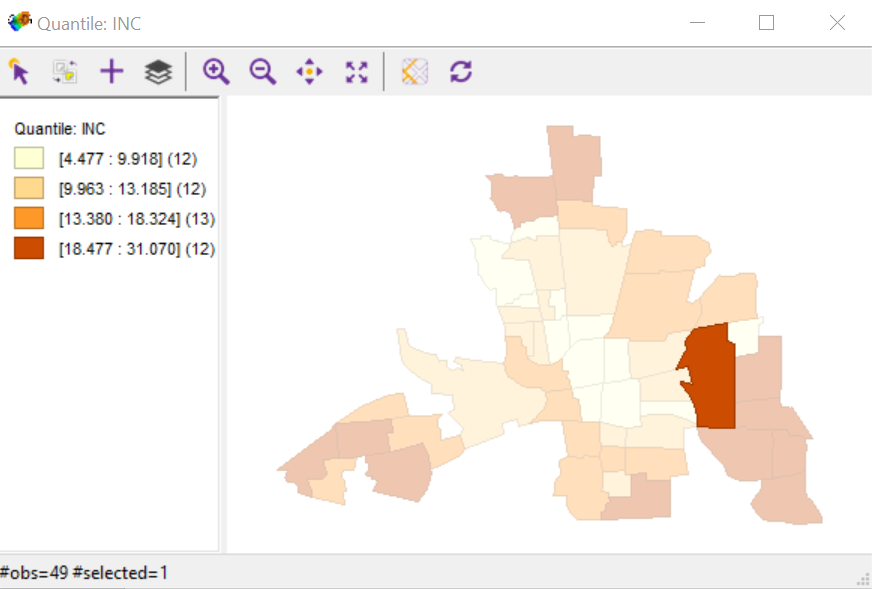


Figure 4. Quantile plot for variable INC.