Week 10 Problem Set

Nguyen Tien Anh Quach

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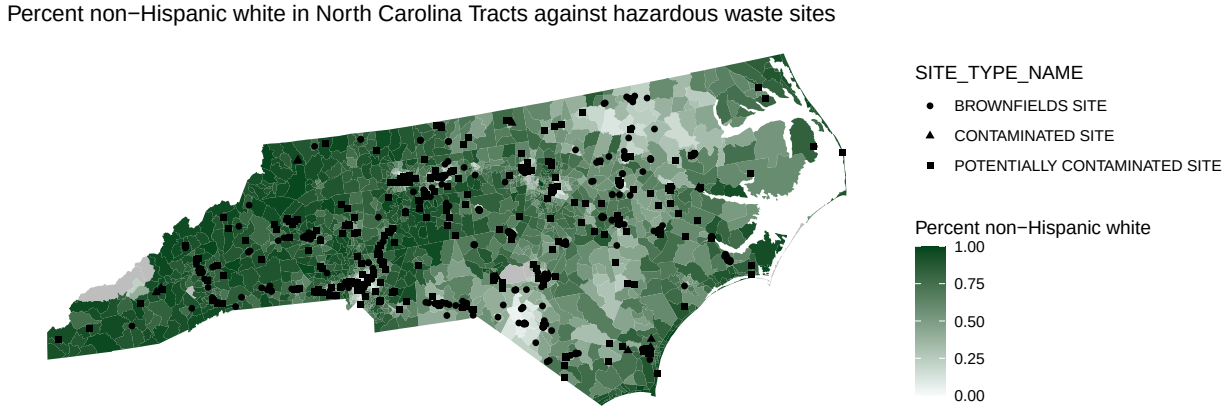
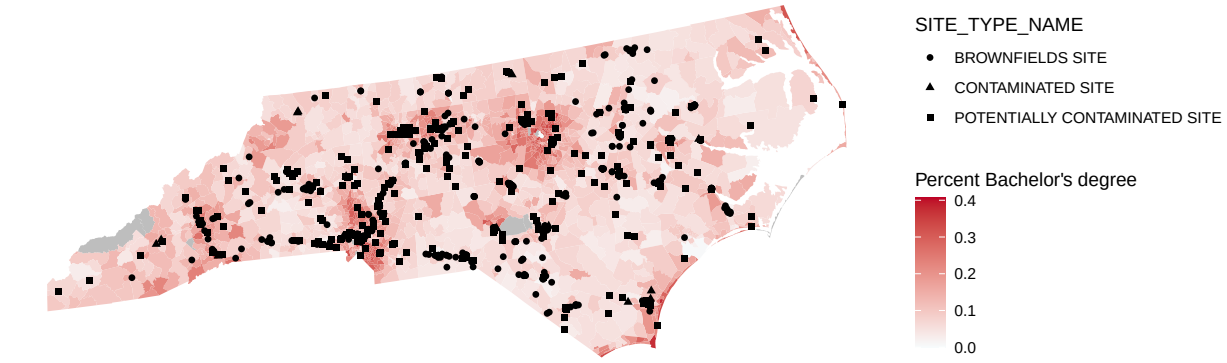




2. Make two tables that summarize the census variables for areas within the buffer distance and outside of the buffer distance (mean, sd). 10

Percent non Hispanic white within and outside 5 km buffer

The table below showed the mean and SD of percent non-Hispanic white within (near) and outside (far) of the 5 km buffer zone.

Proximity	Mean pct. non-Hispanic white	SD of pct. non-Hispanic white
far	0.7423896	0.1874557
near	0.5981074	0.2587321

Percent Bachelor's degree within and outside 5 km buffer

Similar to the table above, this table shows the percent Bachelor's degree of people living within (near) and outside (far) of the 5 km buffer.

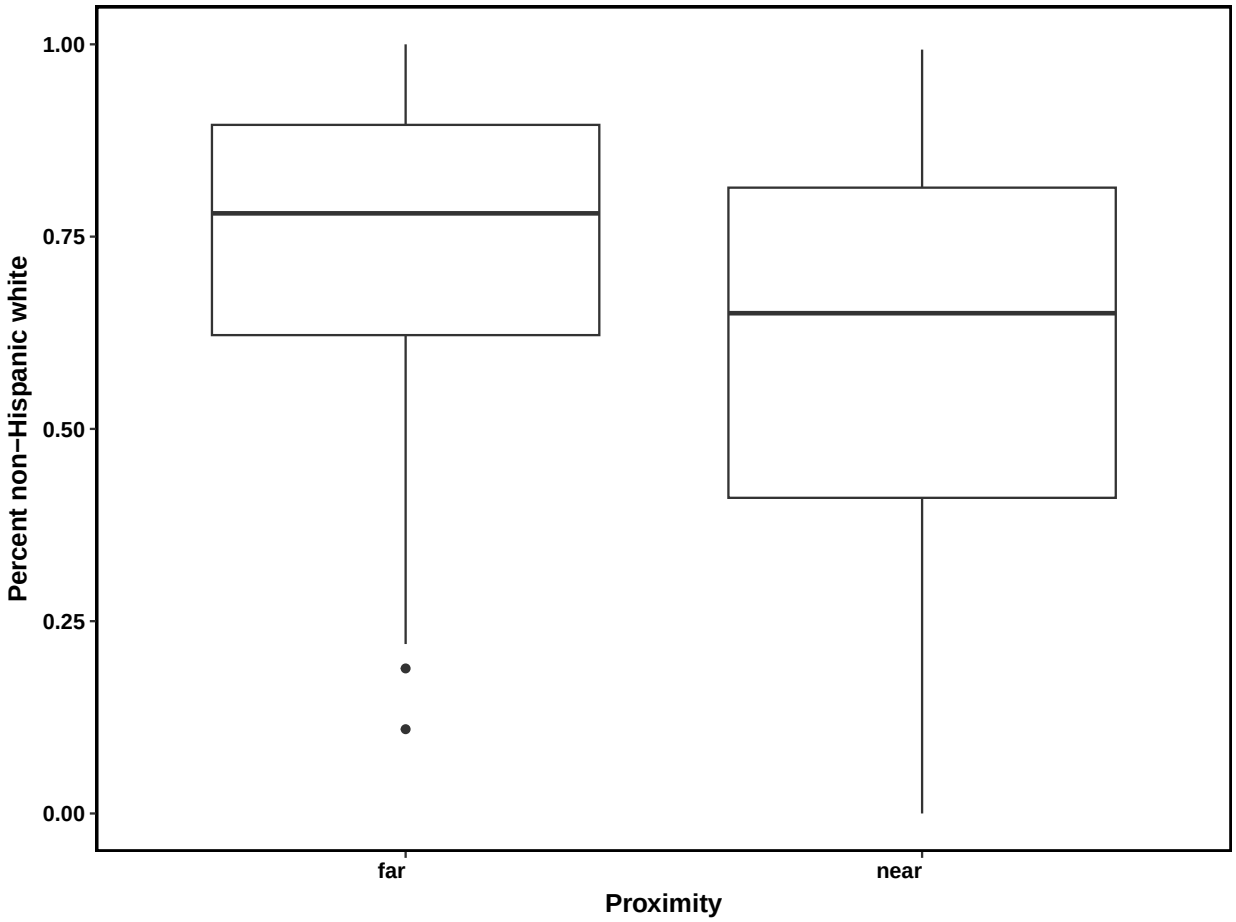
Proximity	Mean pct. Bachelor	SD of pct. Bachelor
far	0.1437078	0.0837007
near	0.1262237	0.0785374

3. Test the difference in means (or medians) for the two census variables inside and outside of the 5km buffer. Present your results from your tests in a few sentences. Make sure to check your assumptions. 20 points

Testing near vs. far for percent non-Hispanic white

I used Shapiro-Wilk test to test for the normality of percent non-Hispanic white. The test yielded significant results ($p < 0.001$). I attempted to log transform the data, which did not help with the normality ($p < 0.001$). Therefore, I finally used the Wilcoxon test to test the difference in mean of percent non-Hispanic white between near and far tracts.

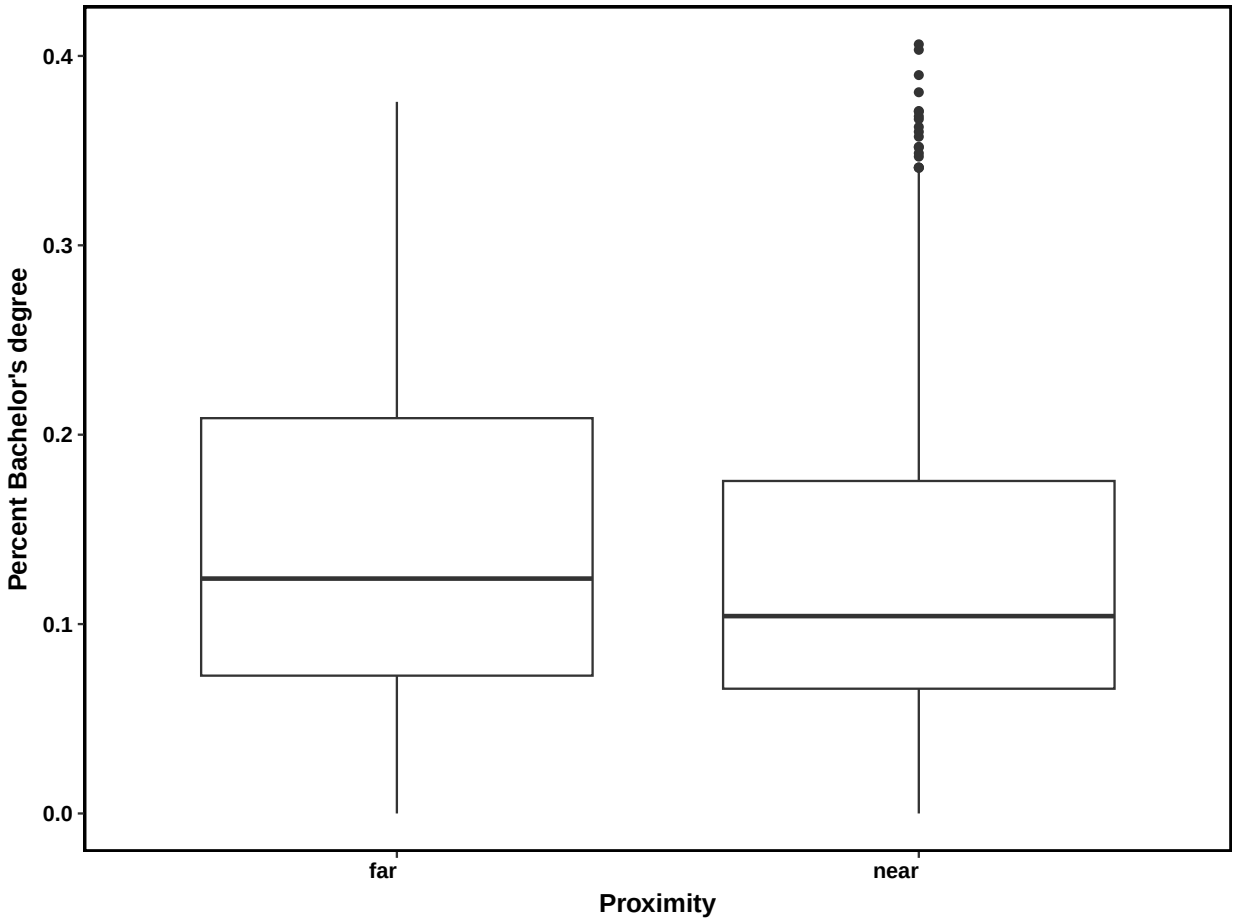
The test yielded significant result ($p < 0.001$), showing that mean percent non-Hispanic white is significantly lower at near tracts (figure below).



Testing near vs. far for percent Bachelor's degree

Similar to percent non-Hispanic white, percent Bachelor's degree data are non-normal before ($p < 0.001$) and after log-transformation ($p < 0.001$). Therefore, I used Wilcoxon test to test for the significant difference in mean percent Bachelor's degree between near and far sites.

The test yielded significant results ($p < 0.001$); therefore, percent people with Bachelor's degree at near sites is significantly lower than that at far sites (figure below).


Percent Bachelor's degree
0.4
0.3
0.2
0.1
0.0
far
near
Proximity