With ‘Lower income’ defined as 1 STD below median household income in Denver and ‘Higher Income’ defined as 1 STD above median household income in Denver:

Q1: One Sample T-test

H0: There was no change in crime rate from 2014-2017

H1: There was a statistically significant change in crime after legalization was implemented (2014-2017)

Q2: Independent Two Sample T-test

H0: There is no difference in crime rate reduction between low and high income neighborhoods (2014-2017)

H1: Legalization has changed the crime rate in low income neighborhoods more than high income neighborhoods (2014-2017)

Q3:

Does the dispensary count (in proportion to the population) in low income zip codes have a statistically significant correlation with the violent crime rate in those zip codes for 2017-2019?

Does the dispensary count (in proportion to the population) in low income zip codes have a statistically significant correlation with the alcohol related crime rate in those zip code for 2017-2019?

~~Q4:~~

~~H0: Being a lower income neighborhood and having a high dispensary count/pop has no effect on rate of reduction in crime.~~

~~H1: There is a higher probability of having a steep rate of reduction in crime given a lower income neighborhood and a high dispensary count (in proportion to the population).~~

Does alcohol crime go down more in rich or poor neighborhoods?

Denver crime data

Denver retail dispensary locations

Median income for Denver overall

Median income for zip codes in Denver

Low income defined as 1 std under mean of income