Business Data Analysis

Control Group - Manhattan Without Chelsea
Sample Group - Chelsea

The Business data for the years 2000 to 2013 has been looked into for the analyzing of the Social Impact that the Chelsea Highline has had on its surroundings. To see for all round social impacts, the business data showing total counts per zip code for the city of New York, spatially joined with the shape file of Manhattan (excluding Chelsea) - Control Sample (excluding Chelsea so as to make sure no correlation exists between the datasets) and Chelsea (only) to calculate the impact the Highline had on the Businesses in and around it.

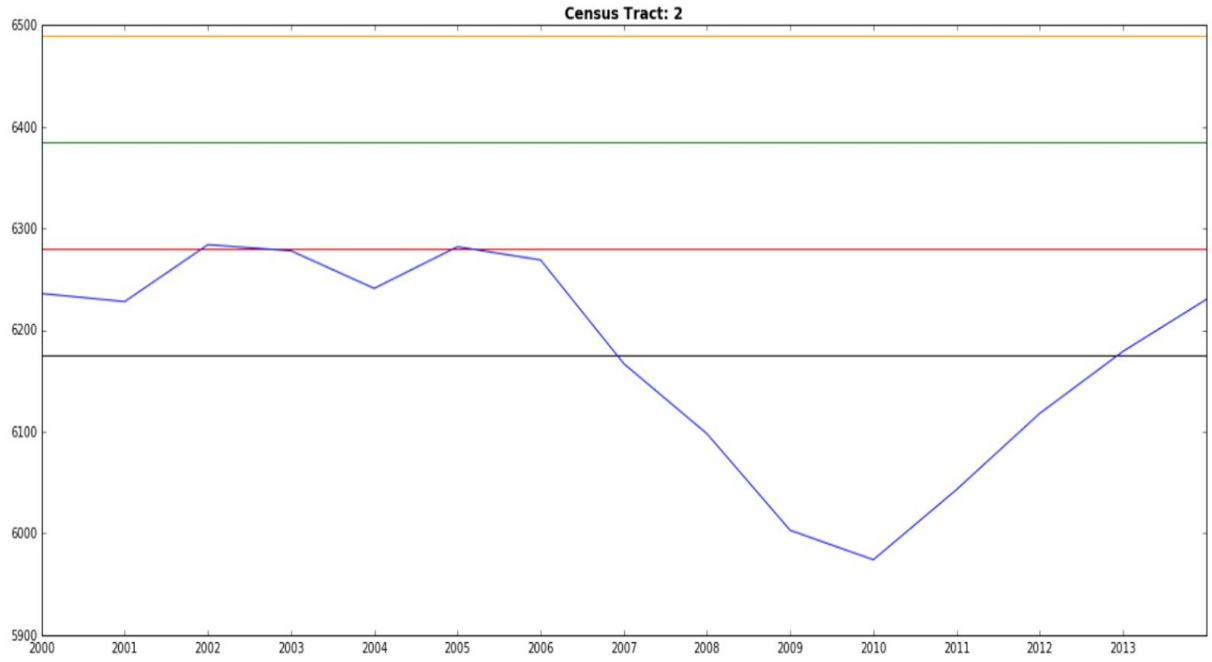
After conducting the initial analysis, the result has been found that - no apparent change exists in the Business data that specifically corresponds to the construction of the Highline. In fact, during the construction of the highline (the years of construction - 2008 & 09), we can clearly see a dip, but due to history we know that this dip corresponds to the major recession of 2008-09, hence the dip cannot be due to the highline either. And the dip shown in these times is of the decrease in counts and hence the decrease in the number of businesses around the Highline (sample area). This trend has also followed the Manhattan Data as well, thus showing that the whole city was affected at this time and thus pointing to the recession only.

So to state it in conclusion, the highline has not affected the number of businesses positively or negatively. This is the conclusion achieved by analyzing the business data from 2000 to 2013 (till 2013 here, only due to data collection constraints - 2013 to 2016 data is not open or easily accessible).

Also, since the highline shows no positive or negative influences on businesses, the decision was made not to go through with plotting the Manhattan data as well (as a control group). The fact that no insights (or at least positive) were made delving into the Chelsea data, going through and analyzing the Manhattan Data and trying to find a similarity or correlation did not seem necessary and due to this reasoning, the Business Data did not prove to be a valued stream of analysis for this project eventually.

Note:
The example tract shown here is for the census tract 2. All other tracts that comprise the highline is shown at the end of the document. For all the 15 Census Tracts that comprise of the highline in them. Since showing 15 later and an example now for analysis and insights is clearer

Figure - ***Shown below, this shows the Counts of all the Businesses from 2000 to 2013.***
Area Of Plot - ***All the businesses around the High Line (Chelsea Area).***
Example Plot - ***This plot is of the Census Tract 2 which represents the start of the High line in actual geographical location.***



Red Line - ***This line indicates the 1st Standard Deviation marked across the graph.***
Green Line - ***This line indicates the 2nd Standard Deviation marked across the graph.***
Yellow Line - ***This line indicates the 3rd Standard Deviation marked across the graph.***

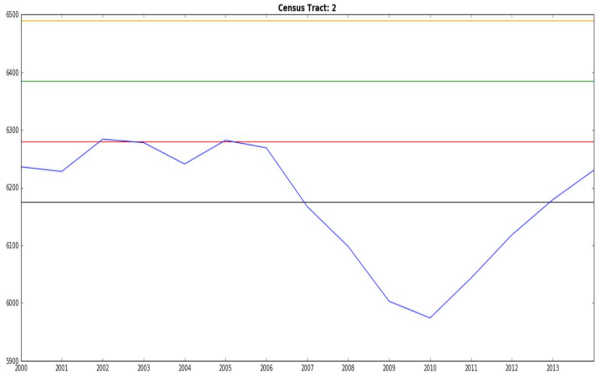
The reason for plotting the 1st, 2nd and 3rd Standard Deviations for the business data is to see if there exists any business increase above the 3rd standard deviation line (yellow line), thus then considering that if business counts had indeed increased over the line then it justifies that the increase was not an occurrence of chance and not an increase just following a trend. If it was indeed of chance, then the Manhattan data would have been compared to see if at that same spot and moment in time, the increase had occurred all over the city, this would give rise to two possible results.

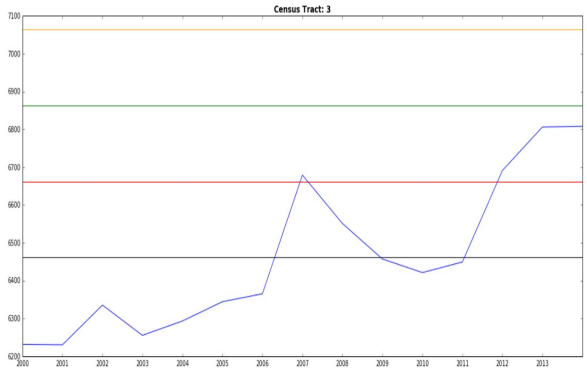
1. If Chelsea Increase > 3STD | Manhattan Increase > 3STD
   This would mean that the whole city experienced this change and particular event.

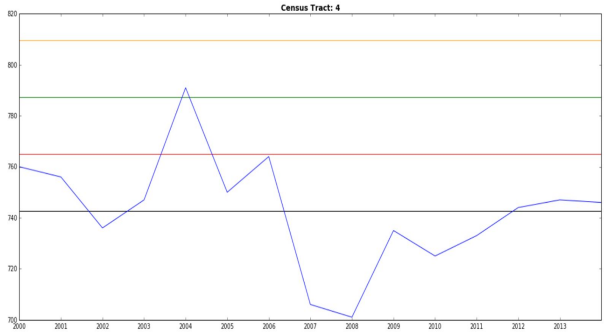
2. If Chelsea Increase > 3STD | Manhattan Increase < 3STD
   This would mean that only Chelsea had experienced this change and not the whole city. Thus implying that the change would have been caused by the Highline Construction.

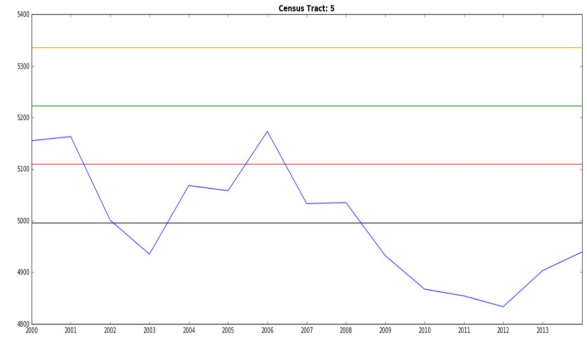
But as is the case that there was no increase found in Chelsea, so hence no justification to look into the analyzation of the Manhattan data either. As we can see from the above plot there is no point in time that there has been any business counts that have increased in Chelsea above the 3rd STD line.

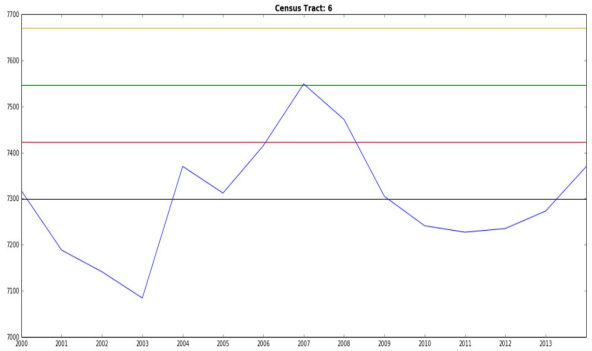
Shown below are all the plots for Census Tracts 2 through 15 - this representing the total Chelsea area that includes the highline.

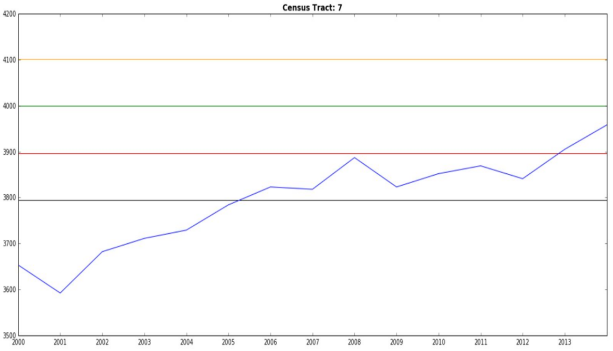


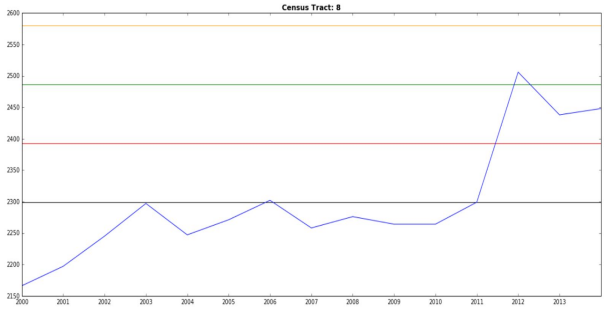


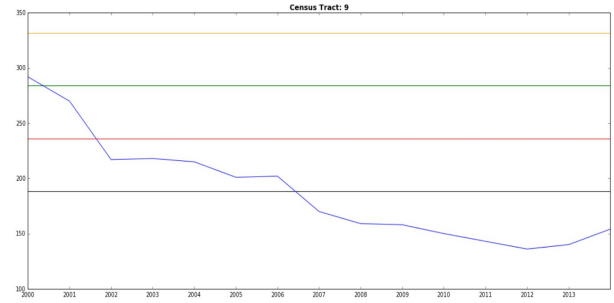


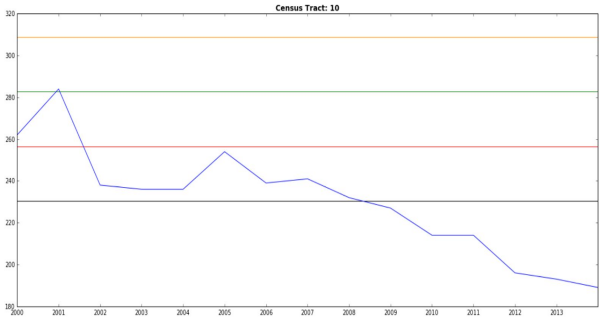


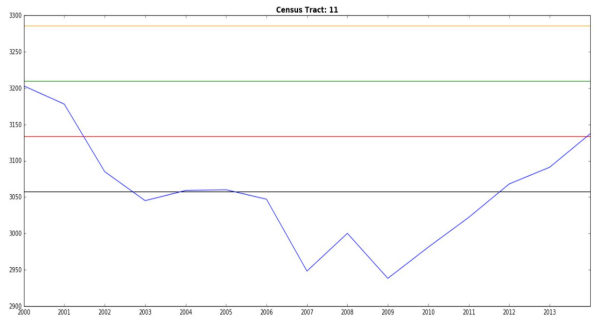


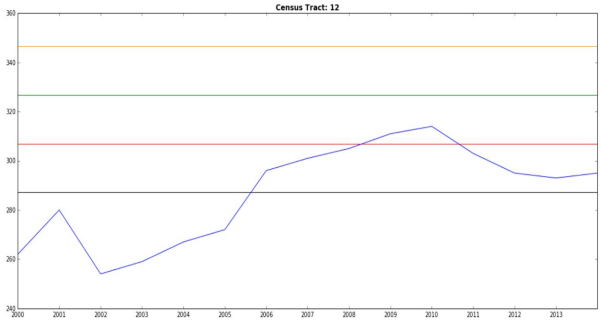


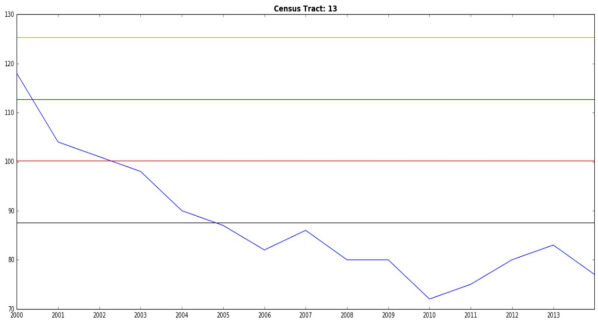


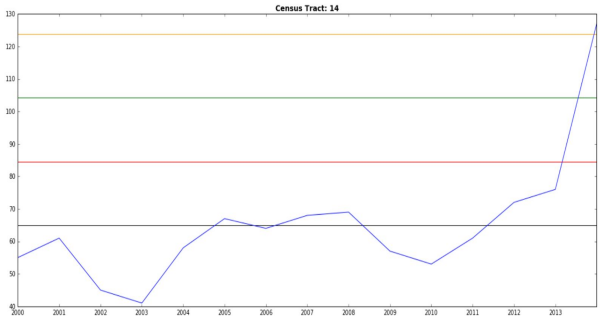


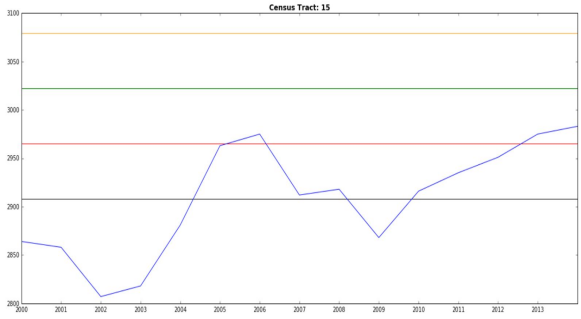












In the ultimate conclusion though, a negative result is still after all, a result nonetheless. Hence, stating it - The highline has not seen to have had an impact in the total number of businesses in and around its area.