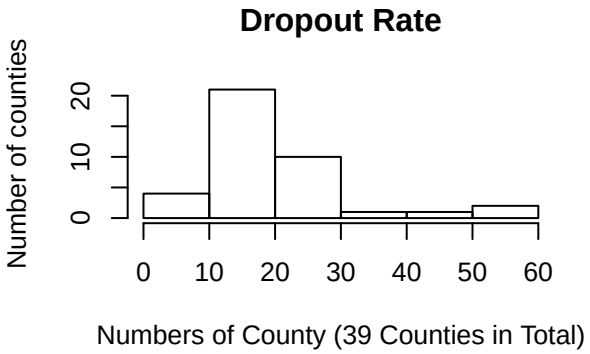
Executive Summary

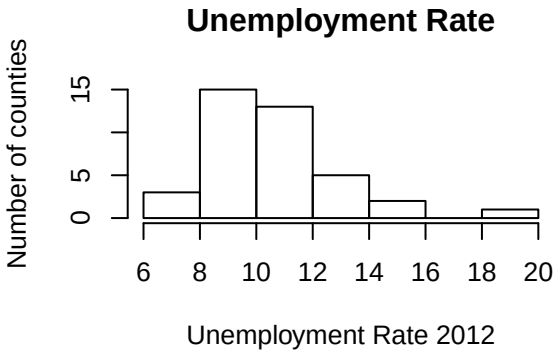
Introduction

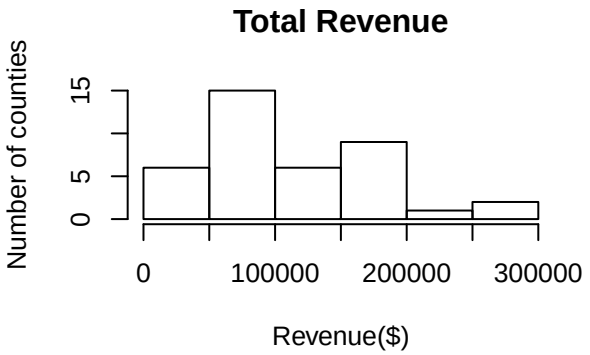
This documents shows the three main variables I used in the project(Unemployment Rate,Total Revenue(school district) and Median Household Income) and it's a brief of my previous work.

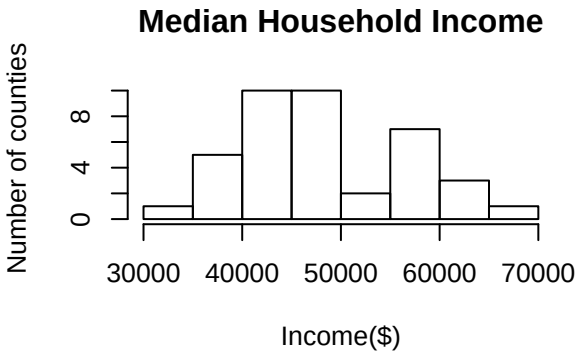
Narrative Statistics and Plots

We can understand the characteristics of my three data by the following histograms and boxplots.

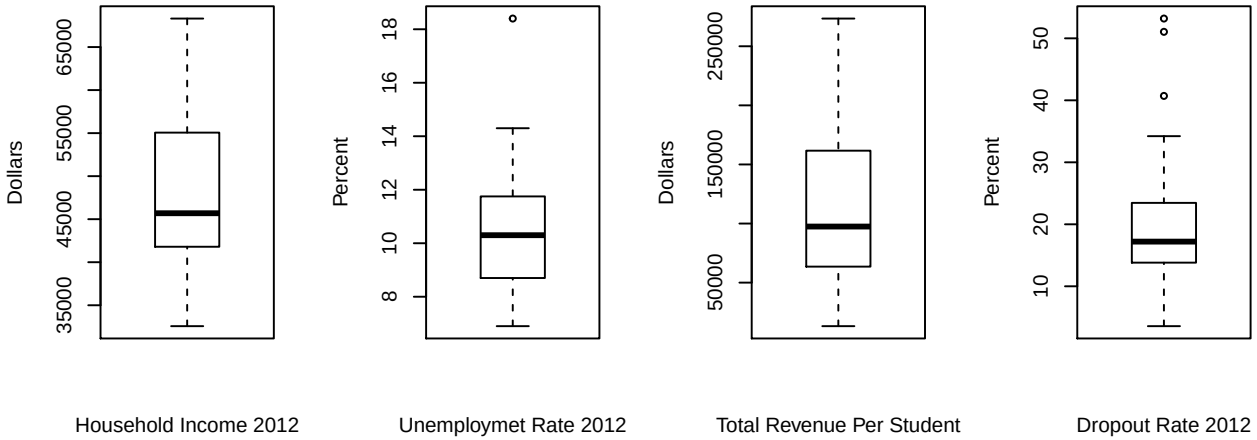






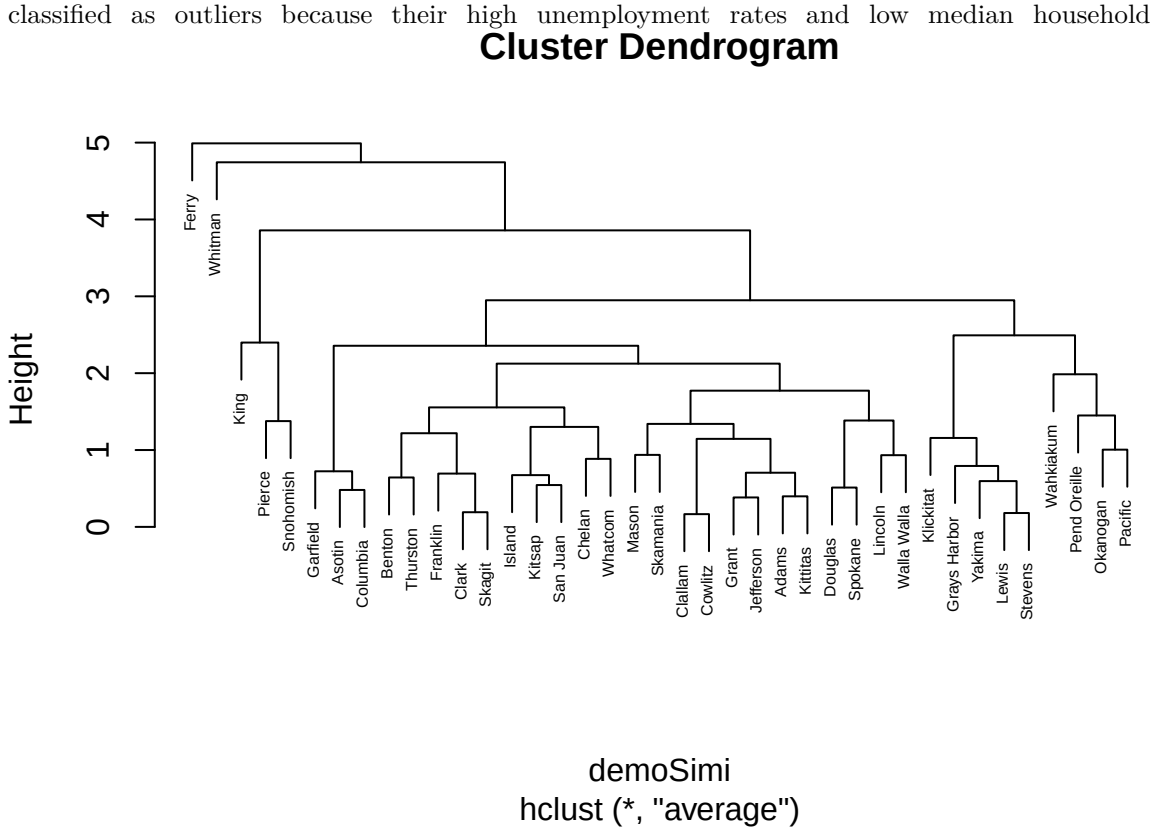


###Boxplots:



Clustering

Here, the dendrogram is different from the two I used in my MASTER. I classify counties into different groups based on only three main variables here, and the two in my MASTER are based on more than ten variables. We can see that Ferry County and Whitman County here are classified as outliers because their high unemployment rates and low median household income.



Regression

```
## [1] "Pearson: -0.140666395003632  - Is significative? FALSE"
## [1] "Pearson: 0.306238793010843  - Is significative? FALSE"
## [1] "Pearson: -0.0338792201701959  - Is significative? FALSE"
```

As I mentioned in the MASTER, the three variables don't have strong relationship with the dropout rate. In fact, none of my 14 variables are significative enough to the dropout rate.

```
##
## Please cite as:

##  Hlavac, Marek (2018). stargazer: Well-Formatted Regression and Summary Statistics Tables.

##  R package version 5.2.1. https://CRAN.R-project.org/package=stargazer
```

From the matrix, we can see that the unemployment rate is relative to the median householde income, if we would like to dive deeper and know what really causes the high dropout rate, we might want to avoid choose variables like this. We can also understand the complexity in social phenomenon from here because all the potential indenpendent variables I thought might have relationship with the dropout rate fail to properly explain it. If anyone want to have a thorough understanding of dropout rate in WA state, we recommend that they seek theoretical support before collecting data.

Table 1: matrix

	TotalRevenuePerStudent	unemployment_rate	Median_household_income_201
TotalRevenuePerStudent	1	-0.093	0.057
unemployment_rate	-0.093	1	-0.501
Median_household_income_2012	0.057	-0.501	1

Conclusion

Althought there's no direct causal relationship between dropout rate and other variables statistically, especailly for the three main variables I used in previous parts. From MAP.1 to MAP.4 in MASTER, we find out that while most of the public schools are located near Puget Sound area, students of public schools in the north central area, which commonly be deemed as rural area, receive the highest funding. Such discovery explains that the government does pay attention to students' learning situation in remote areas. However, we can also see that there are many schools in the central south region, but most schools are underfunded, which accounts for the imbalance between the metro Seattle area and rural areas.

We would like to suggest WA state government to adopt following recommendation:

1) To coordinate and communicate with county governments to know what might the underfunded school districts within a county need and incrementally increase funding for county in the northeast, south central area.
2) To find out the counties (like Benton) or that might potentially need financial aid in the near future. Such precautionary measure may prevent the potential dropout problem.
3) To better serve our students, we recommend that the Washington State government provide guidance and technical assistance to financailly disadvantaged counties to optimize the use of current limited budget.

Washington State government can use these maps to identify the targeted counties that need extra assistance and consider how to balance the regional development among different areas. Also, they may keep eyes on the relevant social indicators (e.g. proportion of people of color, median household income, unemployment rate) and analyze the correlation between them and dropout rate or school districts' revenue, which will help the government make better budget decisions based on solid data rather than debating or outdated experience. These changes would serve the students in remote areas better and contribute to mutually achieving the collective goal of school districts, local governments and Washington State government.