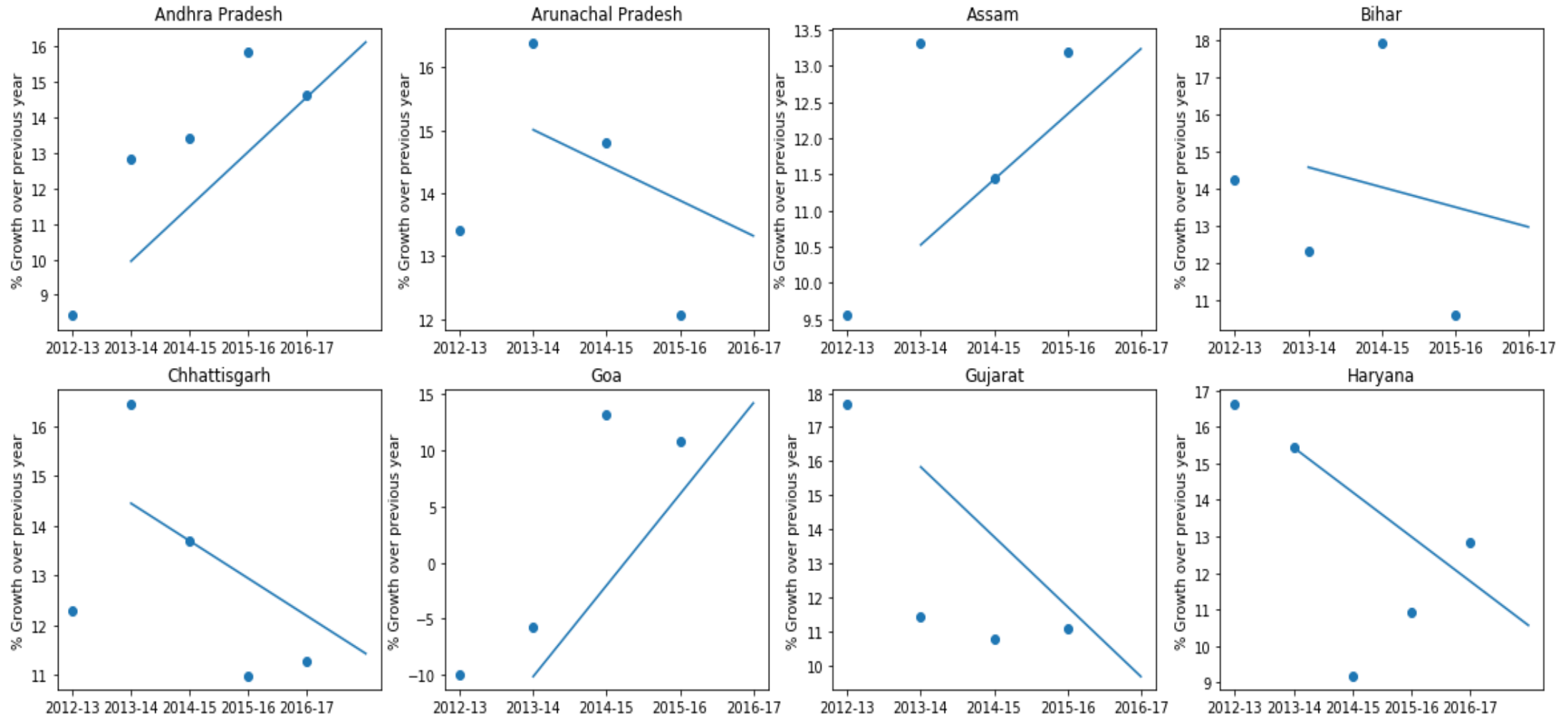


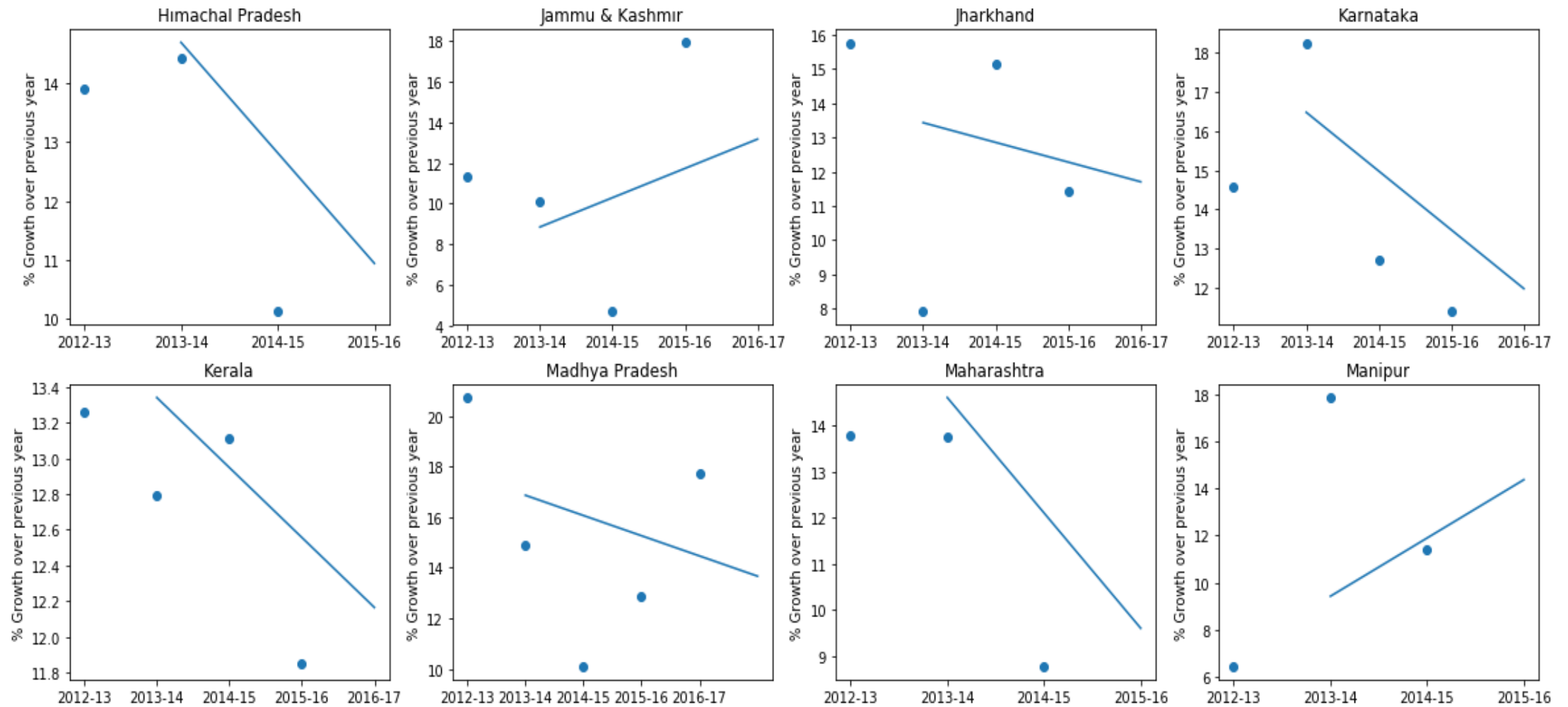
GDP Assignment

Anirban Sarkar

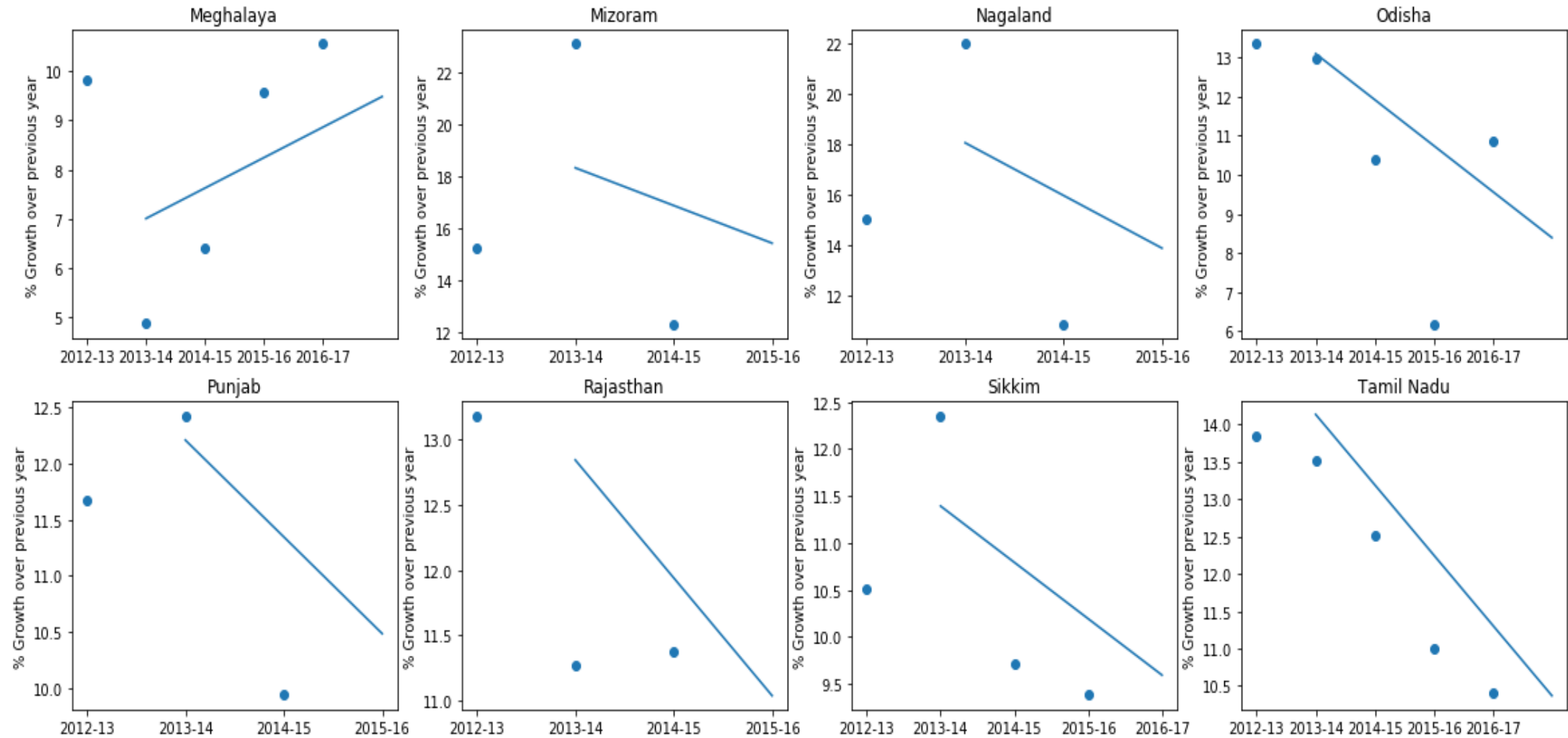
Growth Rate Over Previous Year - Best Fit Line Plot



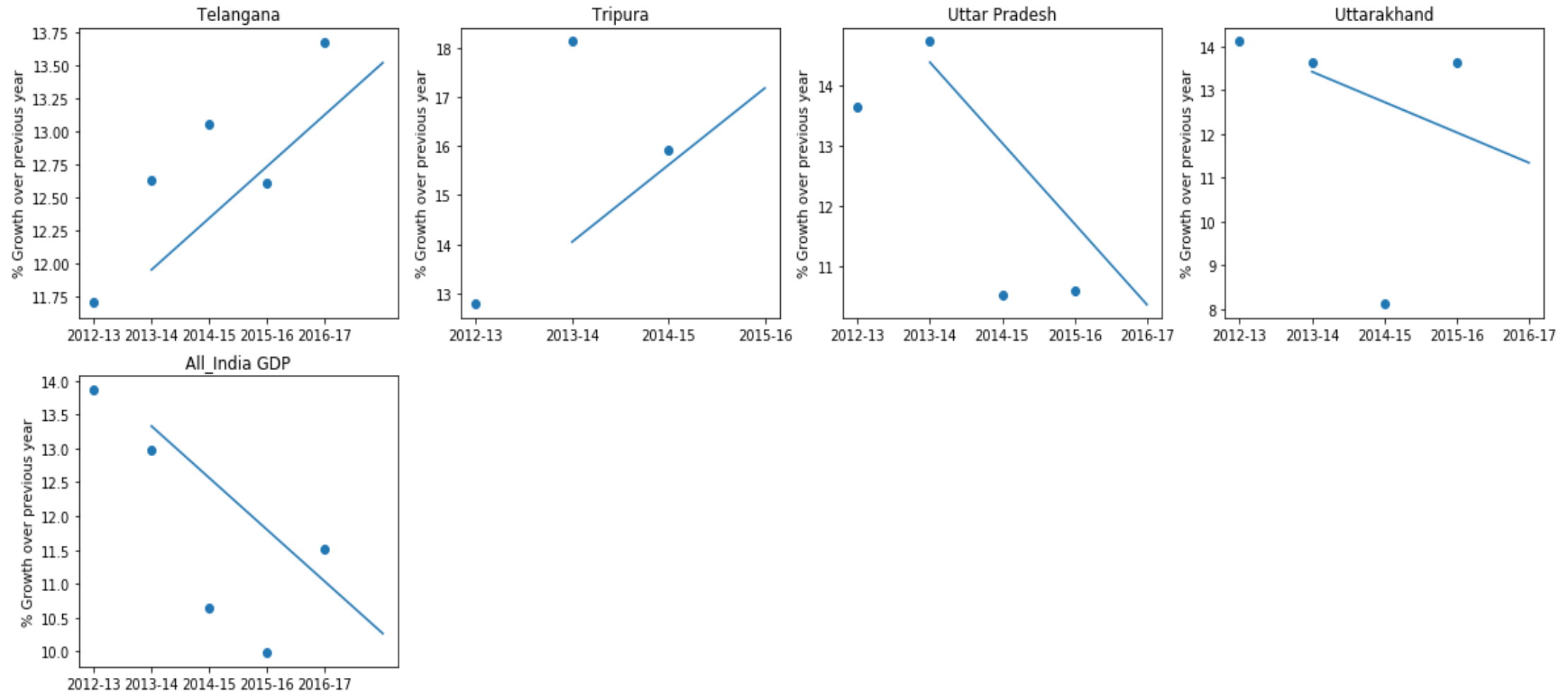
Growth Rate Over Previous Year - Best Fit Line Plot



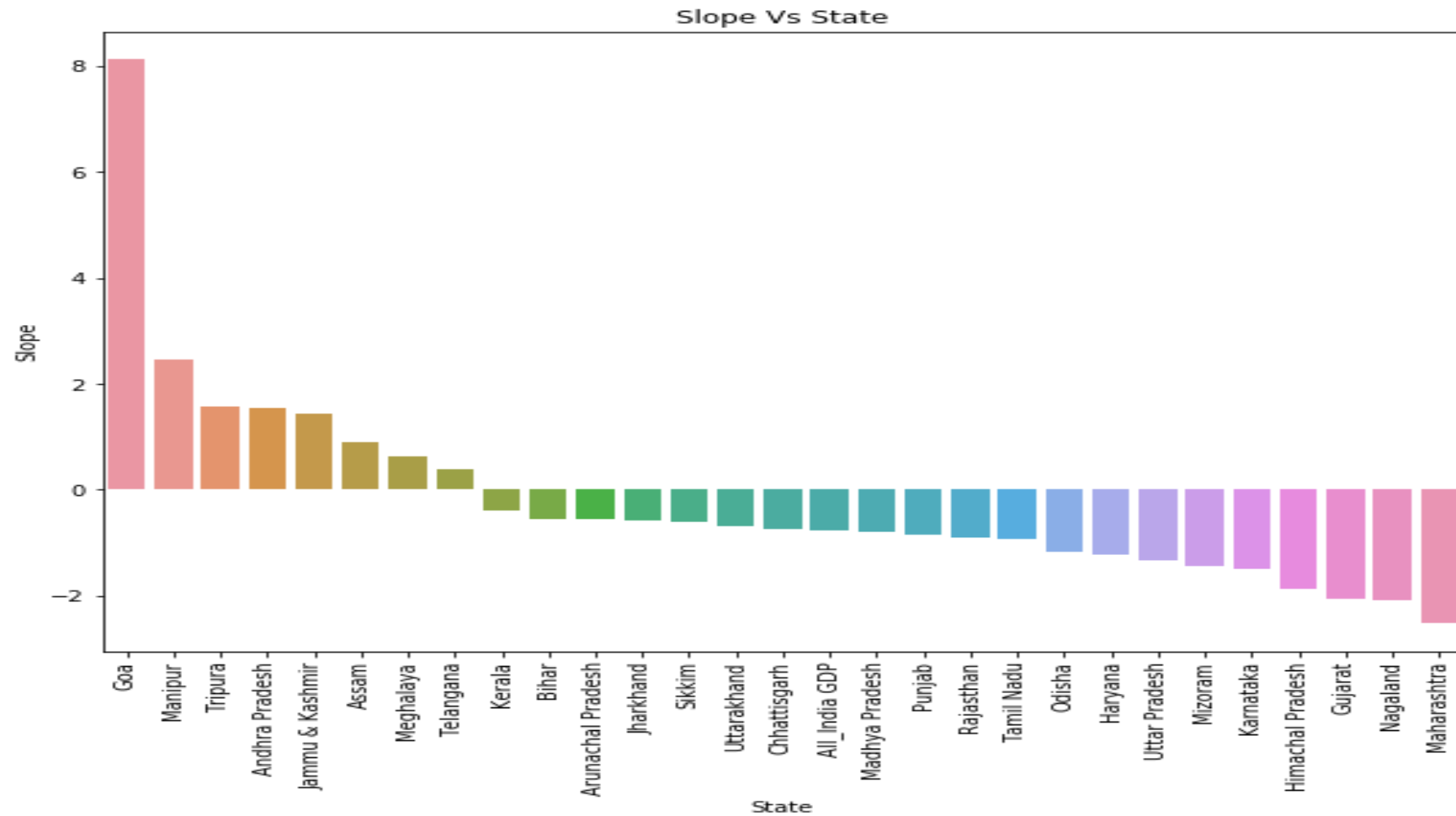
Growth Rate Over Previous Year - Best Fit Line Plot



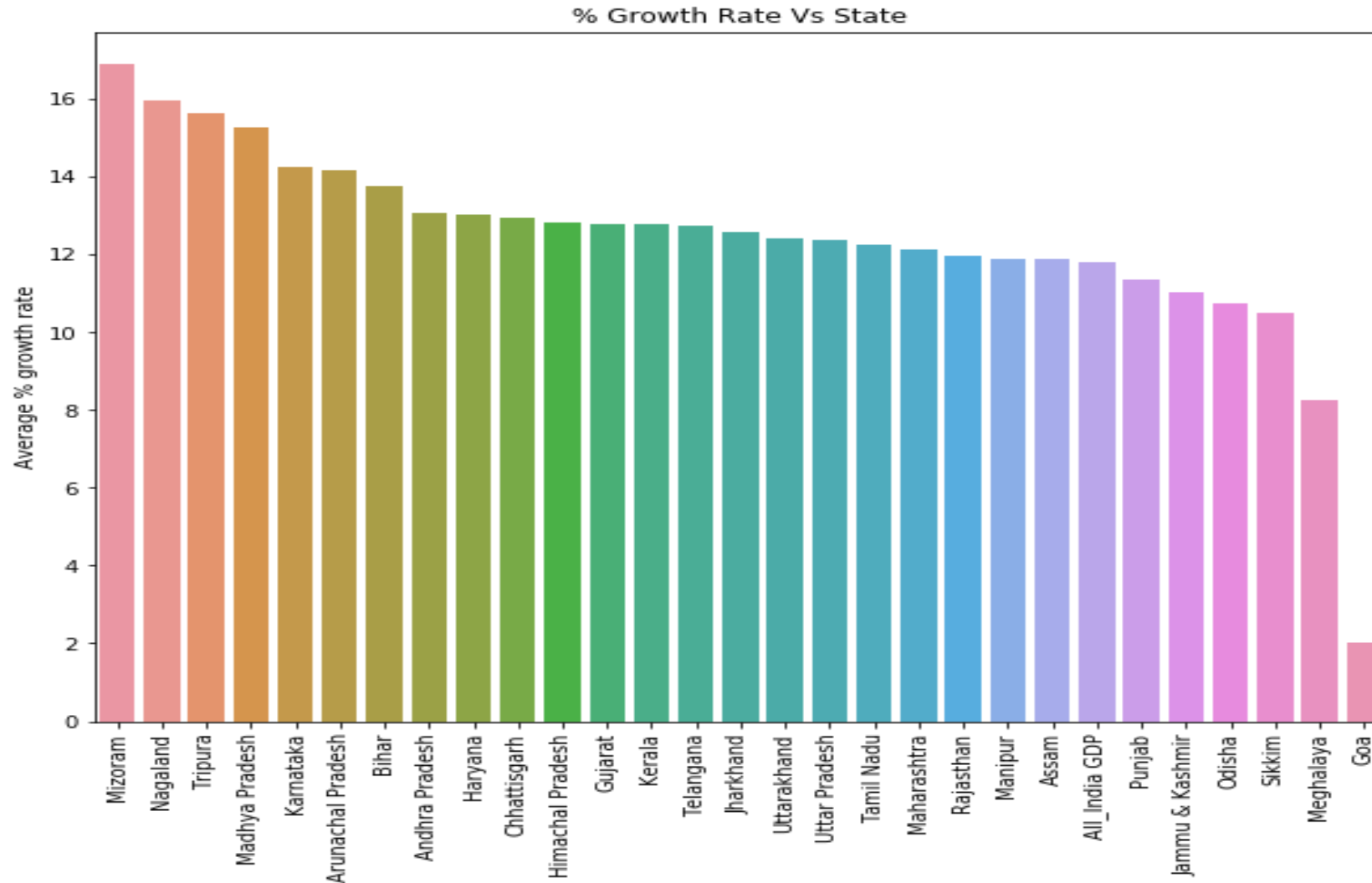
Growth Rate Over Previous Year - Best Fit Line Plot



Slope of the Best fit line



Average % growth rate of States



Analysis

Which states have been growing consistently fast, and which ones have been struggling?

Mizoram, Nagaland and Tripura have average growth rate is high and **Sikkim, Meghalaya and Goa** have average growth rate low. From the Slope, we can see that Goa, Manipur, Tripura are growing fast and Assam, Meghalaya, Telanga is growing slower.

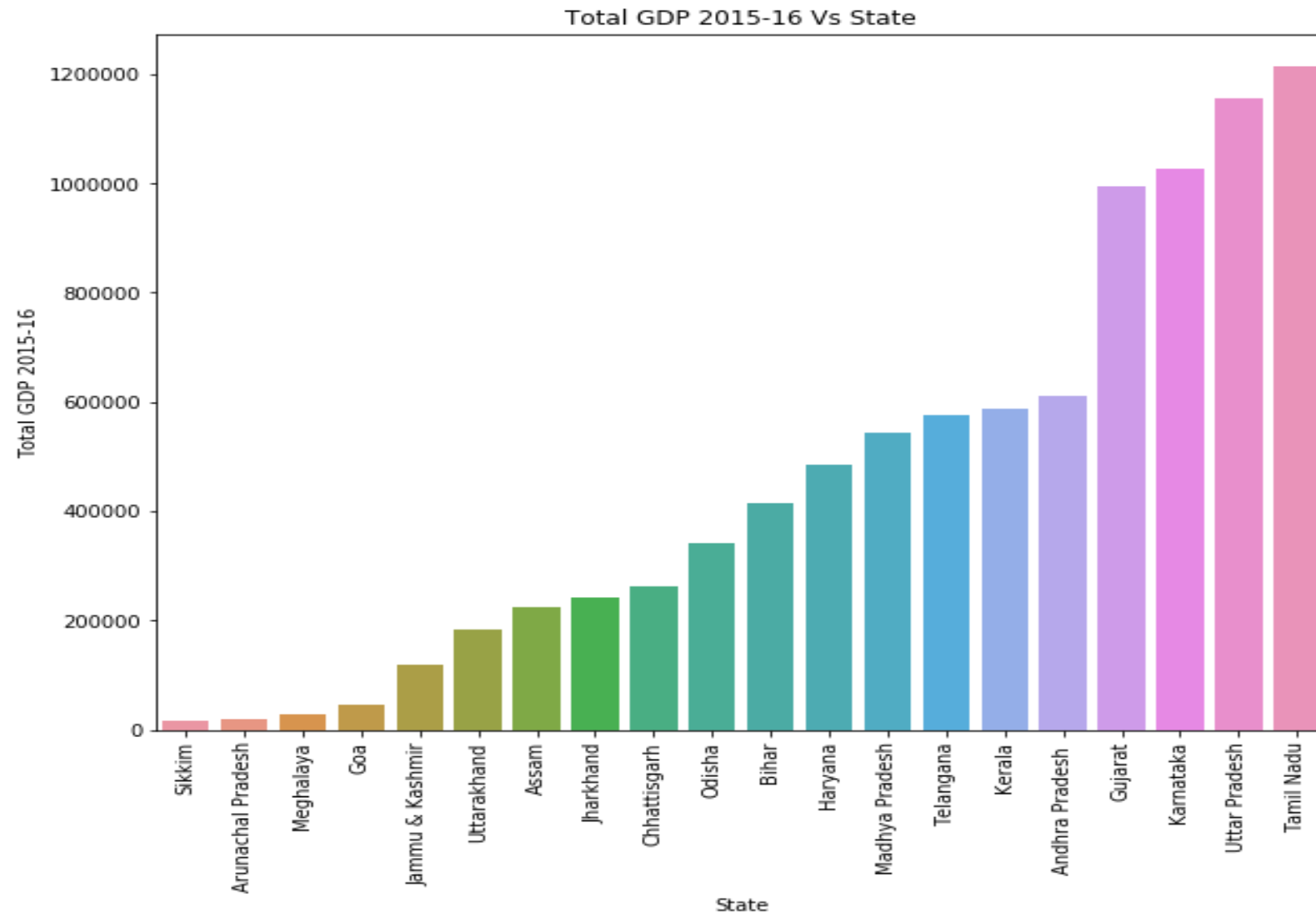
Rank top 3 fastest and 3 slowest-growing states? What is the Nation's growth rate?

11.8

What has been the growth rate of your home state, and how does it compare to the national growth rate?

My home state is Karnataka. Its average growth rate is 14.23. The growth rate is better than the nation's average growth rate.

Total GDP per State



Analysis

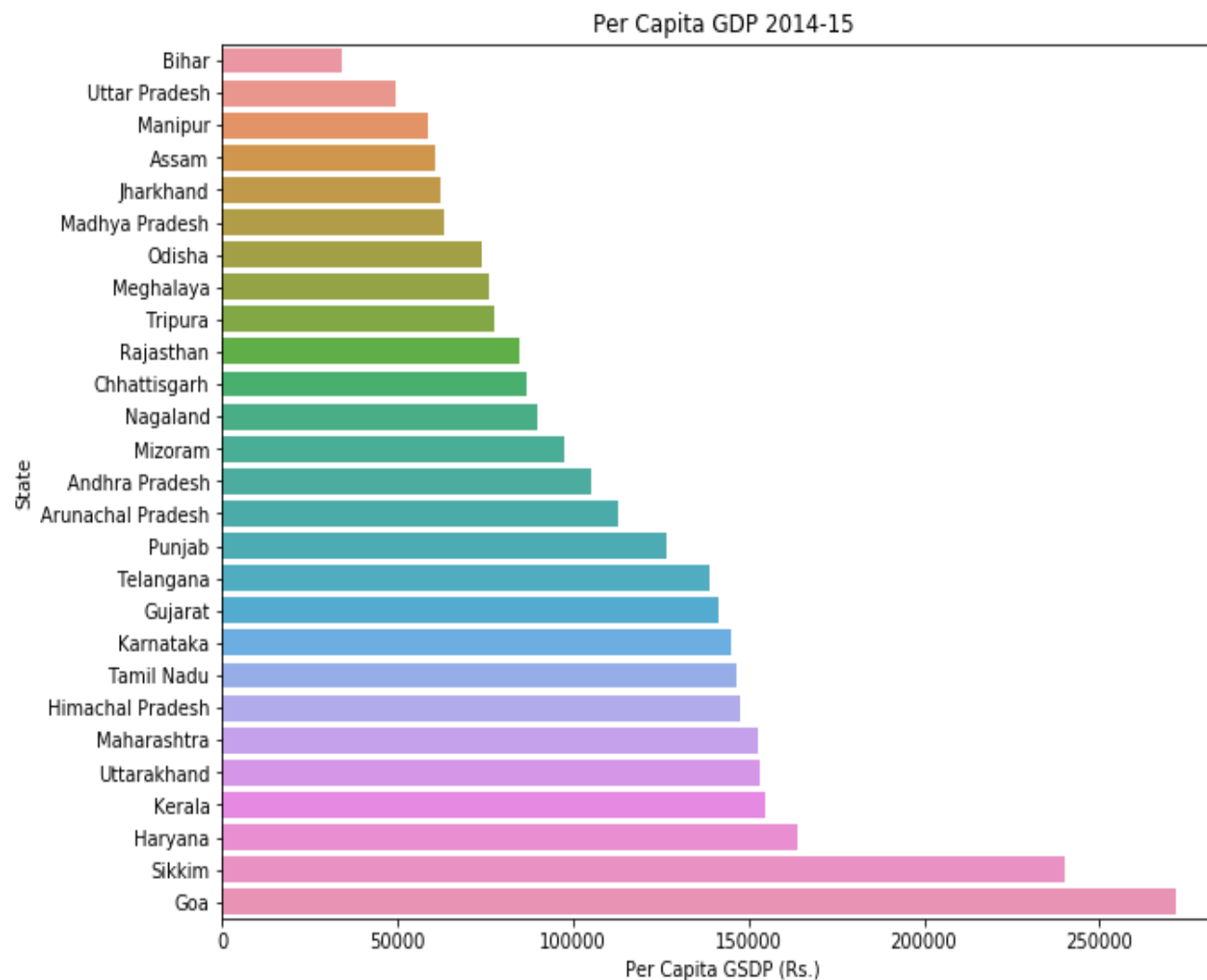
Top 5: Tamil Nadu, Uttar Pradesh, Karnataka, Gujarat, Andhra Pradesh

Bottom 5: Sikkim, Arunachal Pradesh, Meghalaya, Goa, Jammu & Kashmir

Analysis

Mainly north east states and Goa are performing poorly. Only 4 states are above 1000000 total GDP. Most of the state has GDP between 20000 to 600000. Mostly south Indian states are doing good except Gujarat which is from west. Madhya Pradesh stands in middle in terms of total GDP.

GDP per capita 2014-15



Analysis

Top 5 and the bottom 5 states based on the GDP per capita.

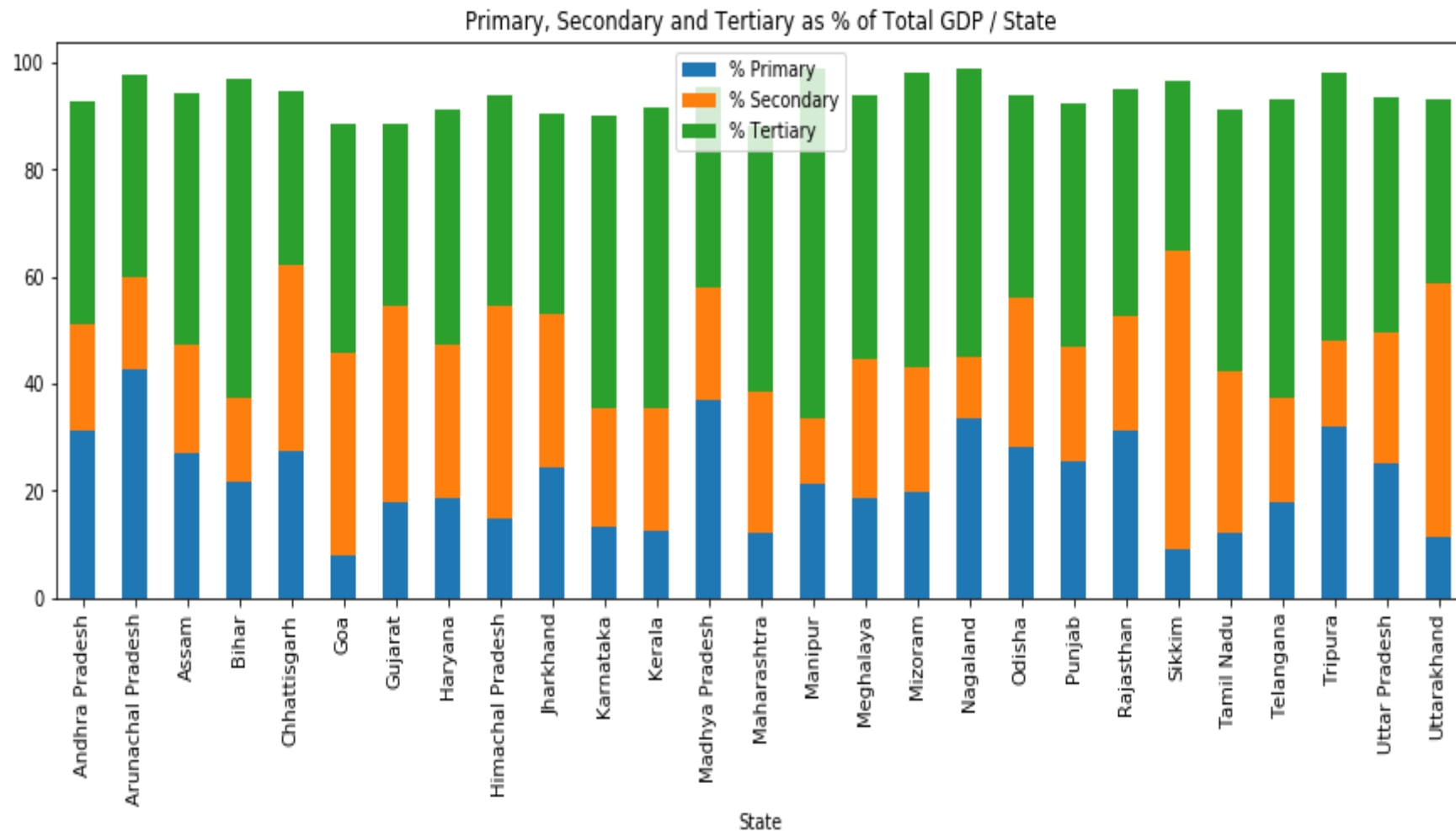
Top 5: Goa, Sikkim, Haryana, Kerala, Uttarakhand

Bottom 5: Bihar, Uttar Pradesh, Manipur, Assam, Jharkhand

Ratio of the highest per capita GDP to the lowest per capita GDP.

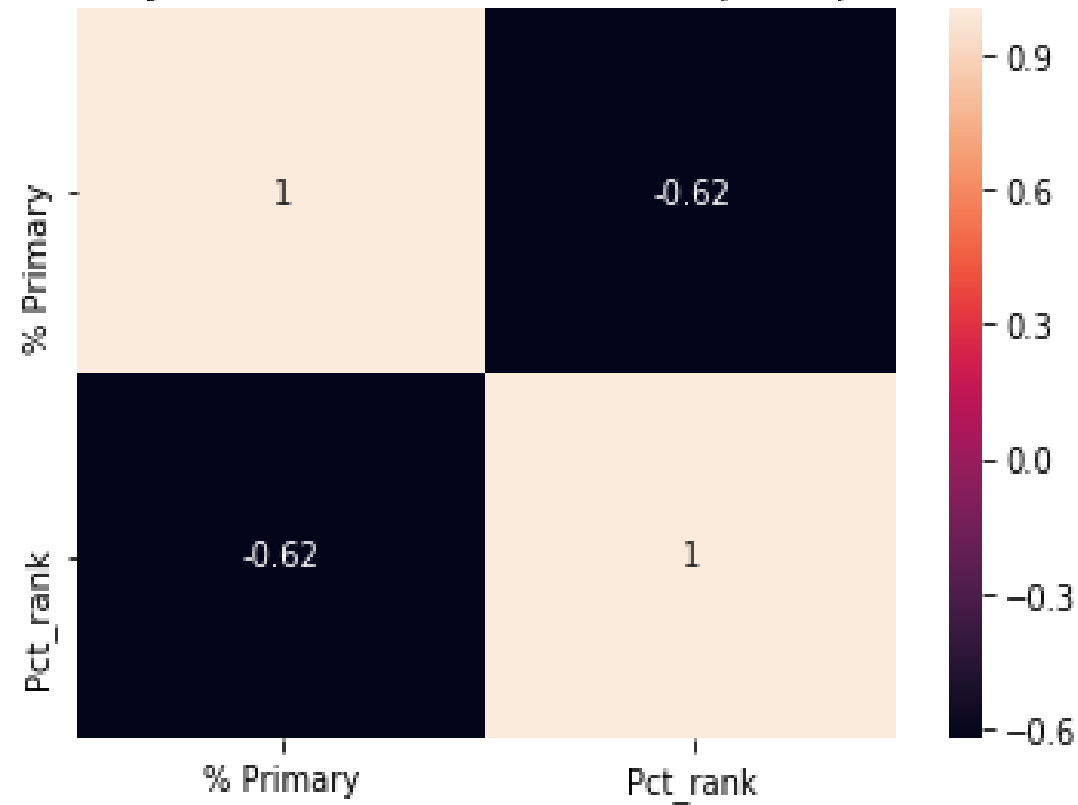
8.0

Primary, Secondary and Tertiary as % of Total GDP / State

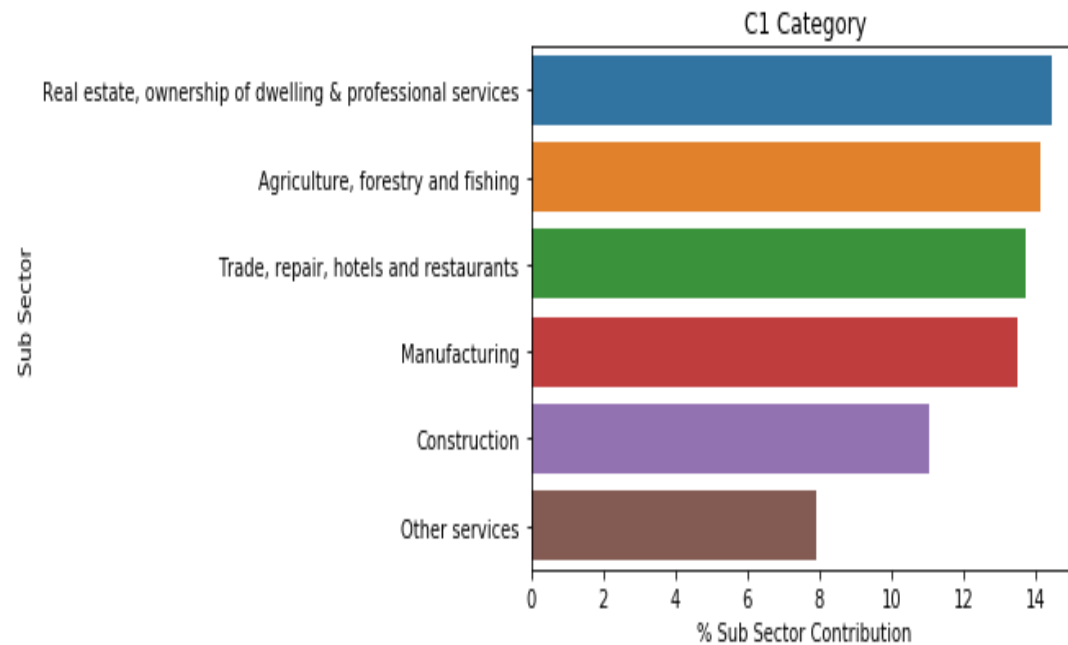


% Primary Vs Percentile Rank on GSDP

% Primary Contribution Vs Percentile of per capita GDP



C1, C2 Category – sub sector wise % contribution



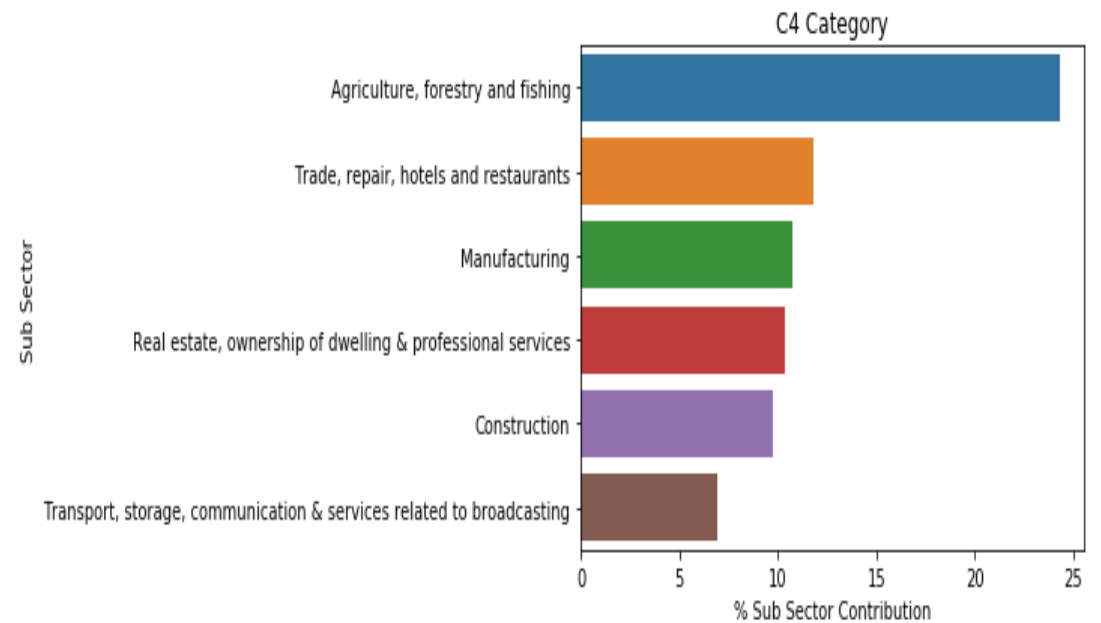
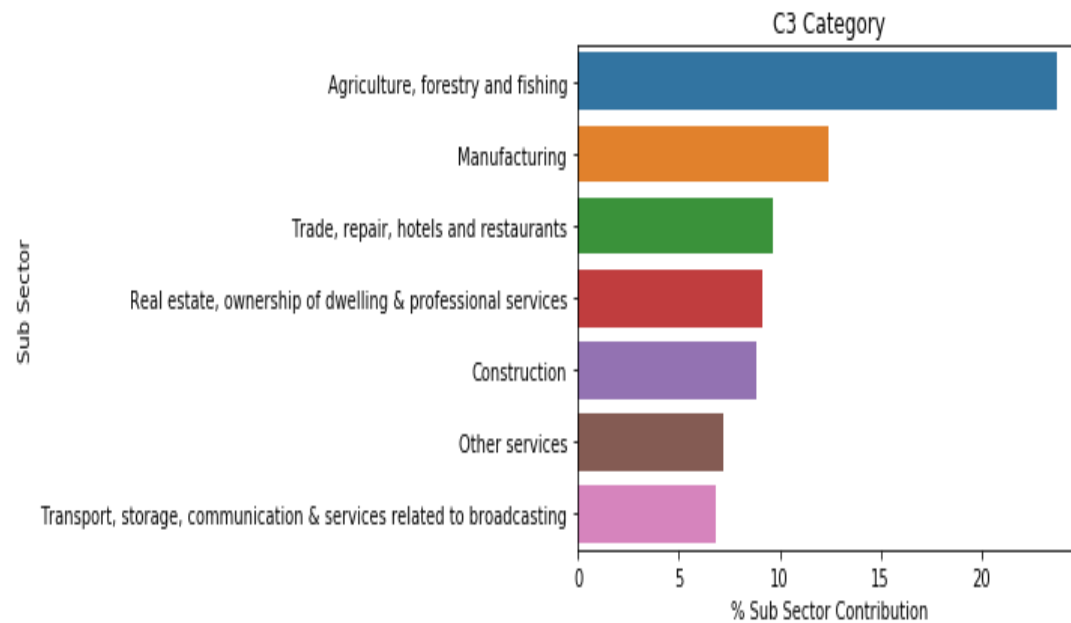
Analysis on C1 and C2

Which sub-sectors seem to be correlated with high GDP?

C1 - Financial Services, Real estate, ownership of dwelling & professional services, Construction, Agriculture, forestry and fishing, Trade, repair, hotels and restaurants , Transport, storage, communication & services related to broadcasting

C2 - Transport, storage, communication & services related to broadcasting, Trade, repair, hotels and restaurants , Manufacturing, Financial services, Public administration, Agriculture, forestry and fishing

C3, C4 Category – sub sector wise % contribution



Analysis on C3, C4

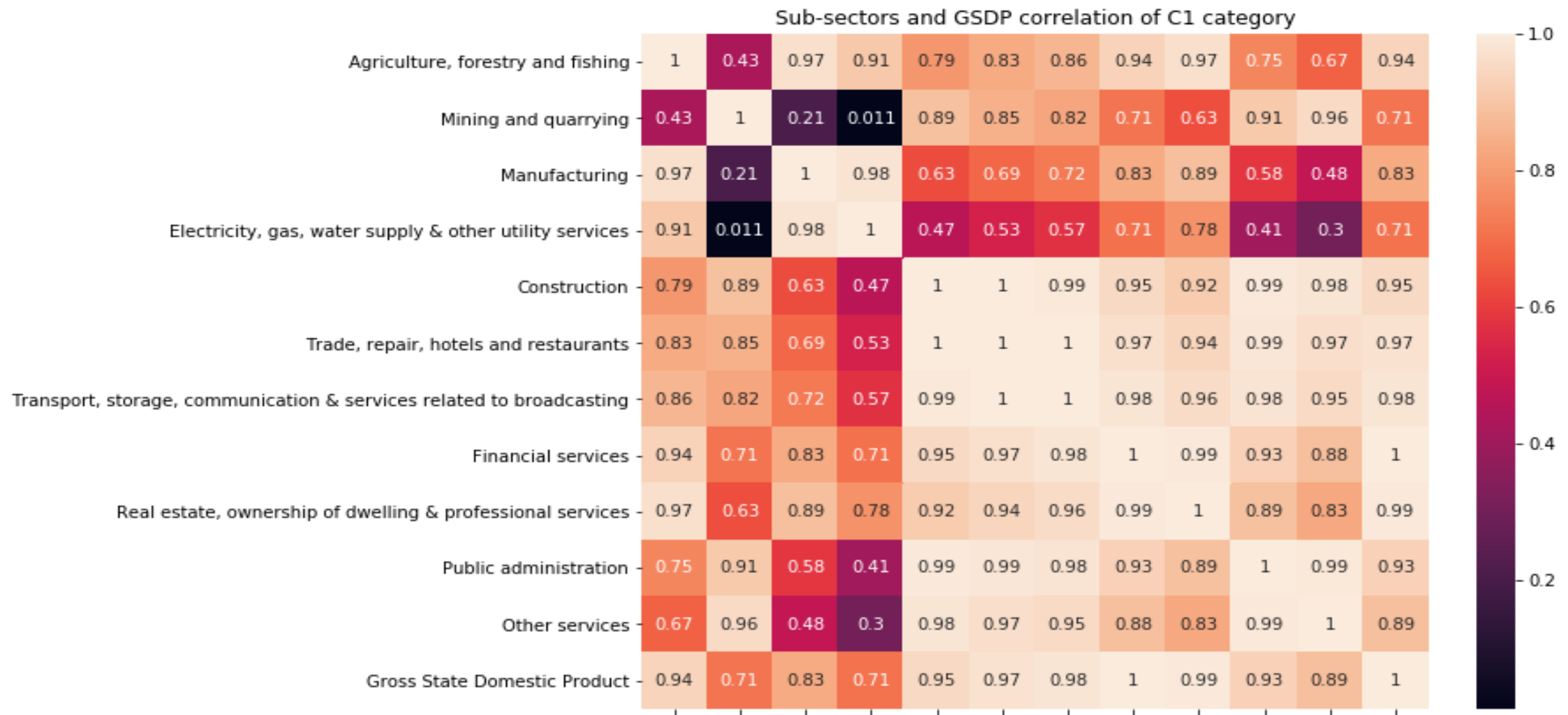
C3 - Financial services, Real estate, ownership of dwelling & professional services, Agriculture, forestry and fishing, Construction, Trade, repair, hotels and restaurants, Transport, storage, communication & services related to broadcasting

C4 - Transport, storage, communication & services related to broadcasting, Financial services, Agriculture, forestry and fishing, Real estate, ownership of dwelling & professional services, Public administration

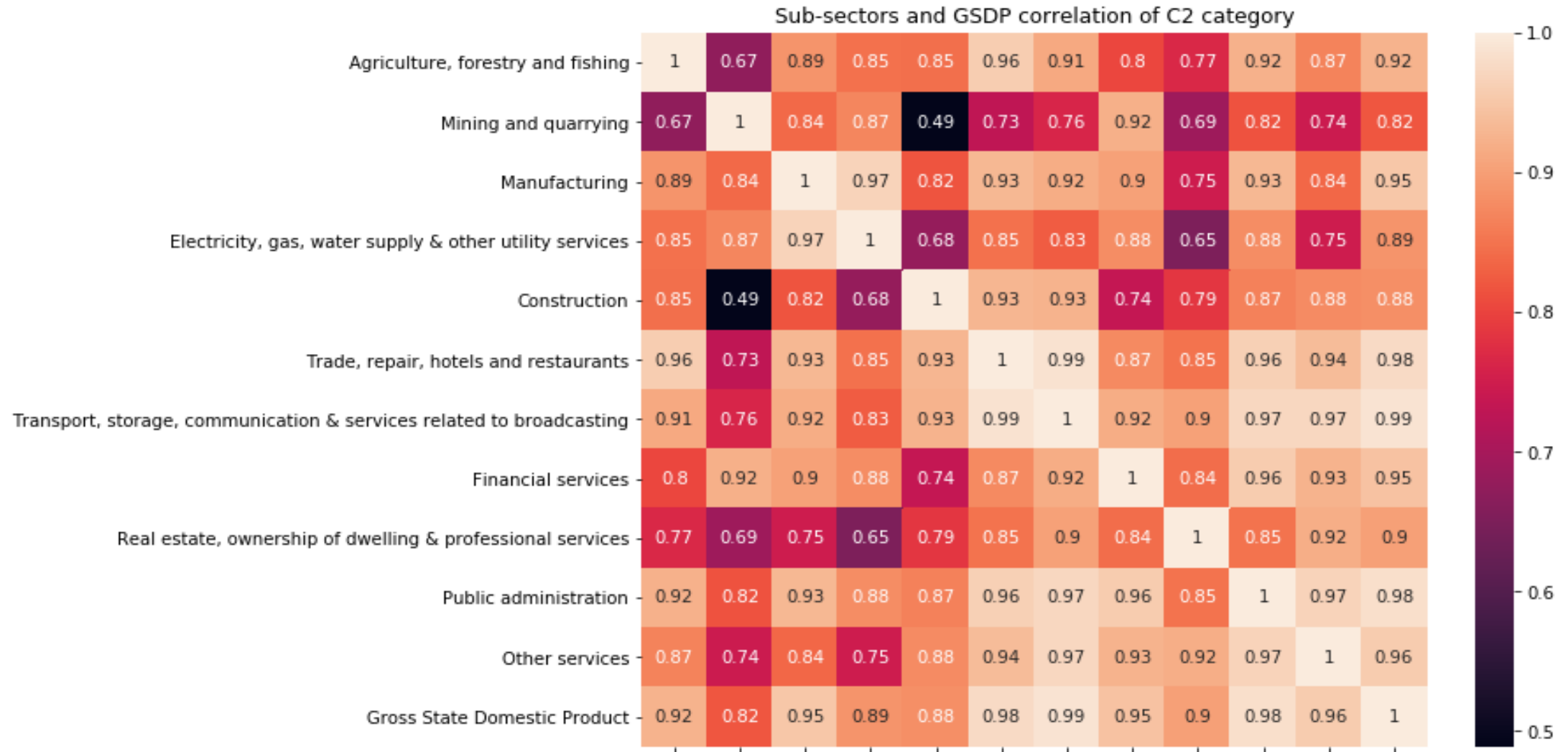
Sub-sectors do the various categories need to focus on:

Transport, storage, communication & services related broadcasting, Other services, Financial Services need to focus on the various category.

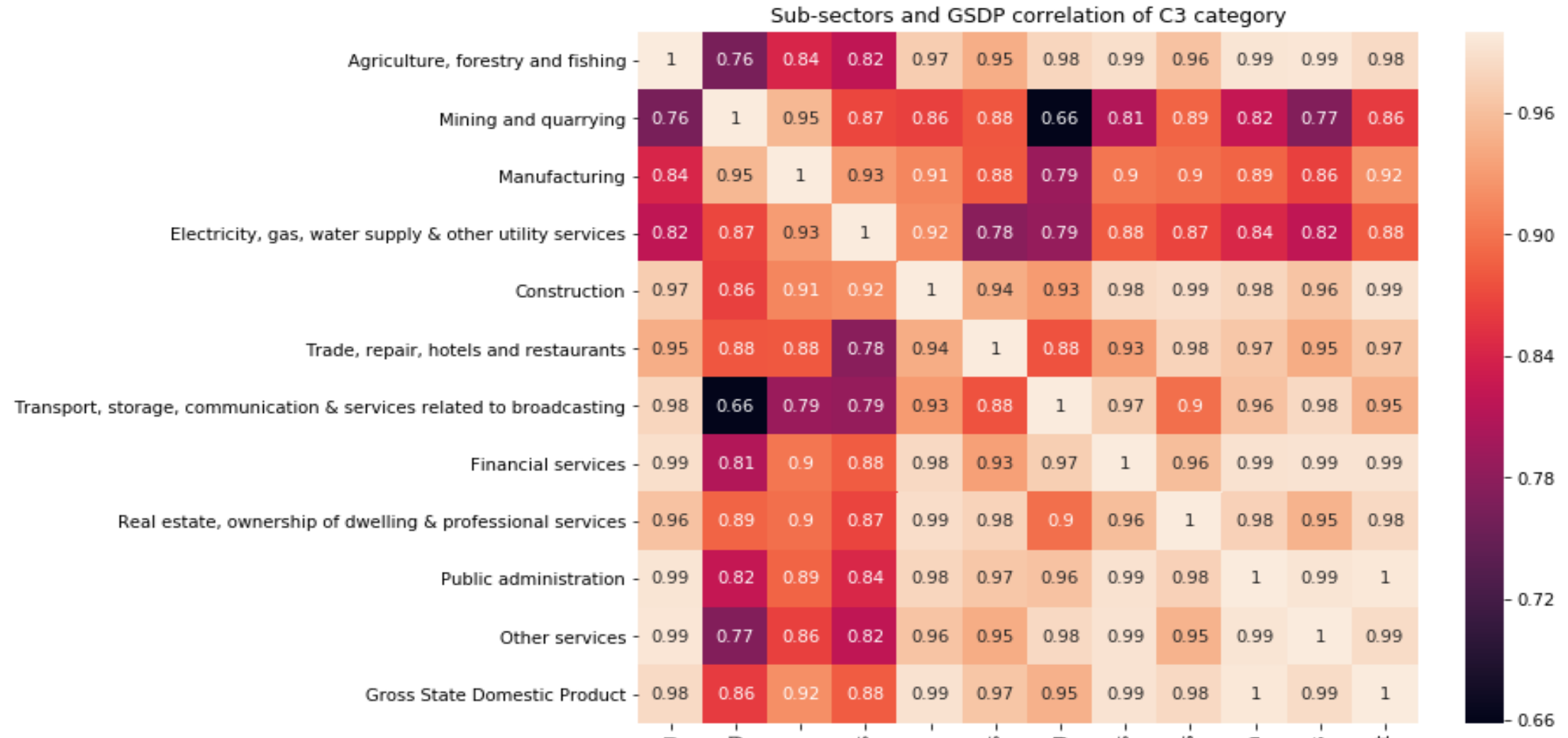
Correlation with sub-sector and GSDP for C1 category



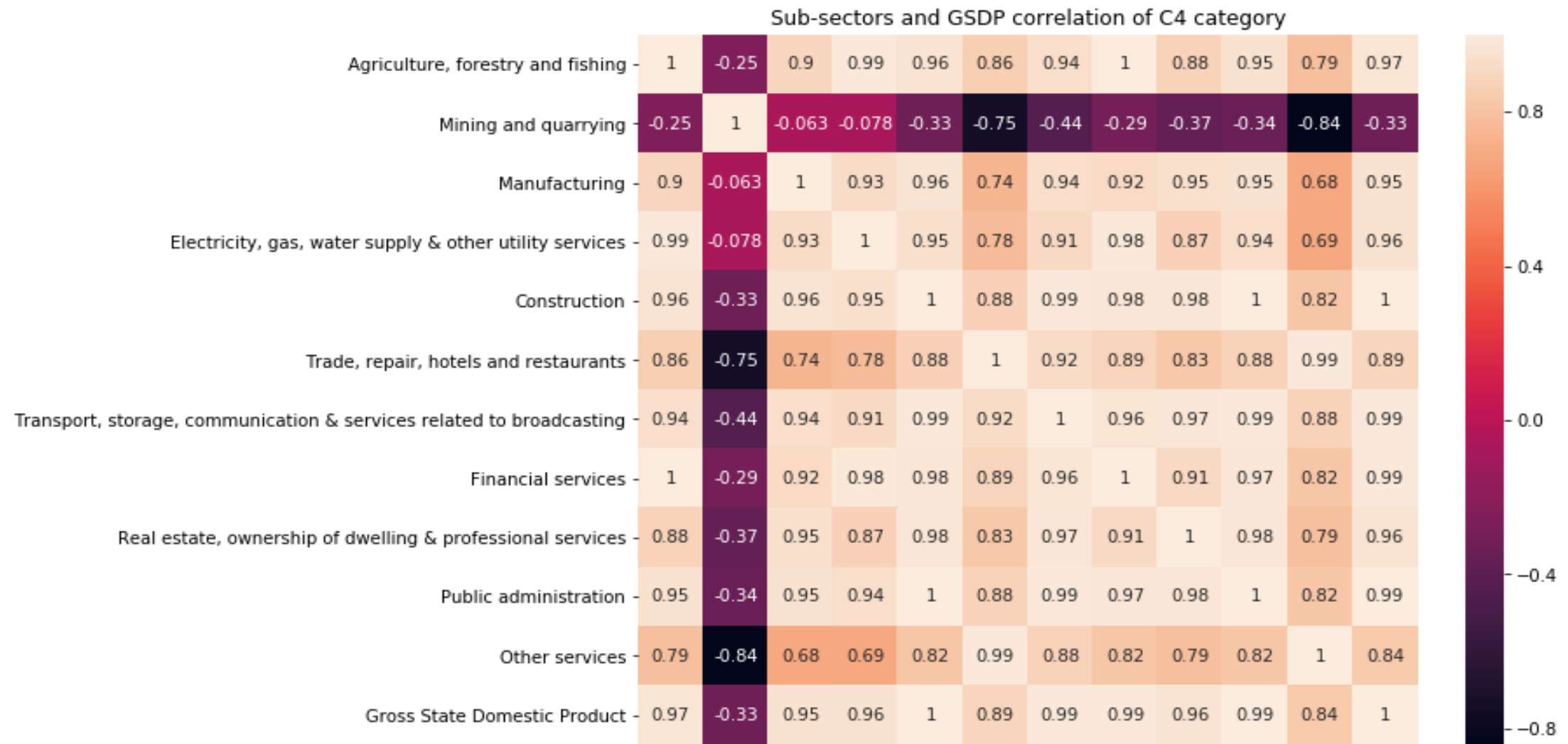
Correlation with sub-sector and GSDP for C2 category



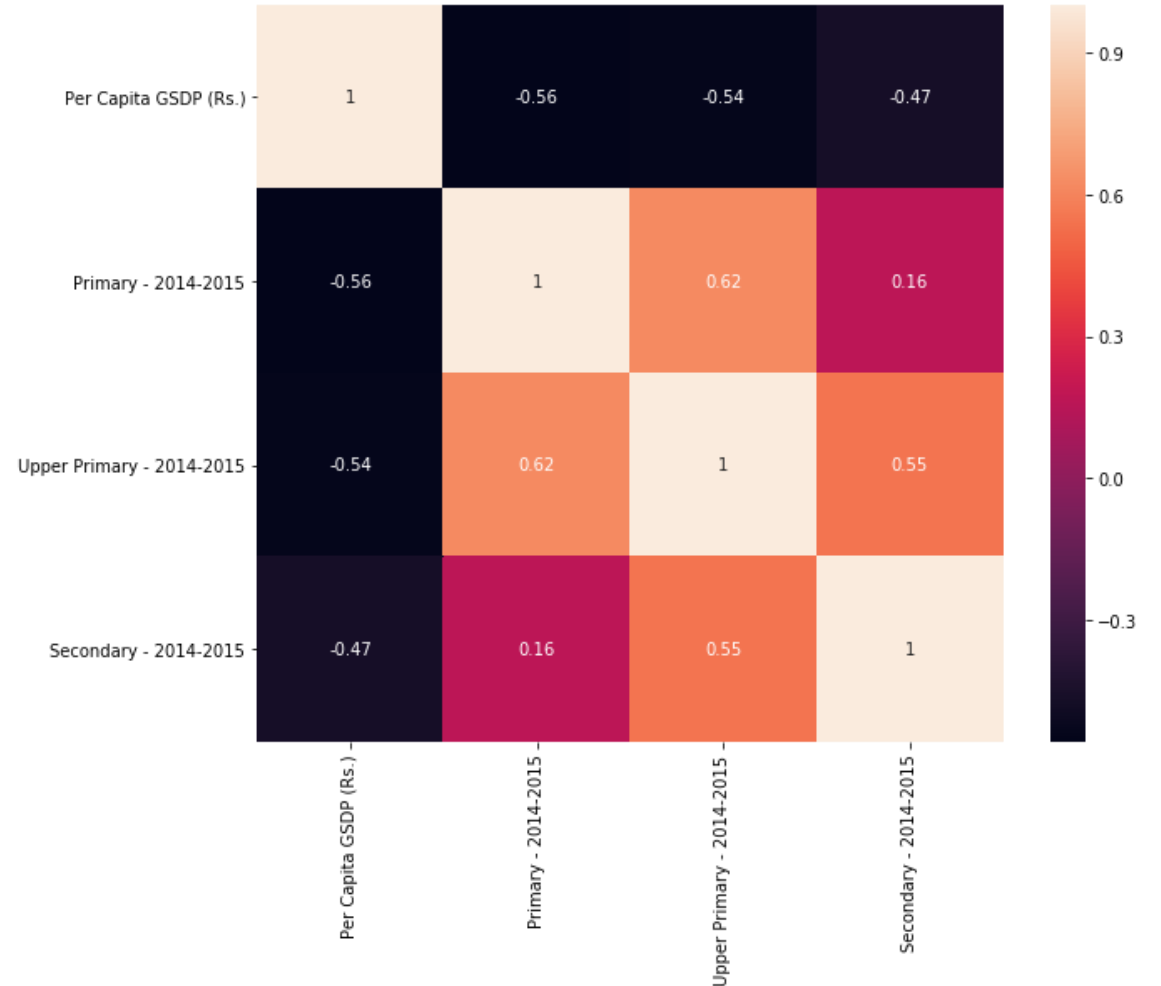
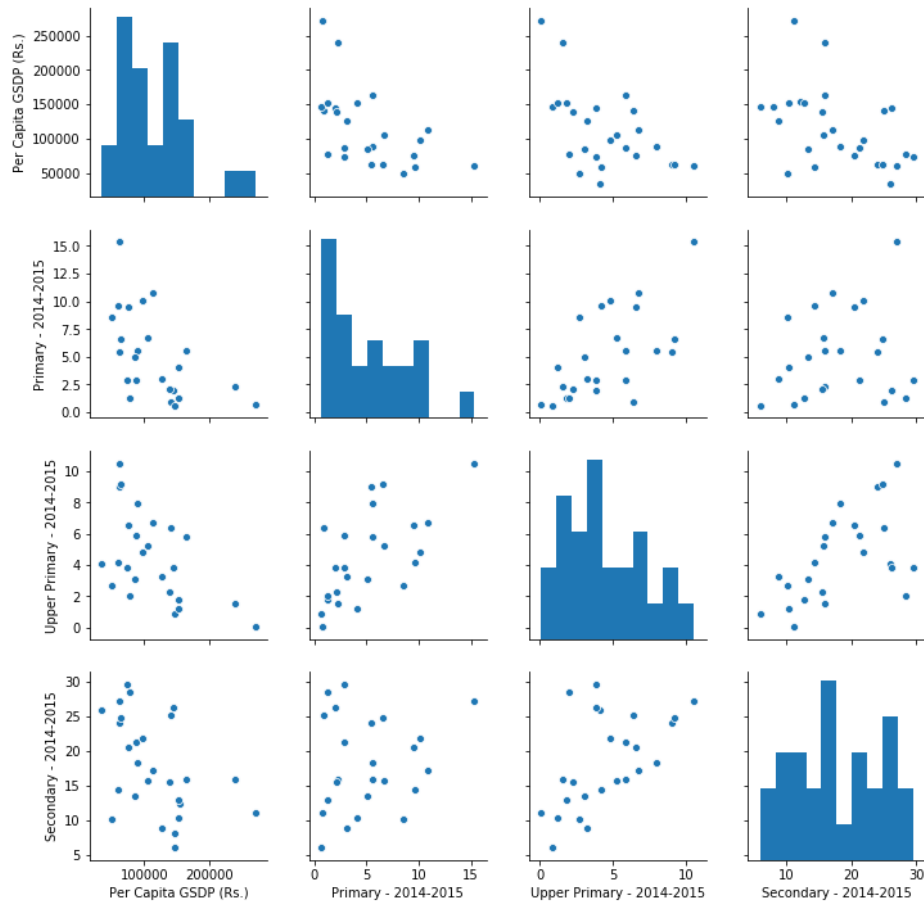
Correlation with sub-sector and GSDP for C3 category



Correlation with sub-sector and GSDP for C4 category



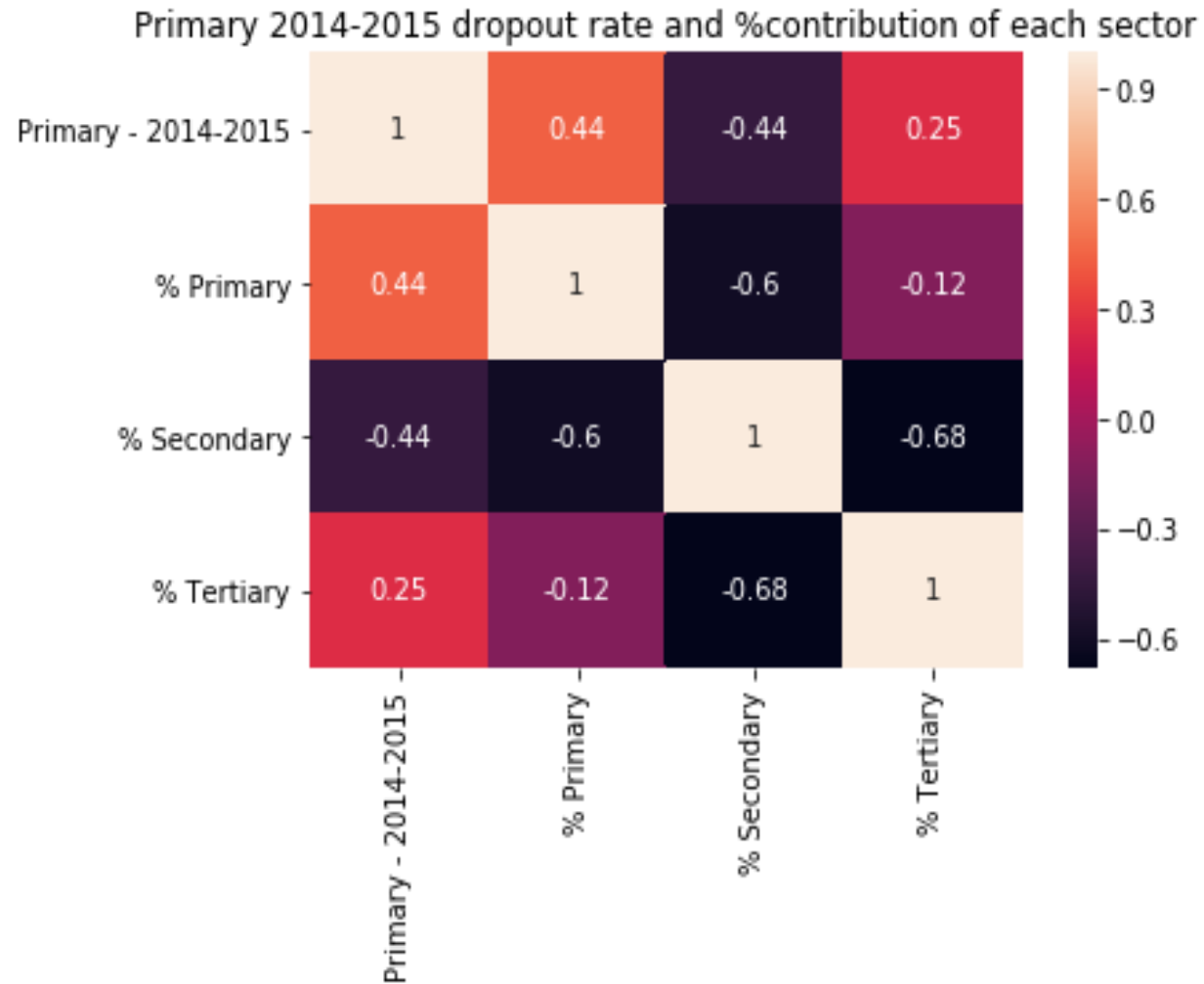
Correlation - dropout rate and per capita GDP



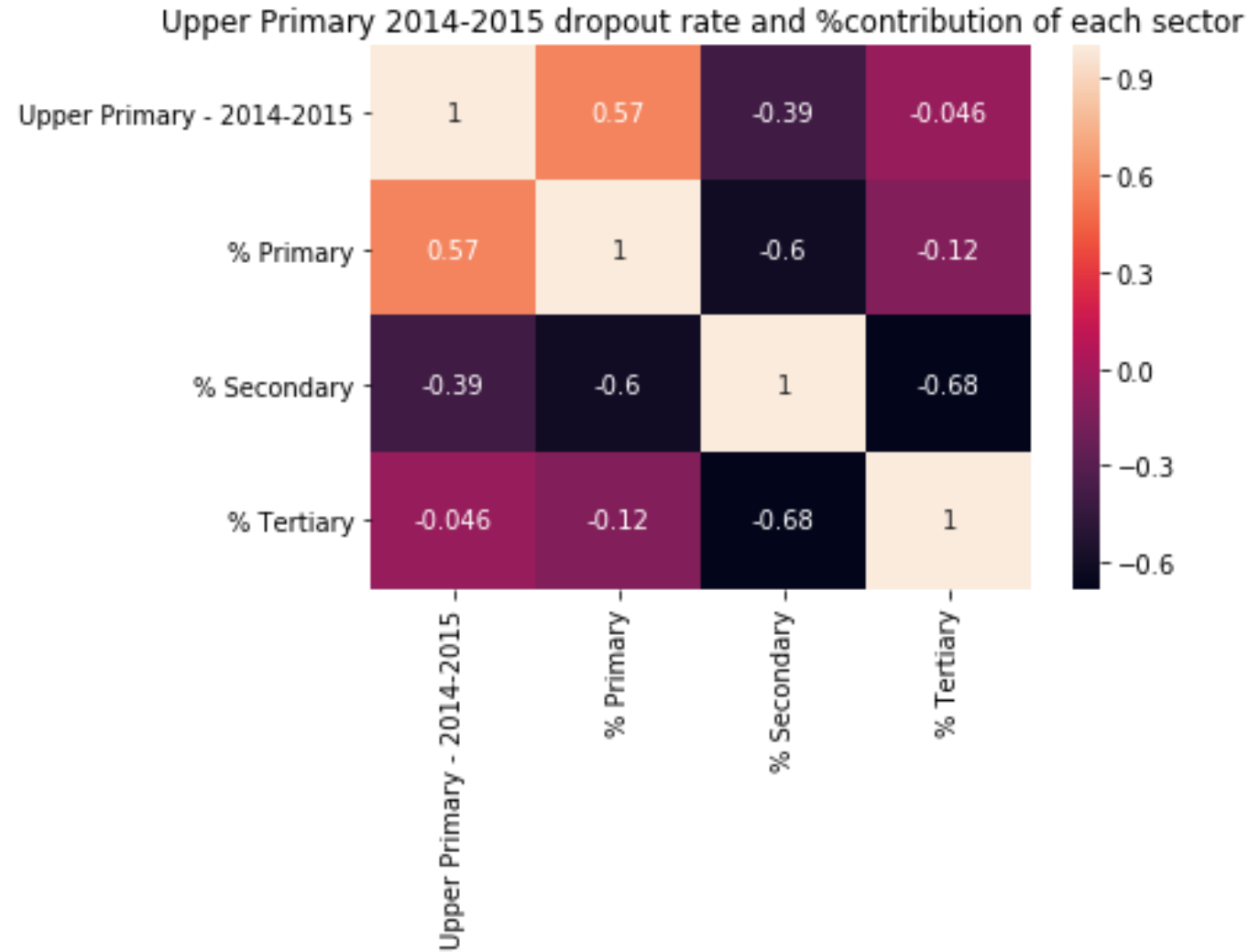
Analysis – Dropout and GDP per capita

Form the scatter plot and heatmap, we can see that the per capita GDP is negatively correlated with primary, upper primary and secondary dropout. There might be chance that if per capita GDP increase, then primary, upper primary and secondary students will be able to continue with their education. Hence, dropout rate will decrease.

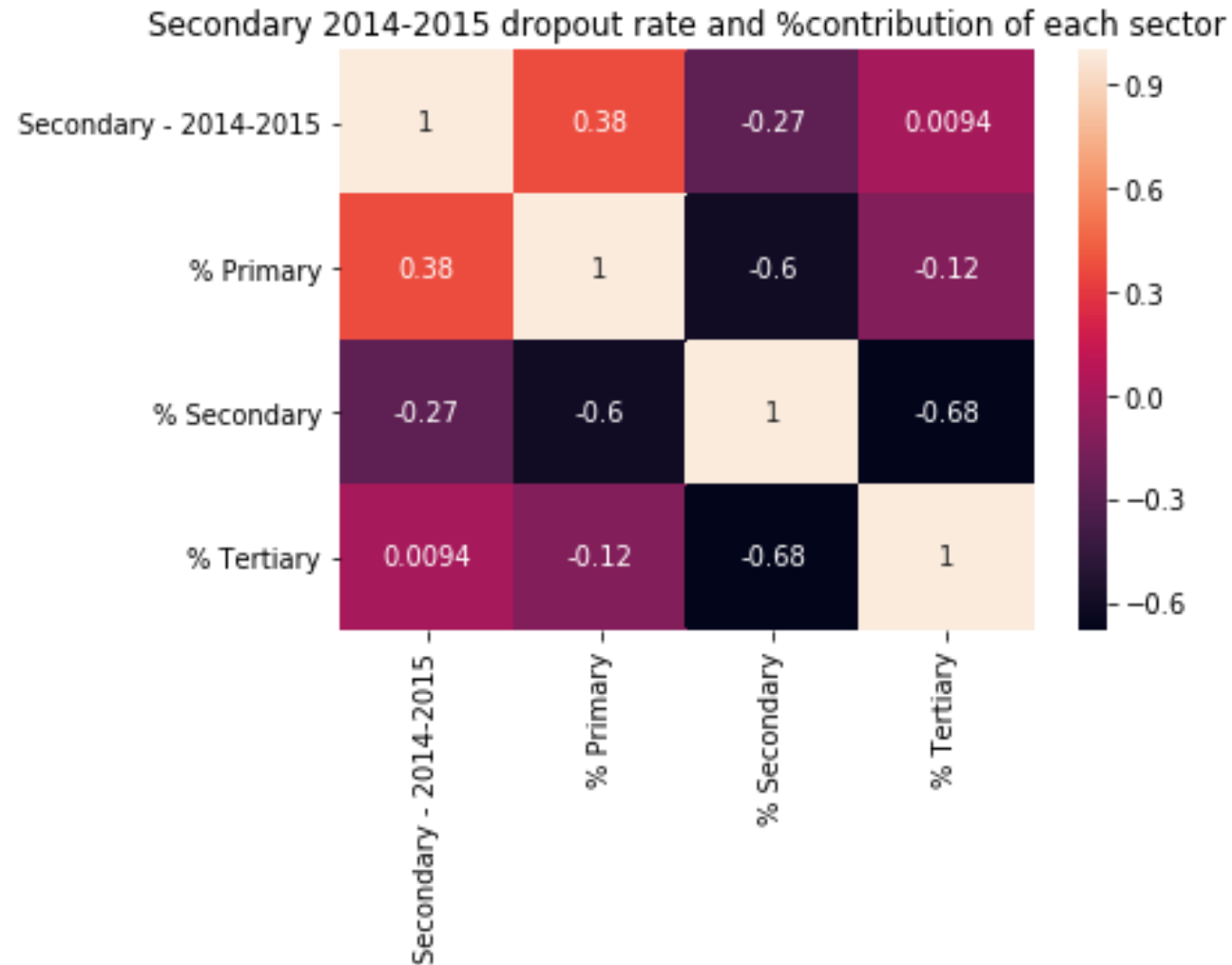
Primary 2014-2015 dropout rate and %contribution of each sector



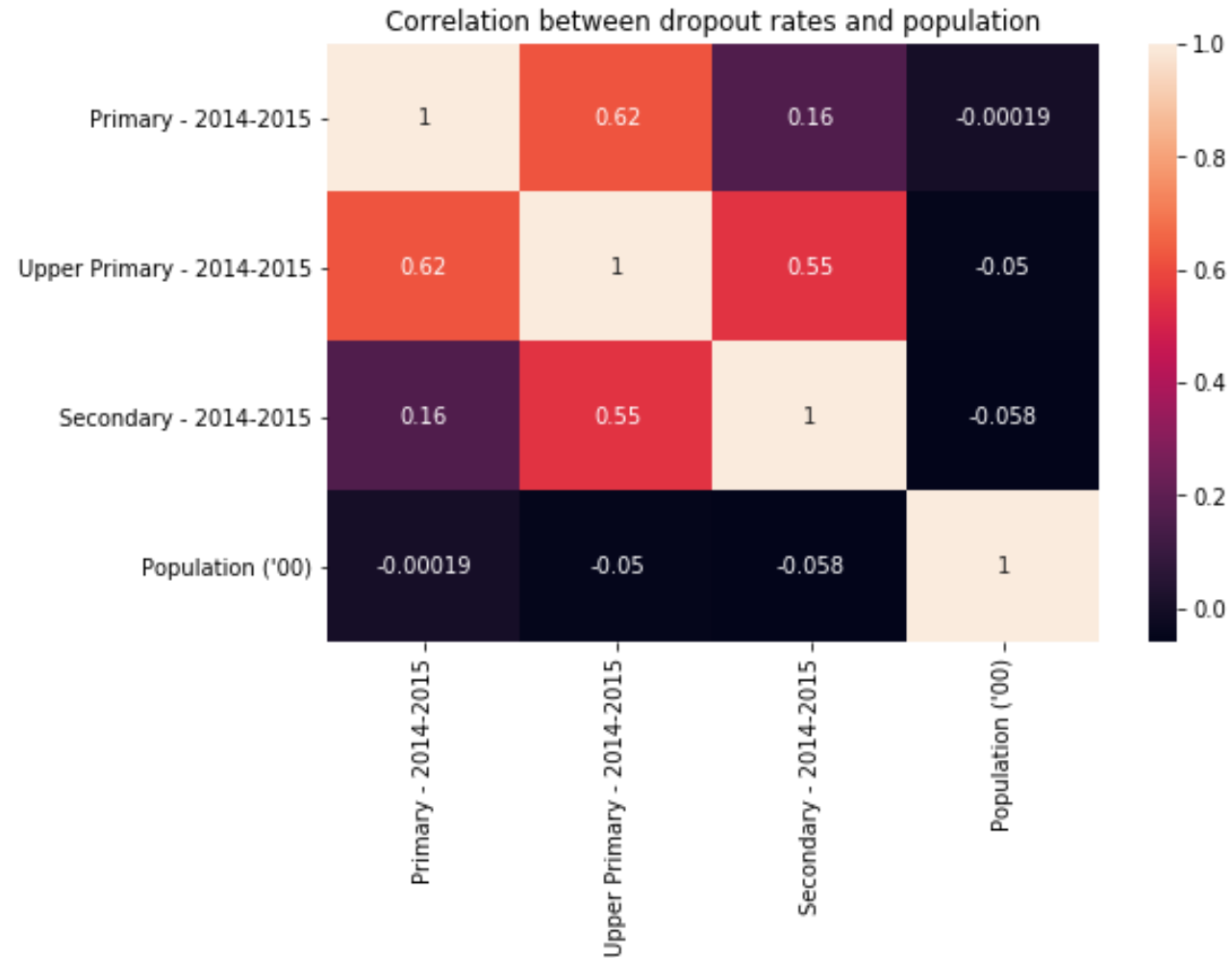
Upper Primary 2014-2015 dropout rate and %contribution of each sector



Secondary 2014-2015 dropout rate and %contribution of each sector



Correlation between dropout rates and population



Recommendations

- C1 – Category State
 - Construction and Other services need to be focused.
 - Financial service is highly correlated with GDP. we should focus on financial service.
- C2 – Category State
 - Financial Services and Other Services need to be focused.
 - Mining and quarrying and construction should be correlated, need to investigate why it is not happening.

Recommendations

- C3 – Category State
 - Other Services and Transport, storage, communication & services related to broadcasting need to be focused.
 - Mining and quarrying and Transport should be correlated but should less correlation. Investigation required.
- C4 – Category State
 - Construction and Transport, storage, communication & services related to broadcasting need to be focused. Construction is highly correlated with GDP
 - Mining and quarrying is negatively correlated with all other sub sector. Need to do some investigation.

Roadmap

1. Loaded Part -1 data file into jupyter.
2. Dropped all the union territories and null value columns.
3. Plotted best fit line with scatter plot for all the states using % growth over pervious year data.
4. Plotted a bar plot to compare the state's total GDP of the 2015-16 data.
5. Loaded part B data into python using for loop to read all the csv files.
6. Dropped all the rows belong to union territories.
7. Plotted bar plot for per capita GDP of the year 2014-15
8. Created % Primary, % Secondary, % Tertiary column to compare the % contribution of these sectors to the total GDP of the state.
9. Created C1/C2/C3/C4 categories based on GSDP.
10. Plotted sub sector wise % contribution towards 80% of the total GDP of each category.
11. Loaded education dropout data into python for analysis.
12. Cleaned the data columns to merge with GSVA data.
13. Plotted heatmap to find correlation between per capita GDP and primary, upper primary and secondary education.
14. Plotted heatmap to find correlation between % contribution of each sector and primary, upper primary and secondary education.
15. Plotted heatmap to find correlation between population and primary, upper primary and secondary education.