GDP Analysis Case study

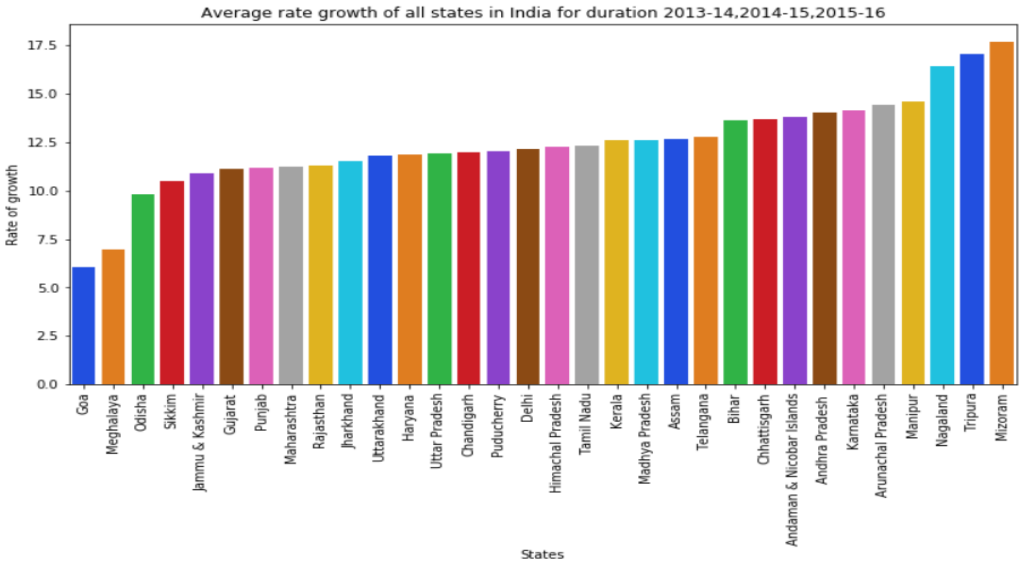
Part 1-A

Problem statement: Which states have been growing consistently fast, and which ones have been struggling? for during 2013-14, 2014-15 and 2015-16

We focused on percentage growth over previous year rows

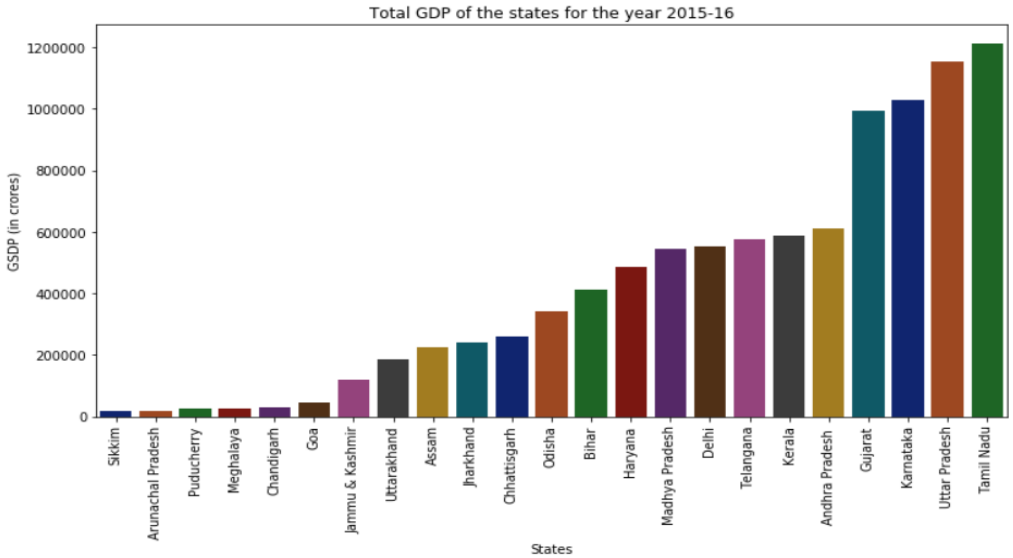
Data cleaning: Checked for duplicates in the data and removed the columns having more than 60% missing data

Result:



Problem statement: Plot the total GDP of the states for the year 2015-16:

Result:



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Part I-B

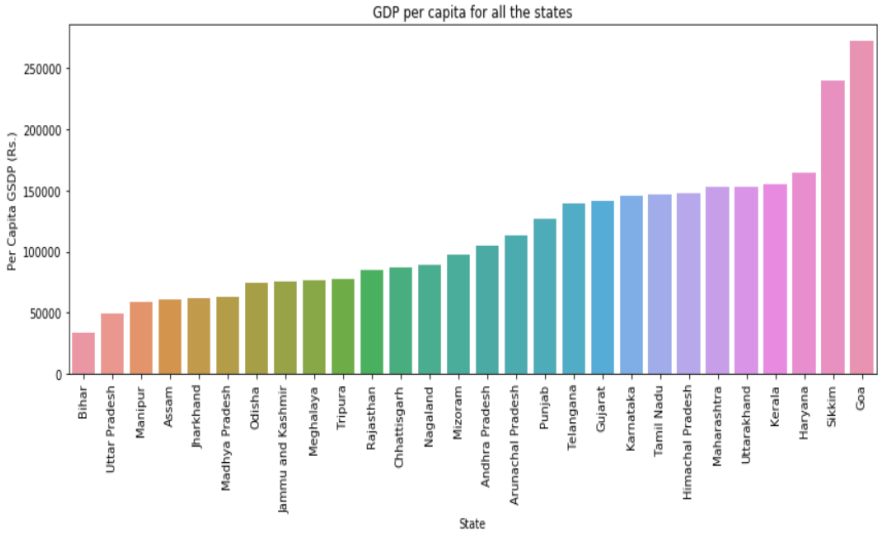
Combined individual state datasets by filter union territories

Analysis is conducted for year 2014-15.

Removed subsectors having more than 60% missing values

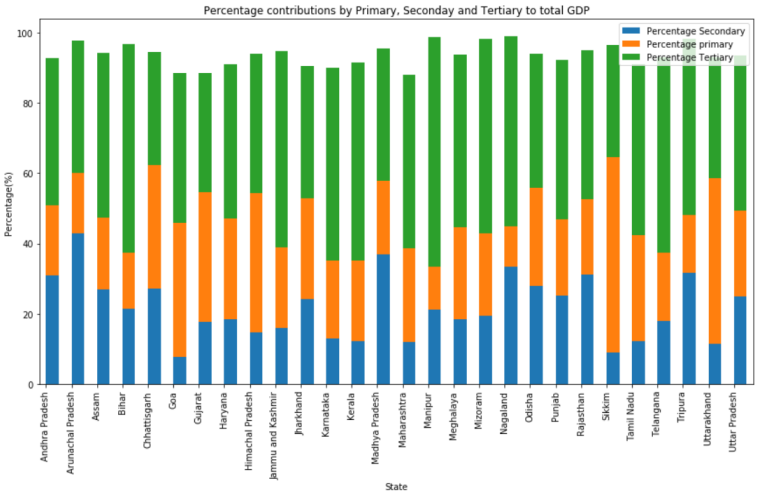
Problem statement: Plot the GDP per capita for all the states.

Result:



Problem: Plot the percentage contribution of the primary, secondary and tertiary sectors as a percentage of the total GDP for all the states.

Result:



Problem: Categorize the states into four groups based on the GDP per capita. The quantile values are (0.20,0.5, 0.85, 1)

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Result:

Category 1	Goa, Sikkim, Haryana, Kerala, Uttarakhand
Category 2	Maharashtra, Himachal Pradesh, Tamil Nadu, Karnataka, Gujarat, Telangana, Punjab, Arunachal Pradesh, Andhra Pradesh
Category 3	Mizoram, Nagaland, Chhattisgarh, Rajasthan, Tripura, Meghalaya, Jammu and Kashmir, Odisha
Category 4	Madhya Pradesh, Jharkhand, Assam, Manipur, Uttar Pradesh, Bihar

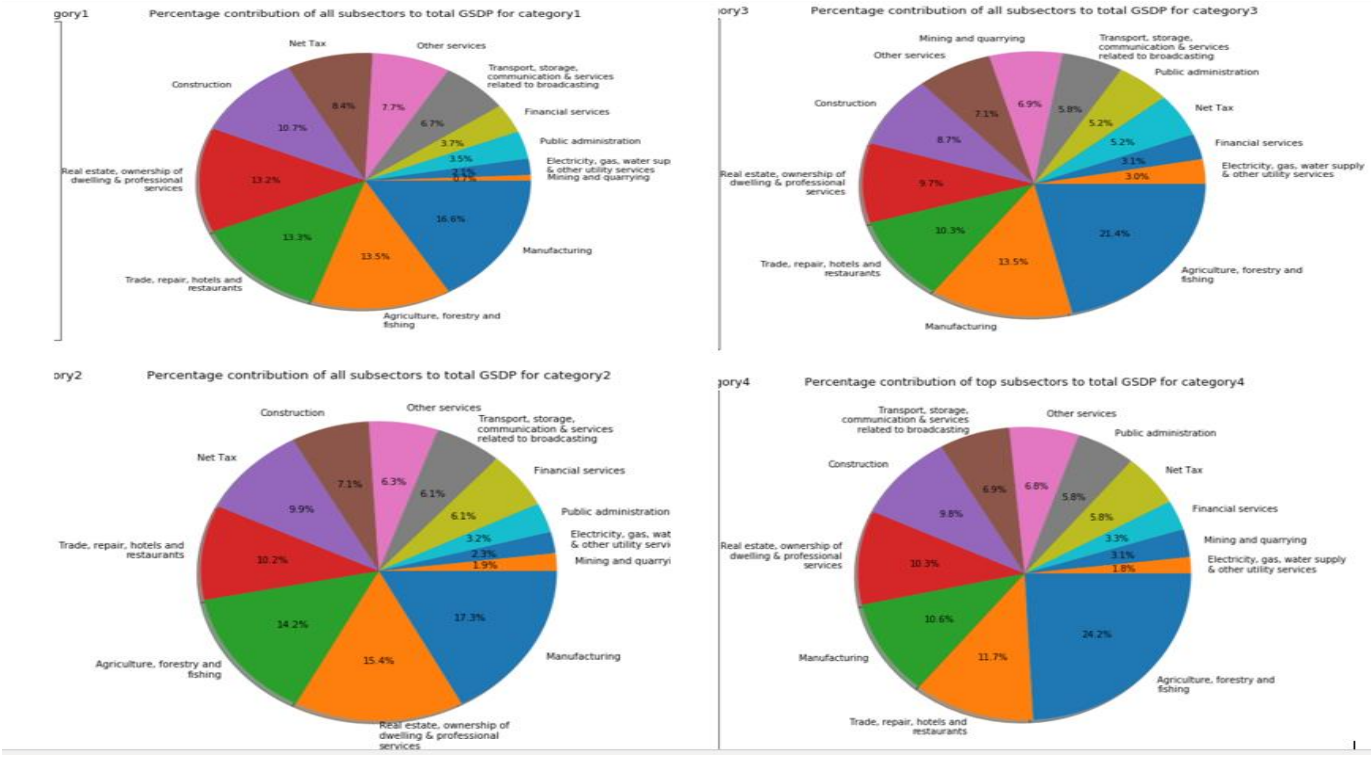
Problem: Find the top 3/4/5 sub-sectors that contribute to Approx. 80% of the GSDP of each category.

Result:

Category 1 Top sub sectors	Manufacturing; Agriculture, forestry and fishing; Trade, repair, hotels and restaurants; Real estate, ownership of dwelling & professional services; Construction; Net Tax.
Category 2 Top sub sectors	Manufacturing; Real estate, ownership of dwelling & professional services; Agriculture, forestry and fishing; Trade, repair, hotels and restaurants; Net Tax; Construction; Other services.
Category 3 Top sub sectors	Agriculture, forestry and fishing; Manufacturing; Trade, repair, hotels and restaurants; R eal estate, ownership of dwelling & professional services; Construction; Other services; Mining and quarrying.
Category 4 Top sub sectors	Agriculture, forestry and fishing; Trade, repair, hotels and restaurants; Manufacturing, Real estate, ownership of dwelling & professional services; Construction; Transport, stor age, communication & services related to broadcasting.

Problem: Plot the contribution of the sub-sectors as a percentage of the GSDP of each category

Result:



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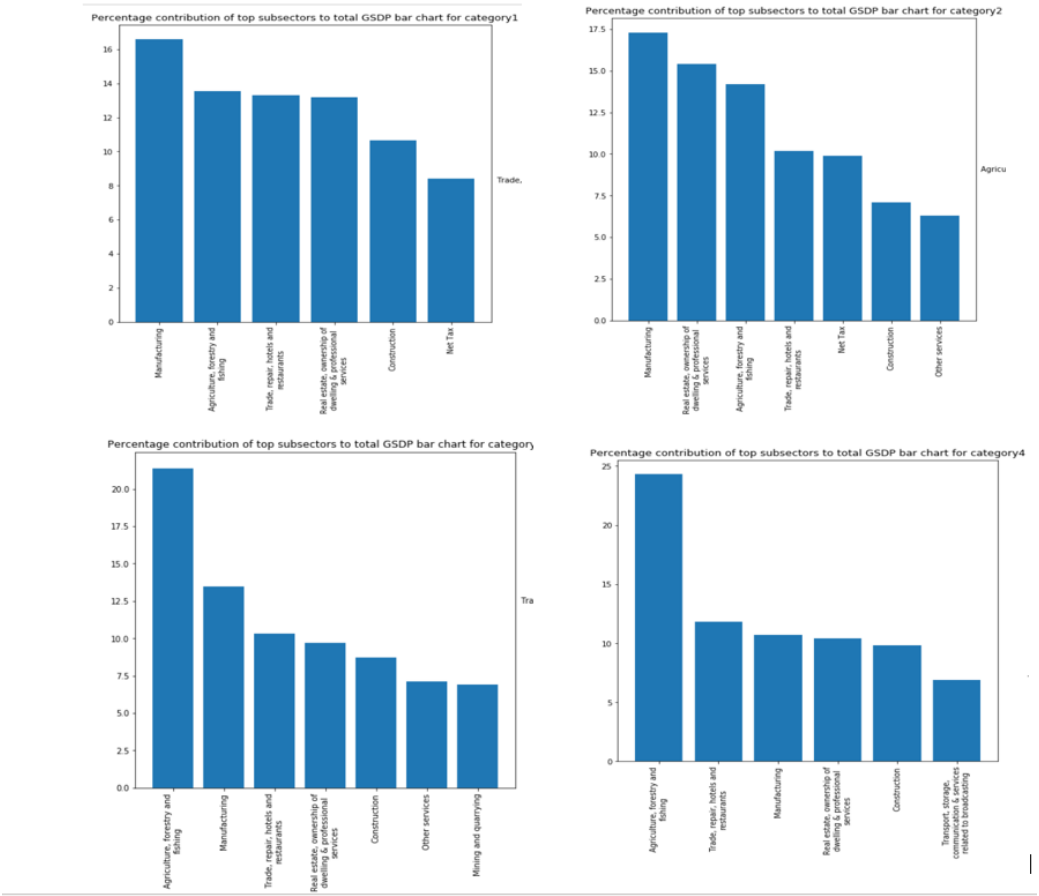
How does the GDP distribution of the top states (C1) differ from the others?

- C1 is uniformly distributed among to 5 sub sectors having more than 8% but other are distributed in exponential decreasing pattern.



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

- Manufacturing, Agriculture, forestry and fishing, Trade, repair, hotels and restaurants, Real estate, ownership of dwelling & professional services, Construction

Which sub-sectors do the various categories need to focus on?

- Electricity, gas, water supply & other utility services, Mining and quarrying, Financial services, Public administration.

Recommendation:

Category 1 should focus on the Manufacturing; Agriculture, forestry and fishing;
Trade, repair, hotels and restaurants; Real estate, ownership of dwelling & professional services;
Construction.

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Category 2 should focus on Agriculture, forestry and fishing; Manufacturing;
Trade, repair, hotels and restaurants; Real estate, ownership of dwelling & professional services;
Construction.

Category 3 should focus on Manufacturing; Real estate, ownership of dwelling & professional services;
Agriculture, forestry and fishing; Trade, repair, hotels and restaurants; Tax .

Category 4 should focus on Agriculture, forestry and fishing; Trade, repair, hotels and restaurants;
Manufacturing; Real estate, ownership of dwelling & professional services; Construction.

Introducing scientific technologies to primary, secondary and tertiary sectors and improving education systems helps in increasing the per capita.

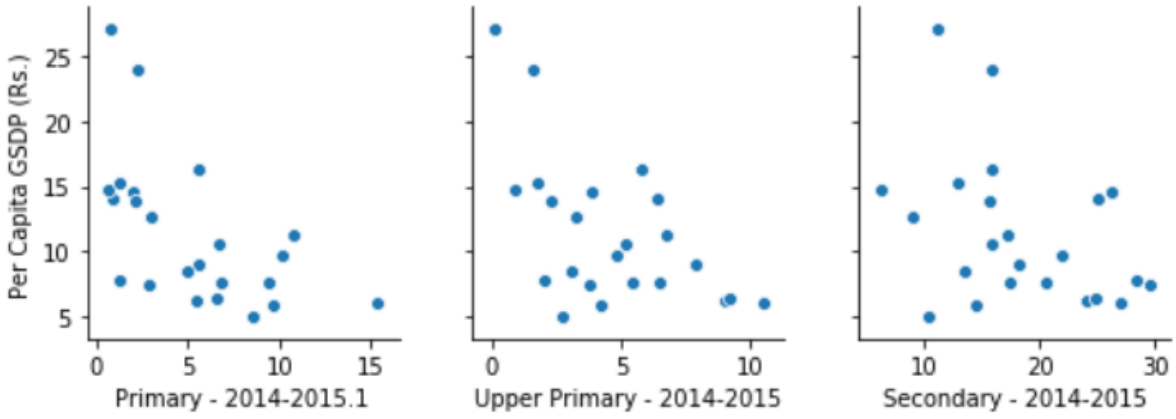
Increase the rate consummation of Electricity and other utilities by providing discounts on tariff rates for higher consumers.

Public administration can be improved by regulating corruption and efficient budget planning and implementation.

Financial services can be improved, if banks are able to provide credit/loan for decent interest rates.

Part II

Analyze if there is any correlation of GDP per capita with dropout rates in education (primary, upper primary and secondary) for the year 2014-2015 for each state



- primary and upper primary dropout rate is highly negatively correlated to Per capita.
- Secondary dropout rate is negatively correlated to Per Capita.

To improve the per capita of states, we must improve the education by making it available to the people in the state, by establishing government schools and college, take necessary steps to attract student to comes to school and reduce the dropout rate.