Analysis of GDP of the Indian States and the Education Dropout Rates

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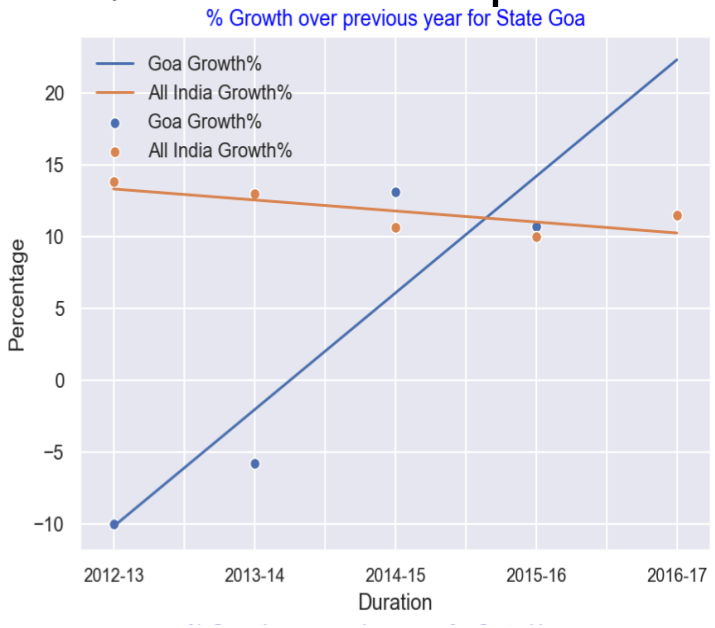
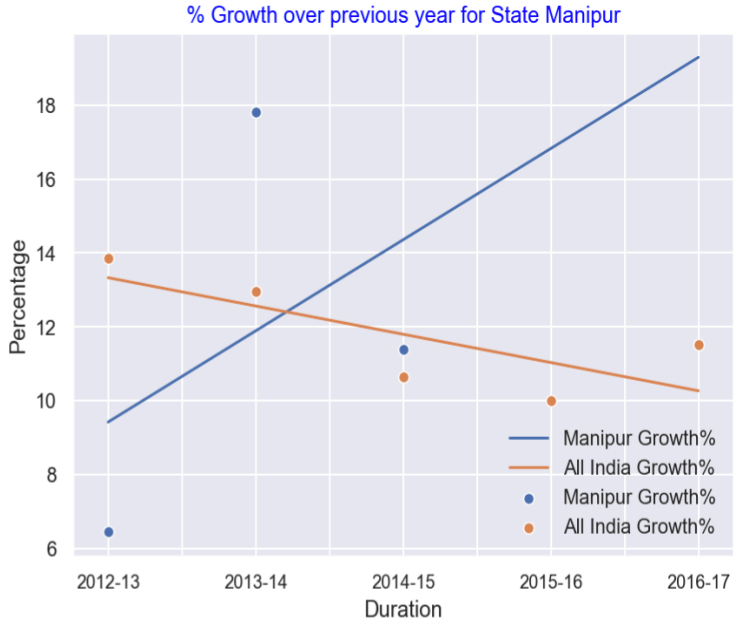
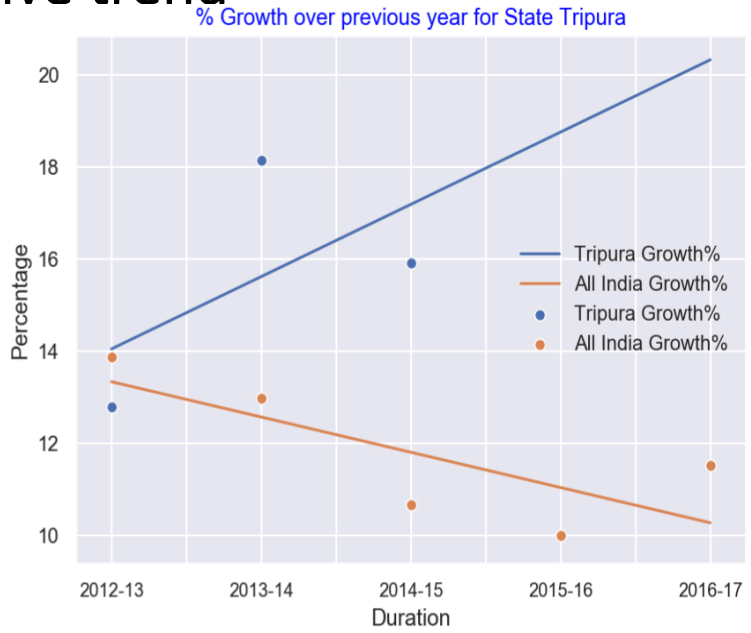
GDP Analysis of the Indian States

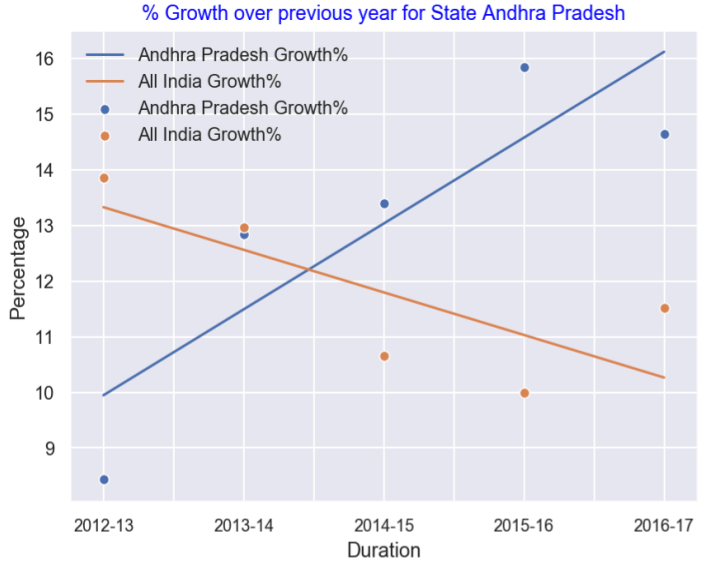
- There is an overall decreasing Trend in the growth of GDP for states
- All India Growth% has decreased from year 2012-13 till 2016-17
- In comparison to All India Growth%, states like Goa, Manipur, Tripura, Jammu & Kashmir, Assam, Meghalaya, Tripura are doing better with positive trend in Growth%
- States like Maharashtra, Nagaland, Gujarat, Himachal Pradesh, Karnataka have negative trend in Growth%

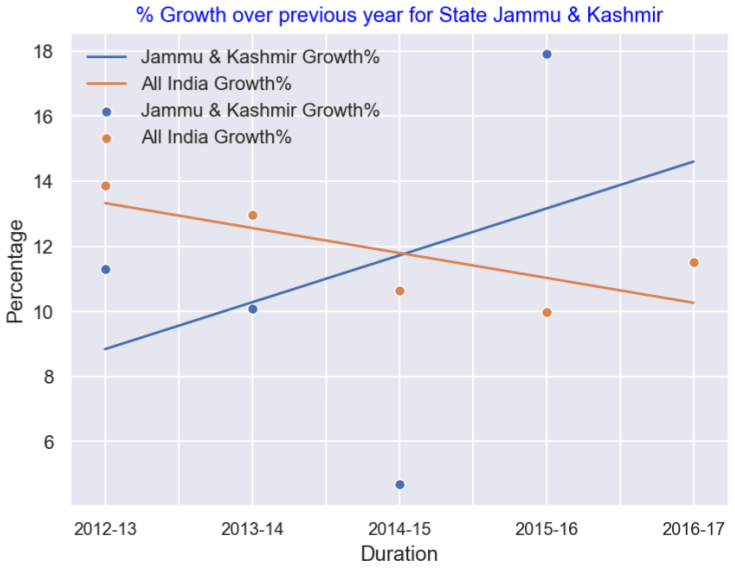
%Growth over previous years of top ranked states with Positive trend

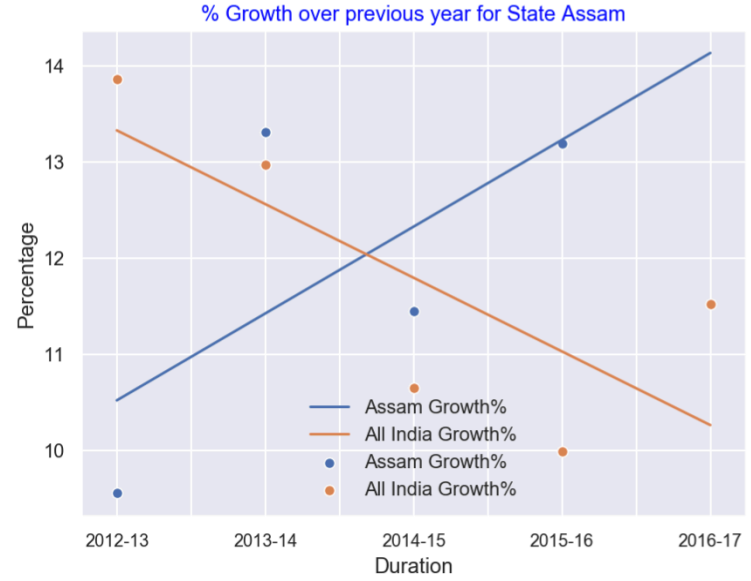






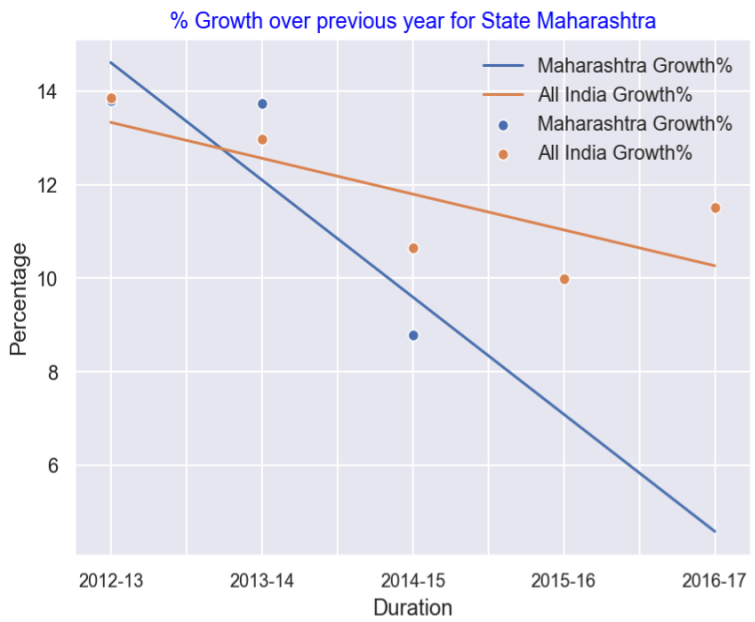


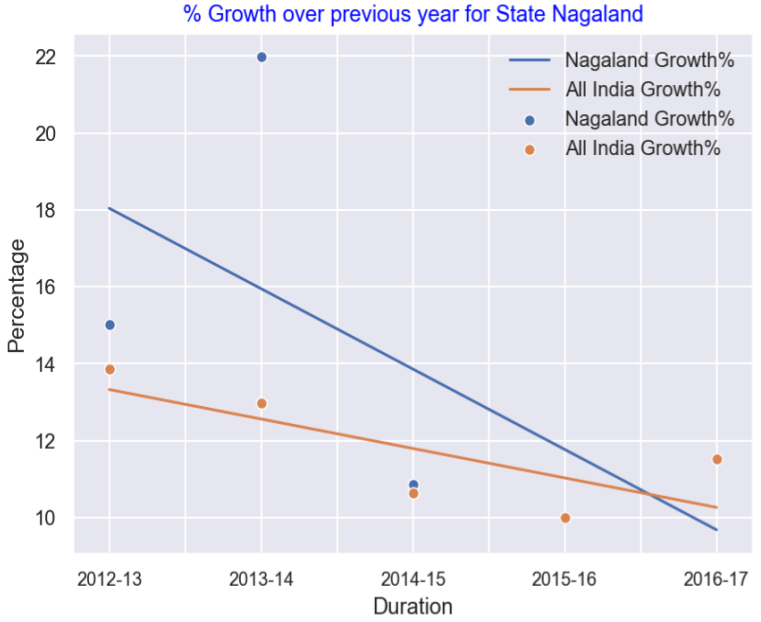


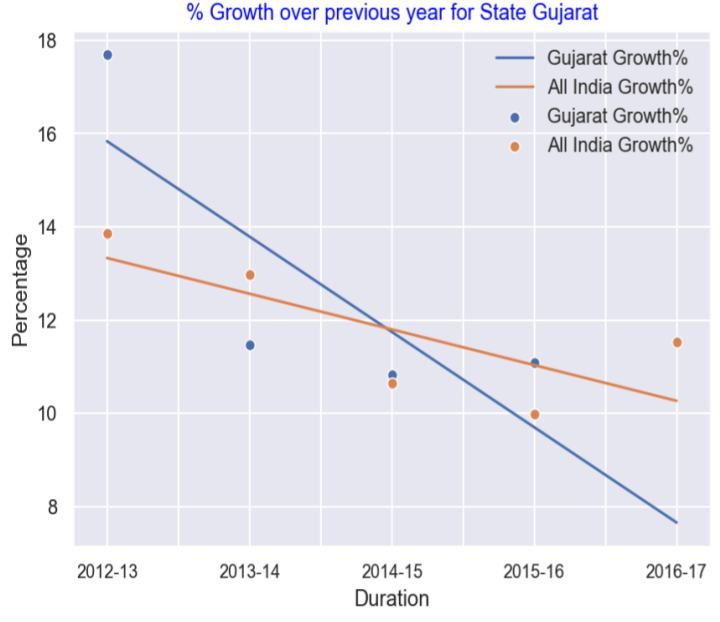


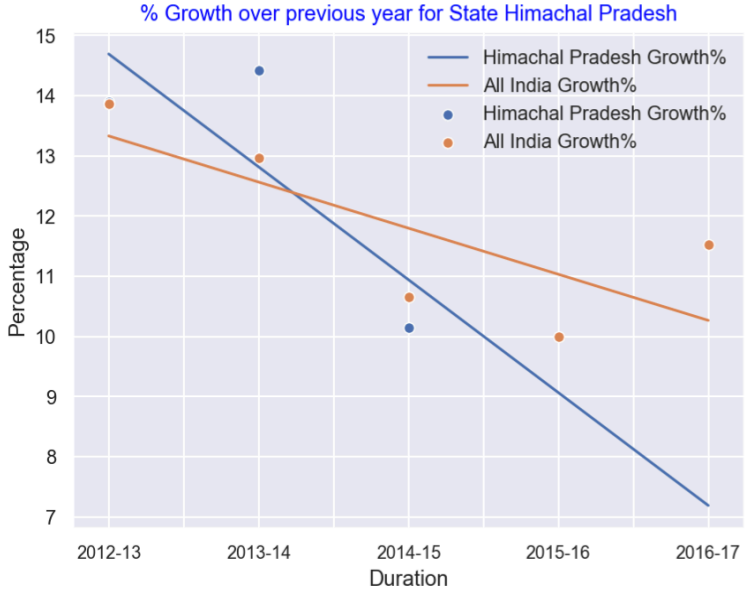
Despite India's average growth being negative, the above states have been growing at an unprecedented range. This could be possible due to multiple factors – low base, non-dependence on external factors etc.

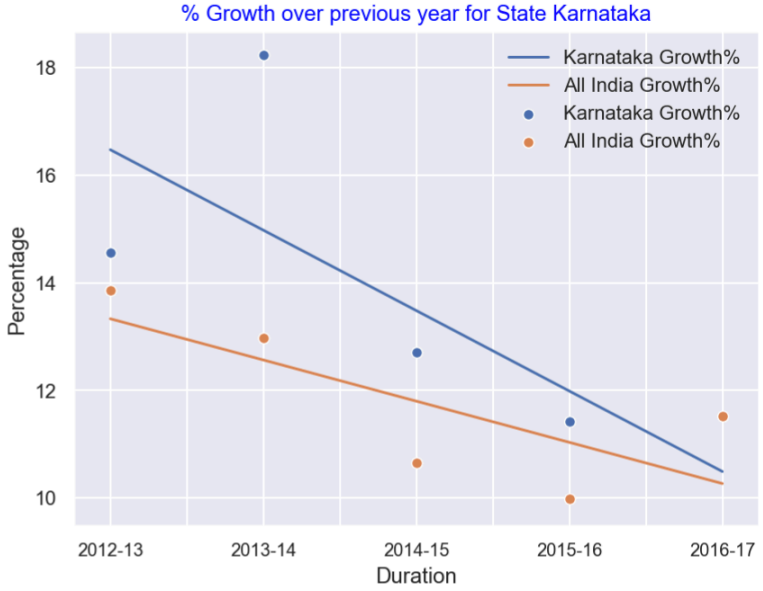
%Growth over previous years of top ranked states with Negative trend

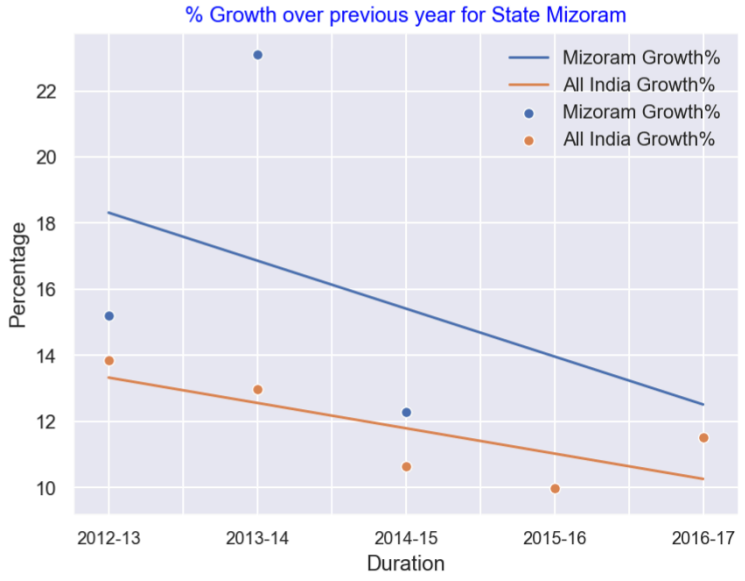






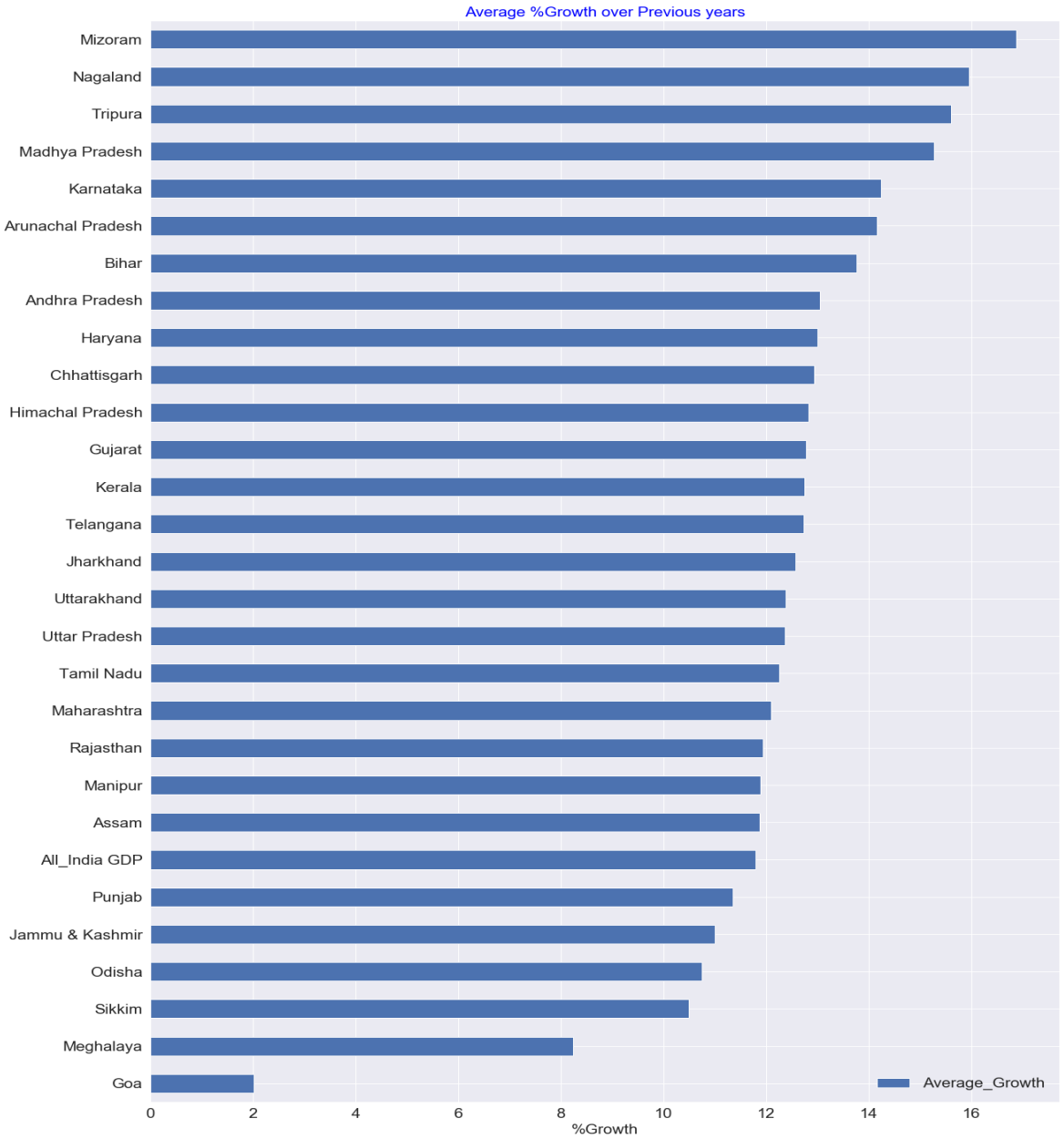






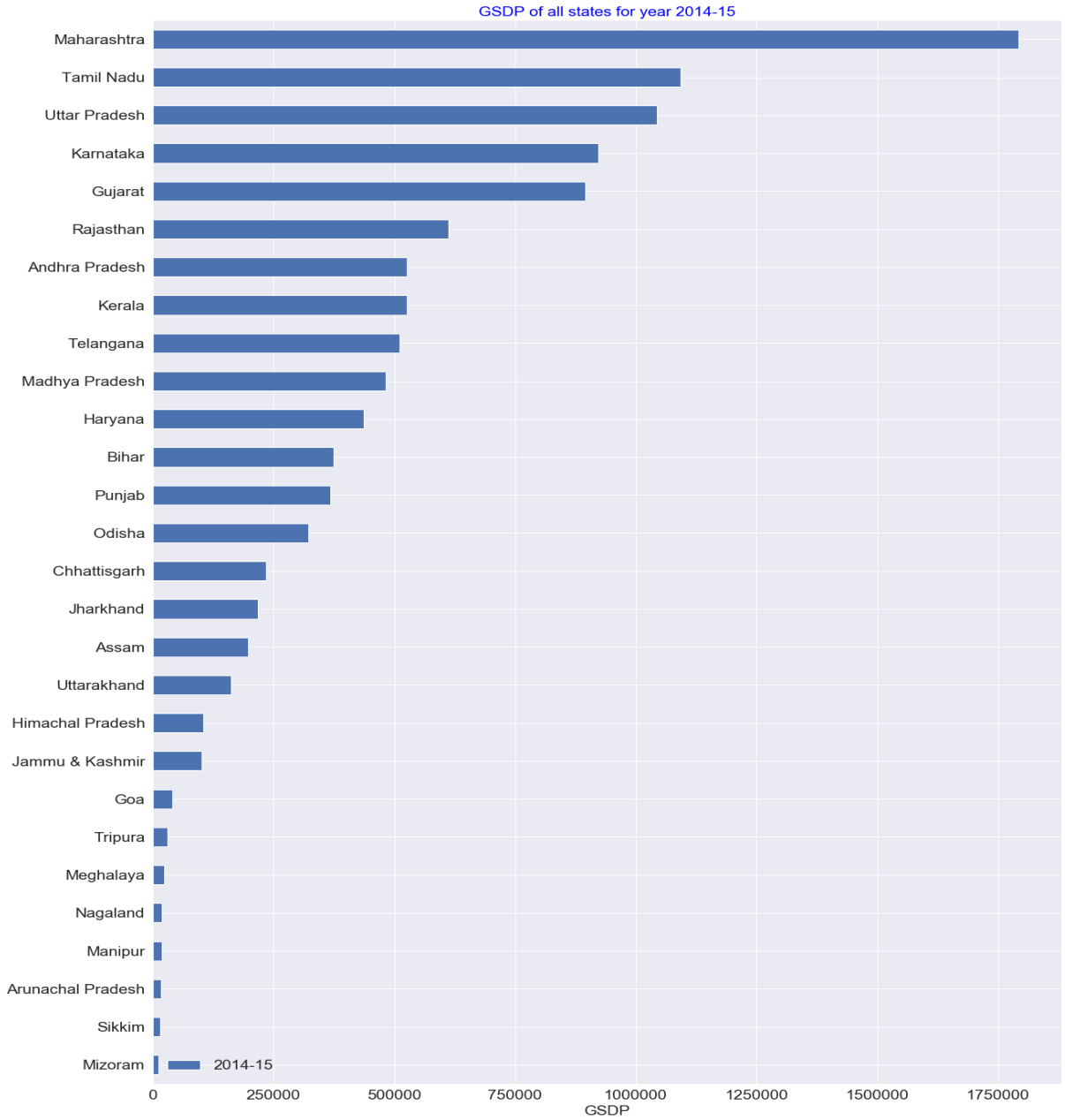
India's one of largest state Maharashtra has been de-growing more than India's national average. Other states like Gujarat, Karnataka are also showing negative growth. Mizoram has been de-growing but still not at par with national average (perhaps base effect)

Average %Growth over Previous Years



- State of Mizoram(16.87%) has highest average growth percentage rate over previous years followed by Nagaland(15.95%), Tripura(15.61%)
- State of Goa(2.02%) has the lowest average growth percentage followed by Meghalaya(8.24%) second lowest and Sikkim(10.49%) third lowest in average growth percentage over previous years
- All India GDP average growth rate is 11.87%
- Average Growth Rate of my home state Haryana(13.0%) is more than All India GDP average growth rate. There was a sudden decrease in growth rate from 15.45% in 2013-14 to 9.18% in 2014-15. But after that there has been increase in growth rate with 10.91% in 2015-16 to 12.82% in 2016-17. This has resulted in average growth rate of 13% and is ranked as 9th highest in average growth Percentage over previous years

GDP of all States



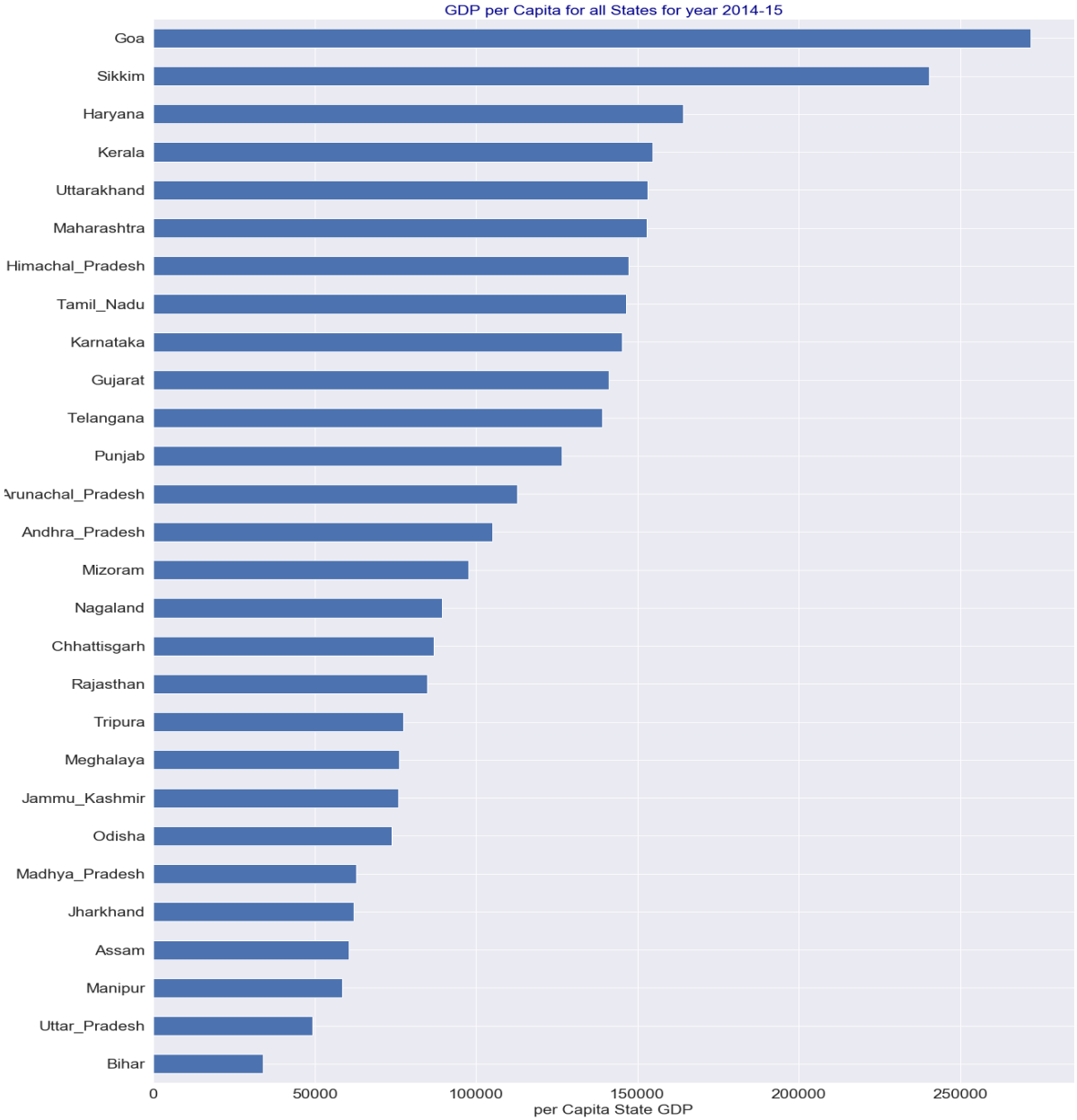
For the year of 2014-15:

- GSDP of state Maharashtra(1792122.0) is highest followed by Tamil Nadu(1092564.0) and then Uttar Pradesh(1043371.0)

- GSDP of state Mizoram (11559.0) is the lowest followed by Sikkim(15209.0) as 2nd lowest and Arunachal Pradesh(16761.0) as 3rd lowest

- Government needs to focus on increasing GSDP of these lowest ranking states. Measure for growth improvement needs to be brought in for these states

GDP per Capita of all States



For the year of 2014-15:

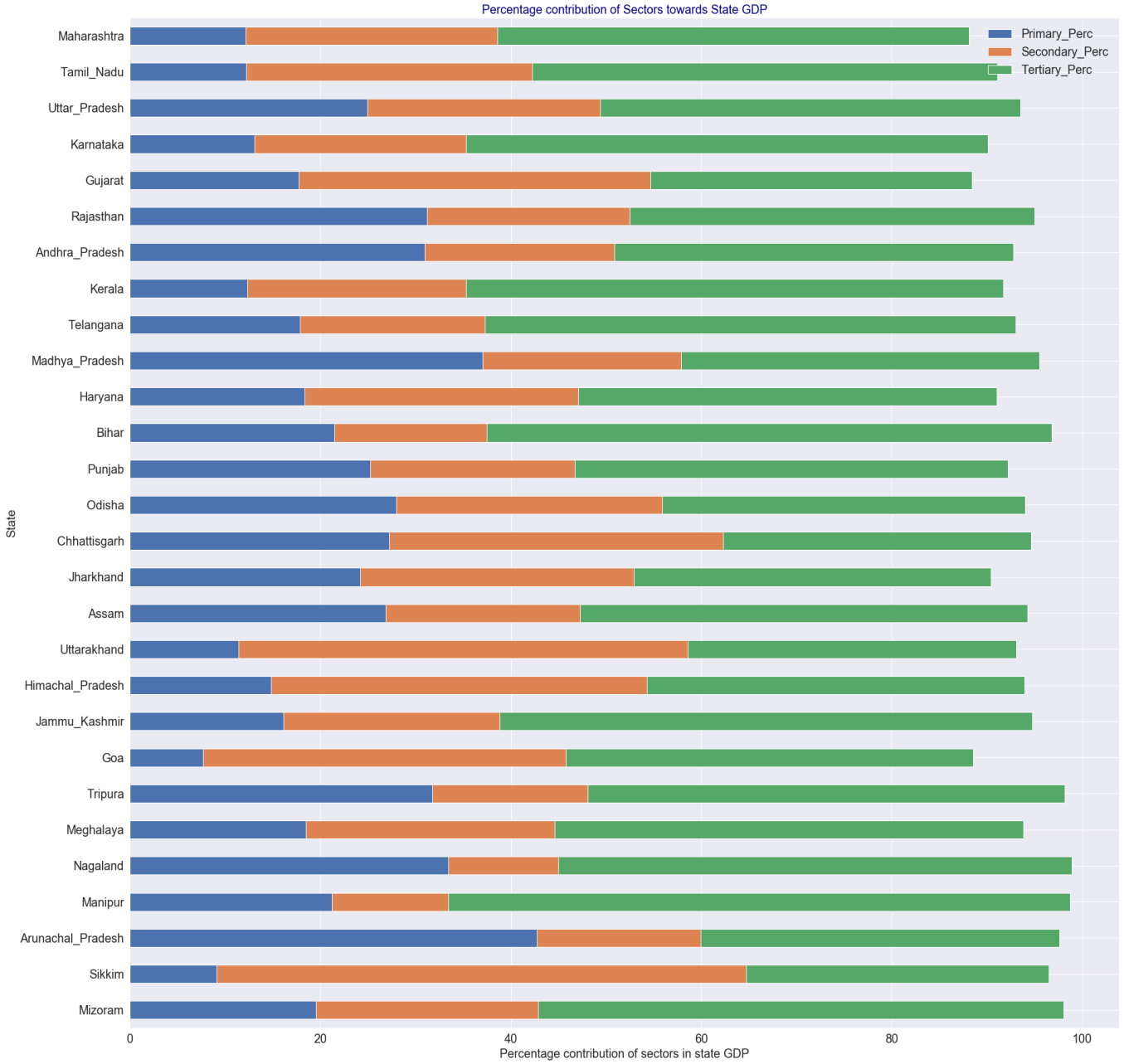
- Goa(271793) has the highest per Capita GDP in Rs, followed by Sikkim(240274) and Haryana(164077), Kerala(154778) and Uttarakhand(153076)

- Bihar(33954) has the lowest per Capita GDP in Rs , followed by Uttar Pradesh(49450), Manipur(58442), Assam(60621) and Jharkhand(62091) in that order.

- As from previous slide, even though Sikkim has 2nd lowest GSDP, it has the 2nd highest GDP per Capita

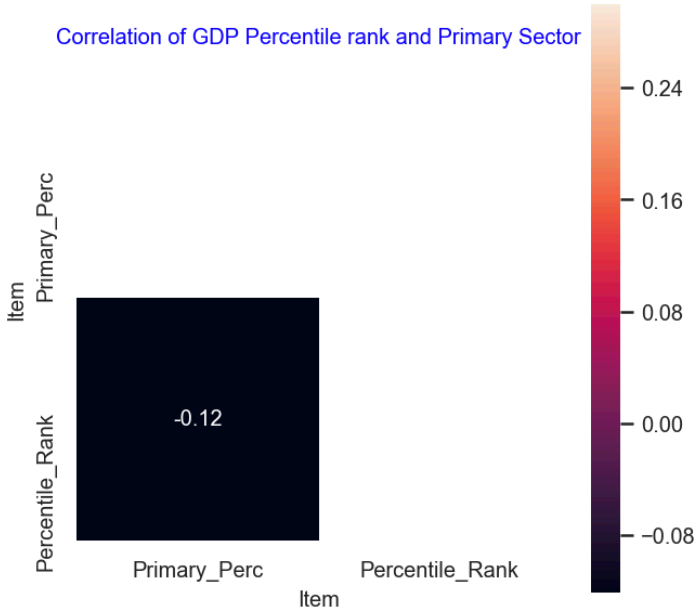
- GSDP of Maharashtra is highest for year 2014-15 but GDP per Capita for this state is 6th highest

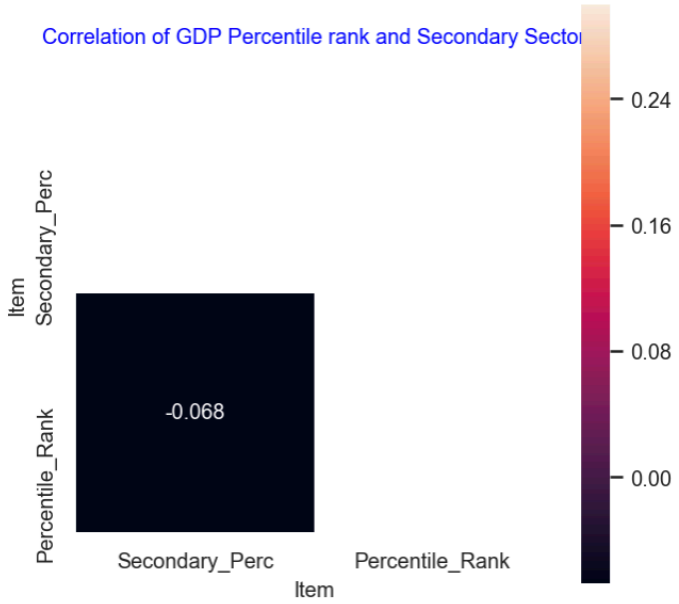
%Contribution of Sector to State GDP

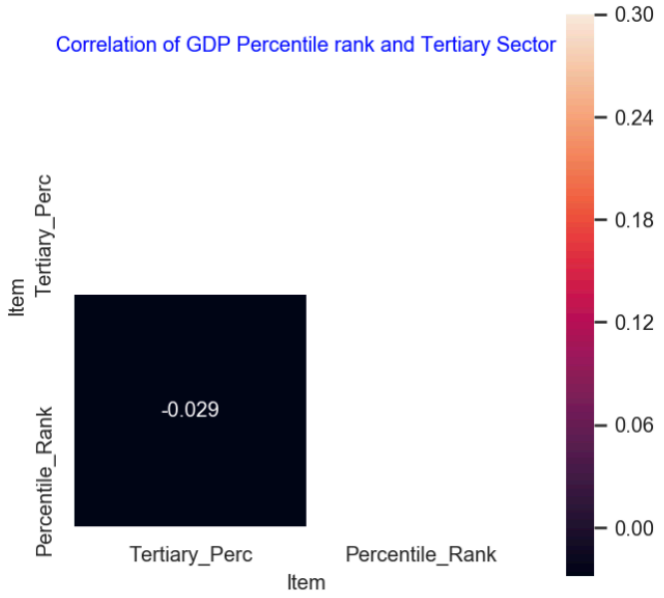


- Maharashtra has highest GDP(179212165) followed by Tamil Nadu(109256373) and Uttar Pradesh(104337115).
- Tertiary sector is the main contributor to Maharashtra, Tamil Nadu and Uttar Pradesh states GDP
- Highest contribution from Primary sector is for State Arunachal Pradesh(42.77%)
- Highest contribution from Secondary Sector is for State Sikkim(55.57%)
- Highest contribution from Tertiary Sector is for State Manipur (65.25%)

Correlation between State GDP Percentile rank and %Contribution of Primary, Secondary and Tertiary Sectors





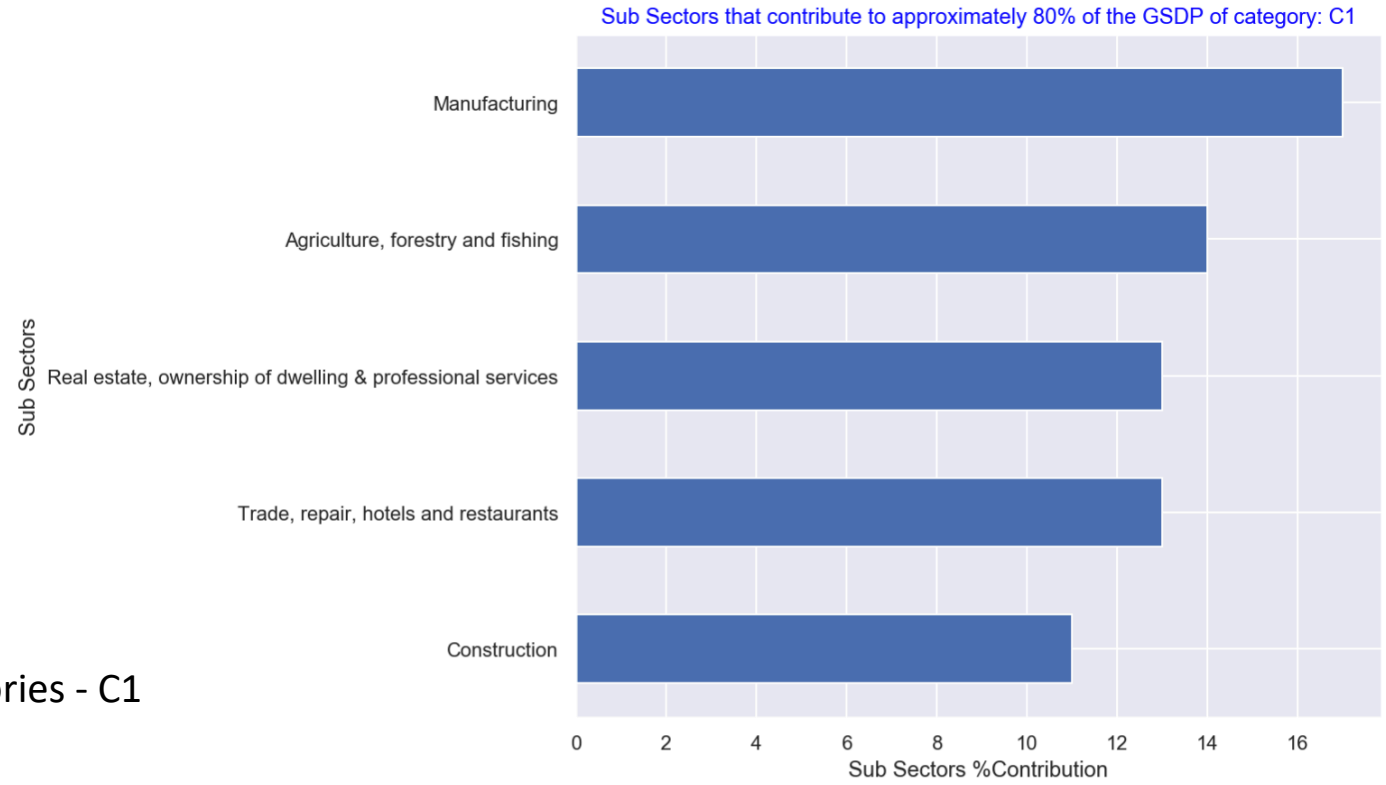


- There is negative correlation(-0.12) between percentile rank of state GDP and Primary Sector Contribution. With Lower GDP, the %contribution of Primary Sector is higher and vice versa
- There is negative correlation(-0.068) between percentile rank of state GDP and Secondary Sector Contribution. With Lower GDP, the %contribution of Secondary Sector is higher and vice versa
- There is negative correlation(-0.029) between percentile rank of state GDP and Tertiary Sector Contribution. With Lower GDP, the %contribution of Tertiary Sector is higher and vice versa
- Amongst three sectors, Primary Sector is most negatively correlated. In other words with lower State GDP, the %Contribution of Primary Sector is most

Sub Sectors contributing to appx. 80% of State GDP

States are categorised into four groups based on the GDP per capita (C1, C2, C3, C4, where C1 would have the highest per capita GDP and C4, the lowest). The states lying between the 85th and the 100th percentile are in category C1

State	Per Capita GSDP (Rs.)	Category
Goa	271793	C1
Sikkim	240274	C1
Haryana	164077	C1
Kerala	154778	C1
Uttarakhand	153076	C1



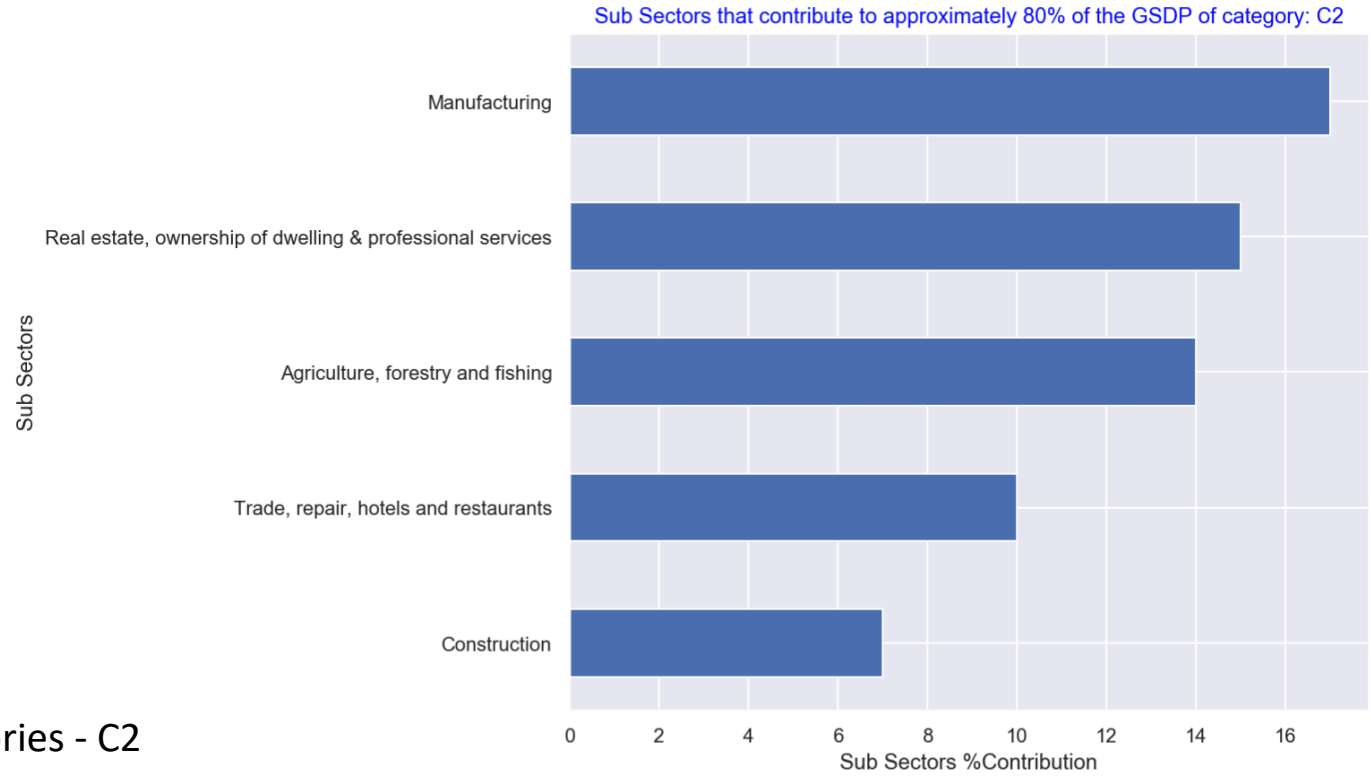
Sub sectors that contribute to 80% of GSDP of categories - C1

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

Sub Sectors contributing to appx. 80% of State GDP

States are categorised into four groups based on the GDP per capita (C1, C2, C3, C4, where C1 would have the highest per capita GDP and C4, the lowest). The states lying between the 50th and the 85th percentile are in category C2

State	Per Capita GSDP (Rs.)	Category
Maharashtra	152853	C2
Himachal_Pradesh	147330	C2
Tamil_Nadu	146503	C2
Karnataka	145141	C2
Gujarat	141263	C2
Telangana	139035	C2
Punjab	126606	C2
Arunachal_Pradesh	112718	C2
Andhra_Pradesh	104977	C2



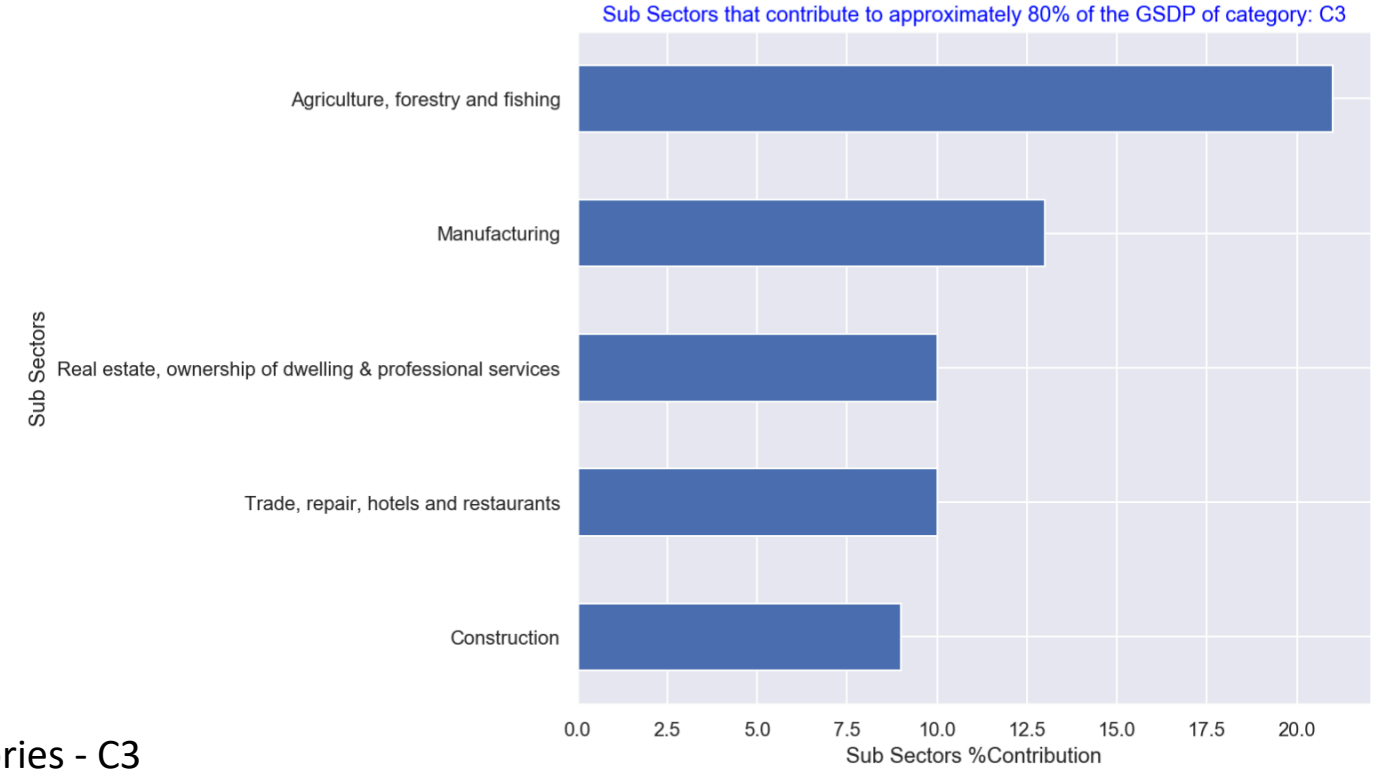
Sub sectors that contribute to 80% of GSDP of categories - C2

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

Sub Sectors contributing to appx. 80% of State GDP

States are categorised into four groups based on the GDP per capita (C1, C2, C3, C4, where C1 would have the highest per capita GDP and C4, the lowest). The states lying between the 20th and the 50th percentile are in category C3

State	Per Capita GSDP (Rs.)	Category
Mizoram	97687	C3
Nagaland	89607	C3
Chhattisgarh	86860	C3
Rajasthan	84837	C3
Tripura	77358	C3
Meghalaya	76228	C3
Jammu_Kashmir	75840	C3
Odisha	73979	C3



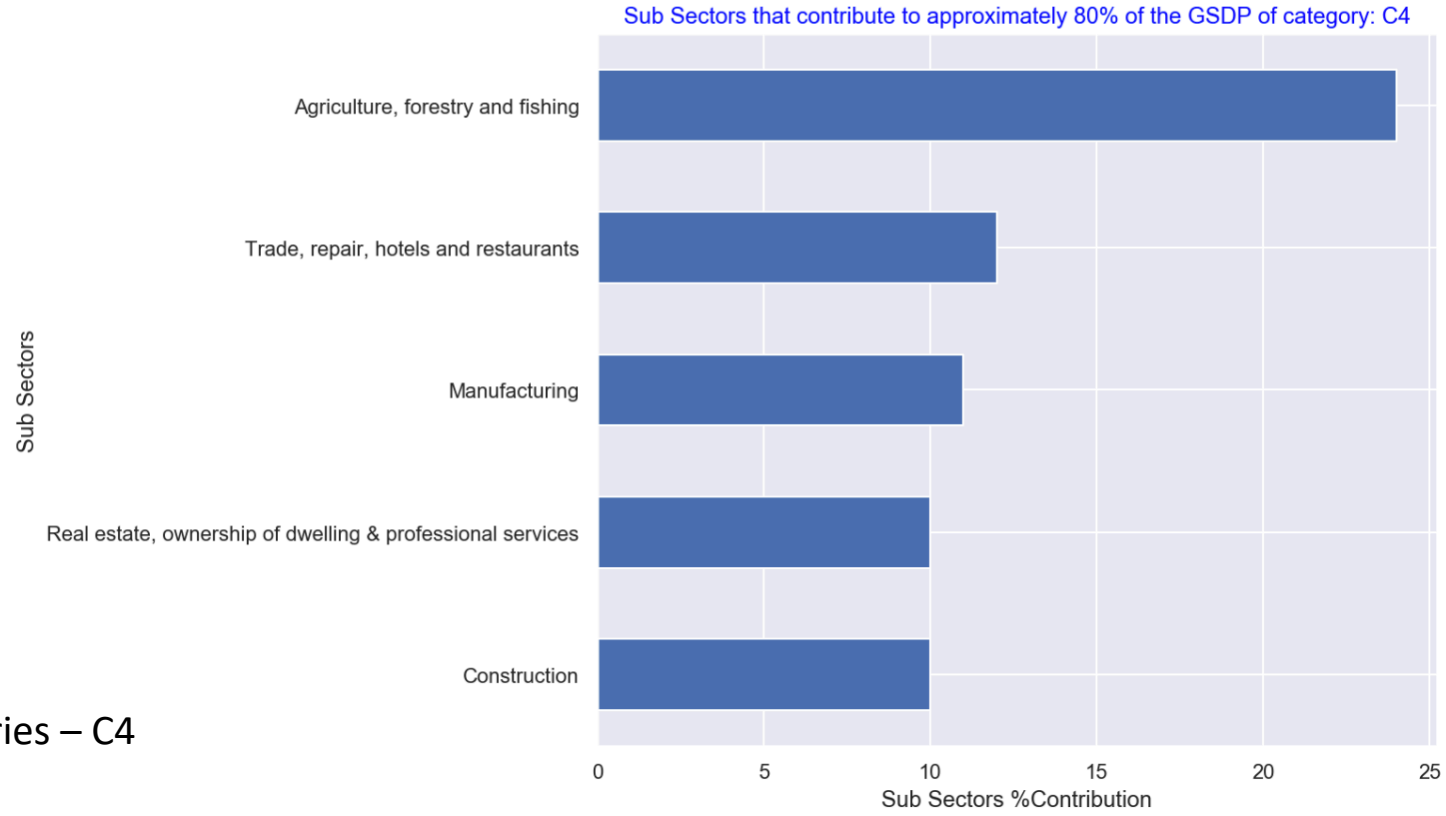
Sub sectors that contribute to 80% of GSDP of categories - C3

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

Sub Sectors contributing to appx. 80% of State GDP

States are categorised into four groups based on the GDP per capita (C1, C2, C3, C4, where C1 would have the highest per capita GDP and C4, the lowest). The states lying in the 25th percentile are in category C4

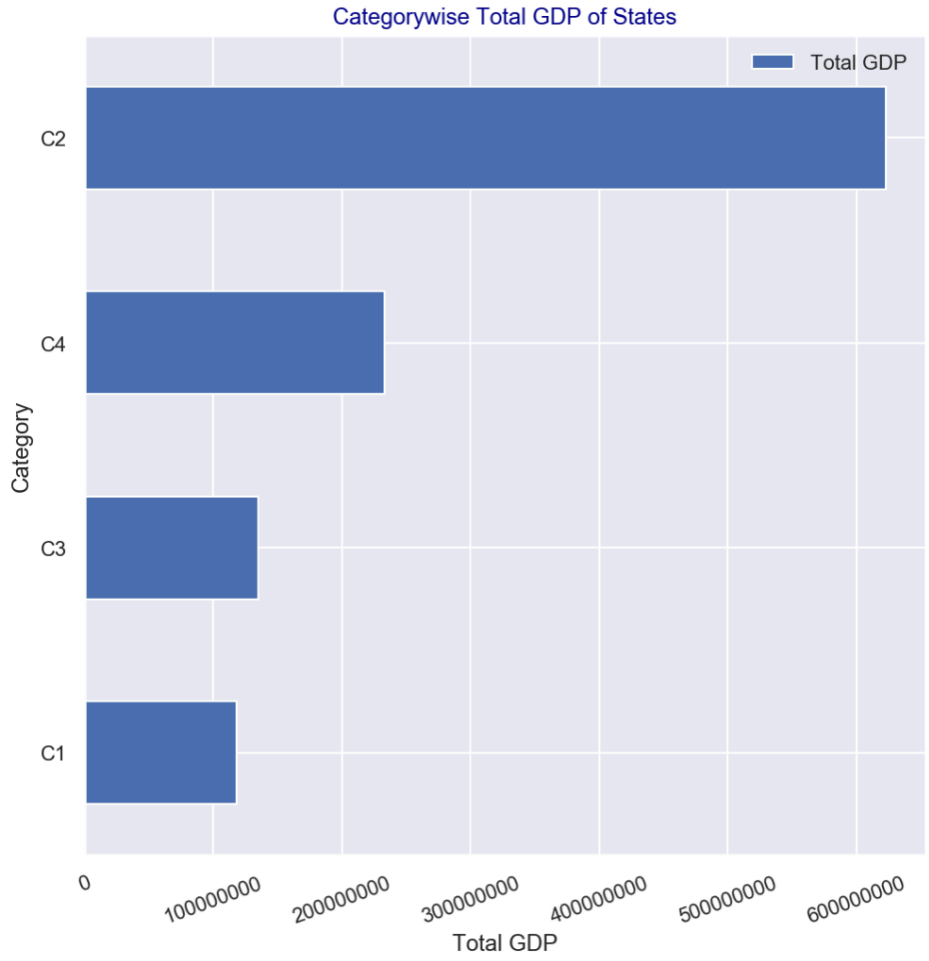
State	Per Capita GSDP (Rs.)	Category
Madhya_Pradesh	62989	C4
Jharkhand	62091	C4
Assam	60621	C4
Manipur	58442	C4
Uttar_Pradesh	49450	C4
Bihar	33954	C4



Sub sectors that contribute to 80% of GSDP of categories – C4

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

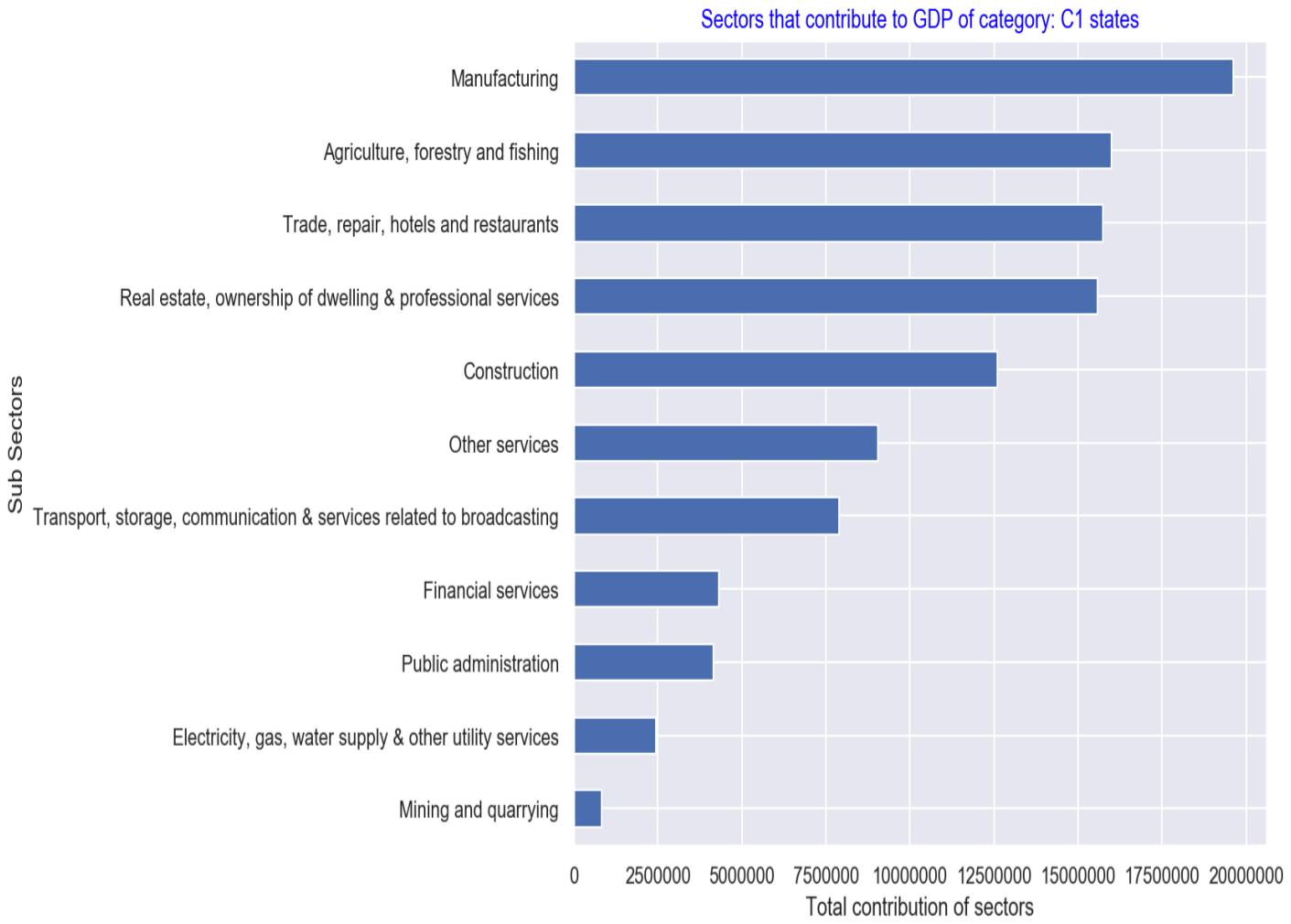
GDP Distribution of Categories – C1, C2, C3, C4



- States belonging to Category C2 (i.e. States between the 50th and the 85th percentiles of GDP per Capita) have higher GDP in comparison to states belonging to other categories

- States belonging to Category C1 (i.e. States between the 80th and the 100th percentiles of GDP per Capita) have lowest GDP in comparison to states belonging to other categories

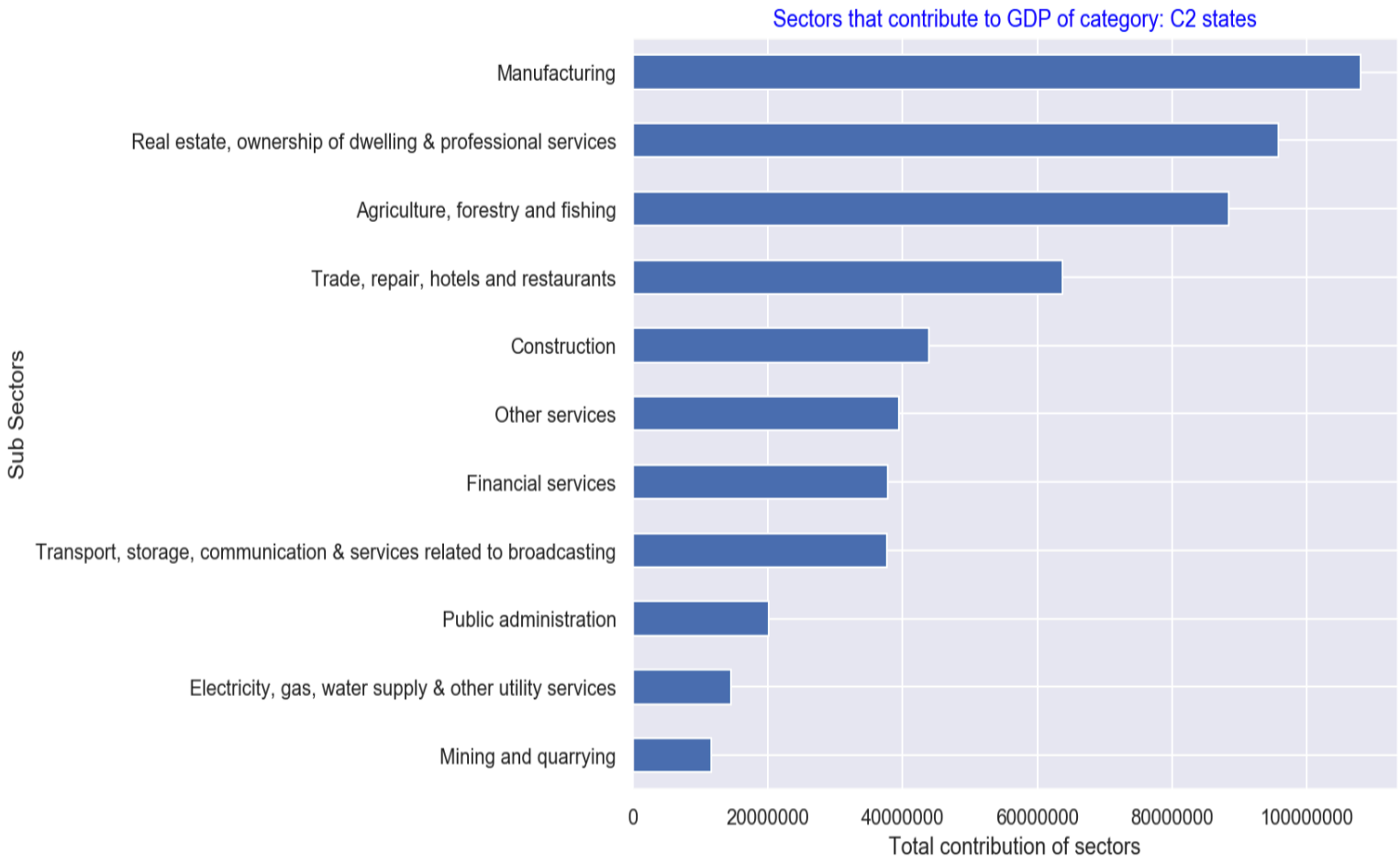
Sub Sector and category wise GDP correlation – Category C1



- Highly performing sectors are
  - Manufacturing
  - Agriculture, forestry and fishing
  - Trade, repair, hotels and restaurants
  - Real estate, ownership of dwelling & professional services
- Recommendation - States must keep on focusing on Manufacturing, Agriculture by bringing efficiency and automation, Real Estate and Hotels, Restaurant to increase GDP growth

- Low performing sectors are
  - Mining and quarrying
  - Electricity, gas, water supply & other utility services
  - Public Administration
- Recommendation - Government must focus on improving these sectors so that these sectors also start contributing more towards the growth of State GDP

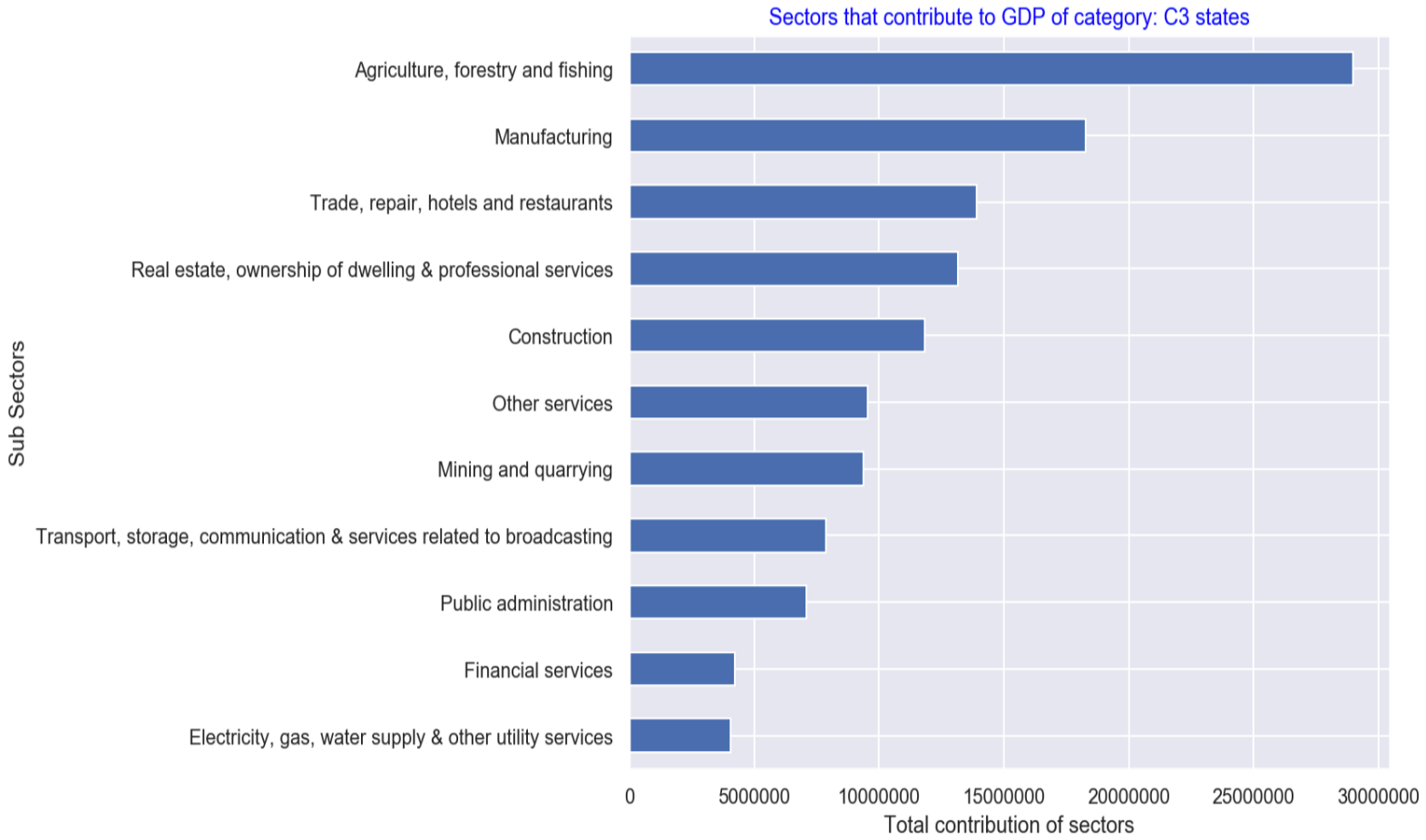
Sub Sector and category wise GDP correlation – Category C2



- Highly performing sectors are
  - Manufacturing
  - Real estate, ownership of dwelling & professional services
  - Agriculture, forestry and fishing
  - Trade, repair, hotels and restaurants
- Recommendation - State must keep on focusing Manufacturing (bring skilled labor and automation) and Real Estate for category C2 states to increase state GDP

- Low performing sectors are
  - Mining and quarrying
  - Electricity, gas, water supply & other utility services
- Recommendation - Government must focus on improving these sectors so that these sectors also start contributing more towards the growth of State GDP

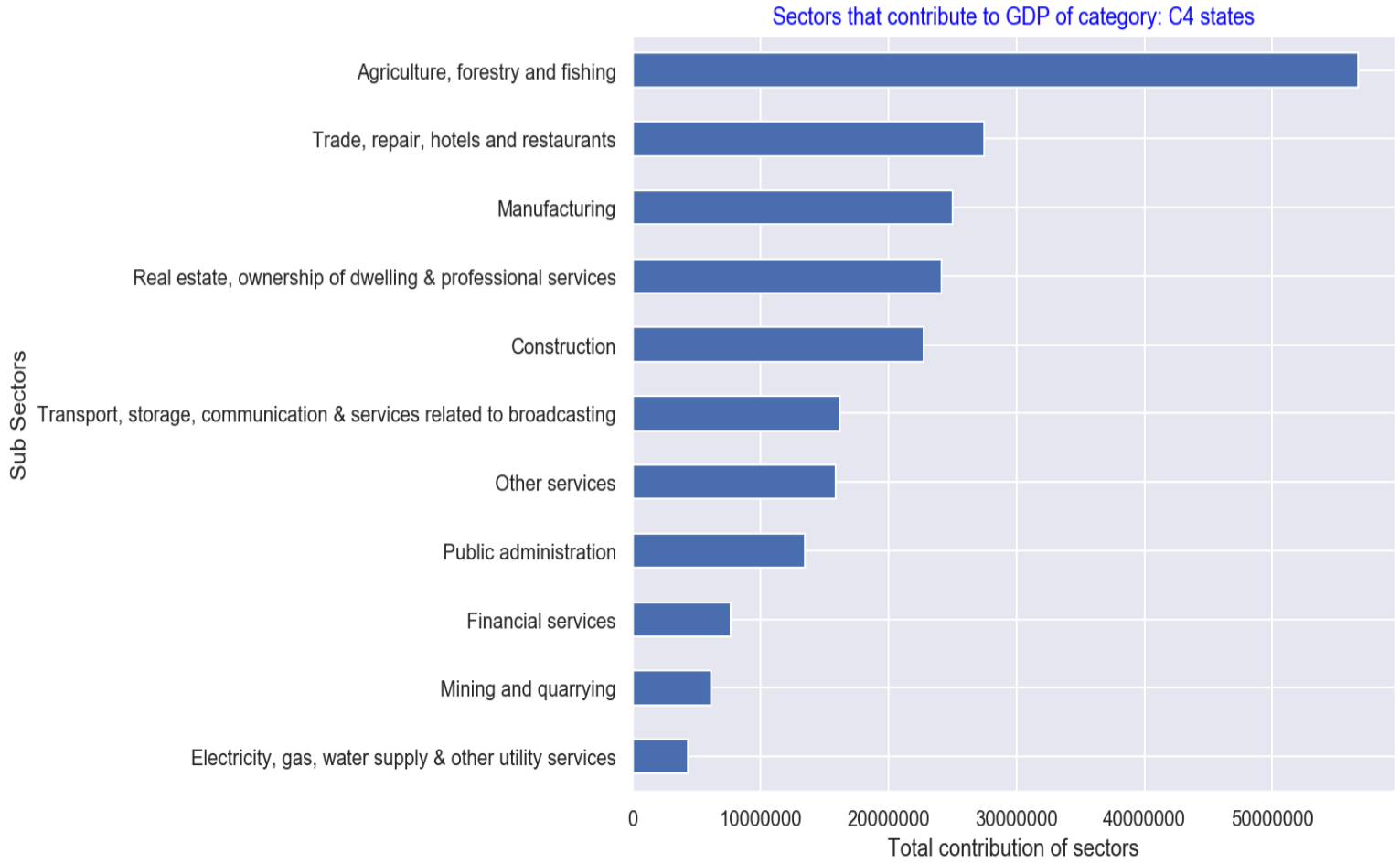
Sub Sector and category wise GDP correlation – Category C3



- Highly performing sectors are
  - Agriculture, forestry and fishing
  - Manufacturing
  - Trade, repair, hotels and restaurants
- Recommendation - Agriculture, forestry and fishing is the major contributing sector towards state GDP for category C3 states. Government must keep on focusing Agriculture to further increase it contribution towards State GDP

- Low performing sectors are
  - Electricity, gas, water supply & other utility services
  - Financial Services
- Recommendation - Government must focus on Financial Services and also improving Utility Services sector so that these sectors can contribute more towards state GDP

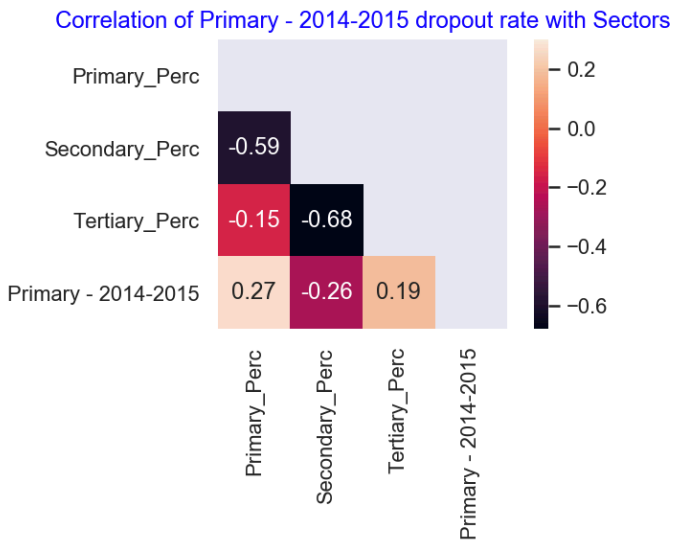
Sub Sector and category wise GDP correlation – Category C4

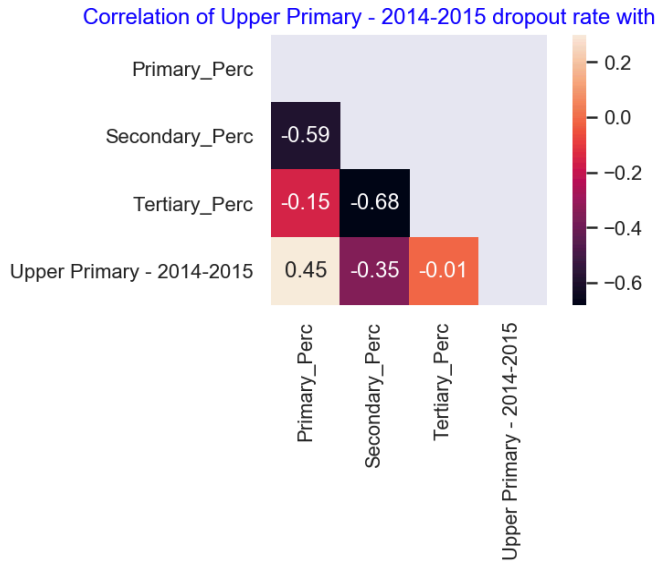


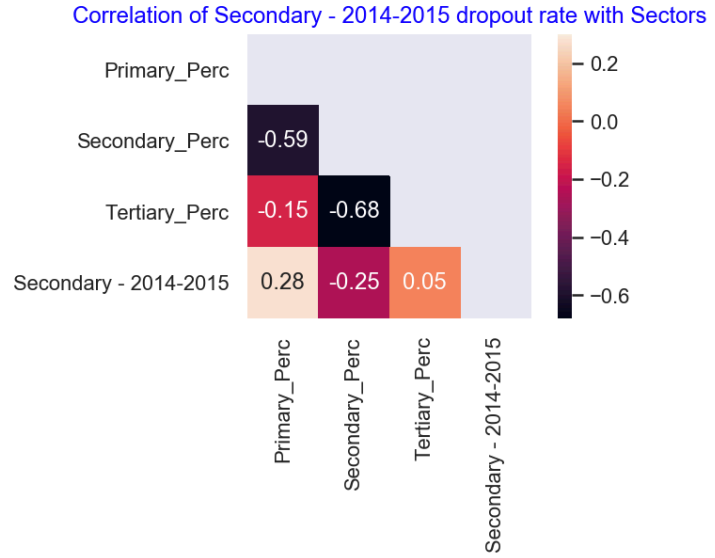
- Highly performing sectors are
  - Agriculture, forestry and fishing
  - Trade, repair, hotels and restaurants
  - Manufacturing
  - Real estate, ownership of dwelling & professional services
- Recommendation - Government must keep on focusing Agriculture and bring measures and incentive to boost manufacturing to increase State GDP

- Low performing sectors are
  - Electricity, gas, water supply & other utility services
  - Mining and quarrying
- Recommendation - Government must focus on Utility and services sector and mining and quarrying sector to increase State GDP

Correlation between Education dropout rate and %Contribution of each Sector

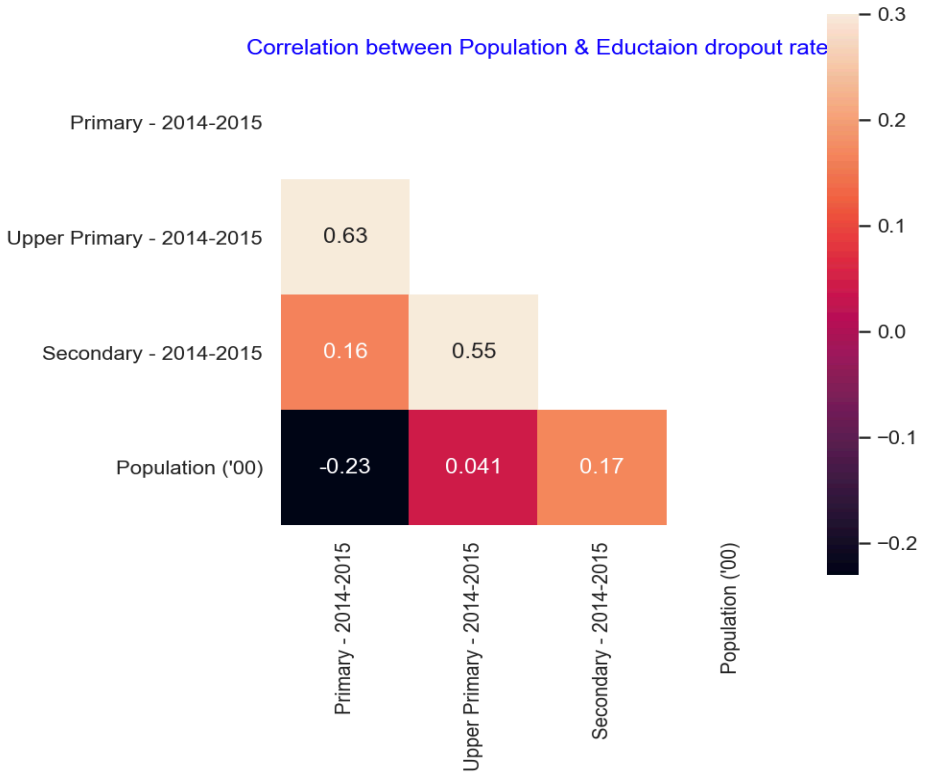






- Dropout rate of Primary education level is negative correlated(-0.26) with Secondary Sector %contribution. GDP of such states will decrease given the skilled and educated labor required for secondary sector is not easily available and thus doesn't encourage industries to be setup. However there is positive correlation (0.27) with Primary Sector %contribution. Given primary sectors rely on unskilled labor, a drop in primary schools creates a large labor pool helping primary sector and thus contribution to GDP growth.
- Dropout rate of Upper Primary education level is negative correlated(-0.35) with Secondary Sector %contribution. There is also a small negative correlation(-0.01) with Tertiary Sector %Contribution. This means with increase in dropout rate in Upper Primary education level, States with major contribution from Secondary Sectors will get affected. GDP of such states will decrease. However there is positive correlation (0.45) with Primary Sector %contribution as per reason explained above.
- Dropout rate of Upper Secondary education level is negative correlated(-0.25) with Secondary Sector %contribution. This means with increase in dropout rate in Secondary education level, States with major contribution from Secondary Sectors will get affected. GDP of such states will decrease. However there is positive correlation (0.28) with Primary Sector %contribution. This means with increase in dropout rate in Secondary education level, States with major contribution from Primary Sectors will see increase in GDP

Correlation between education dropout rate and population



- Increase in population results in decrease (-0.23) in Primary dropout rate
- Increase in population results in increase (0.17) in Secondary dropout rate
- Increase in population results in small increase (0.041) in Upper Primary dropout rate

- Increase in dropout rate negatively affects Secondary sector and thereby GDP of states with major %contribution from secondary sector
- If the population increases, Secondary dropout rate also increases
- Per Capita decreases with increase in dropout rate
- Government must bring in measures to control dropout rate which will help in increase in GDP of states