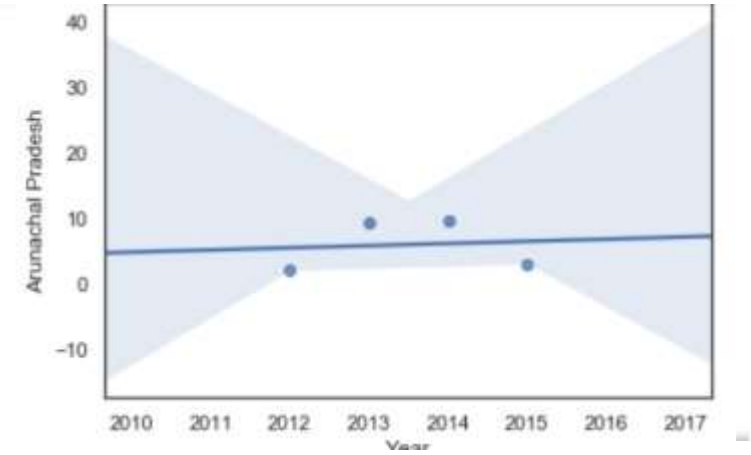
GDP assignment

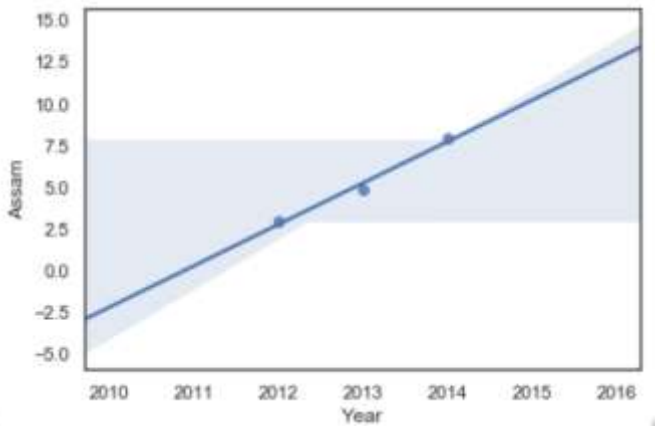
Ramya Chavali

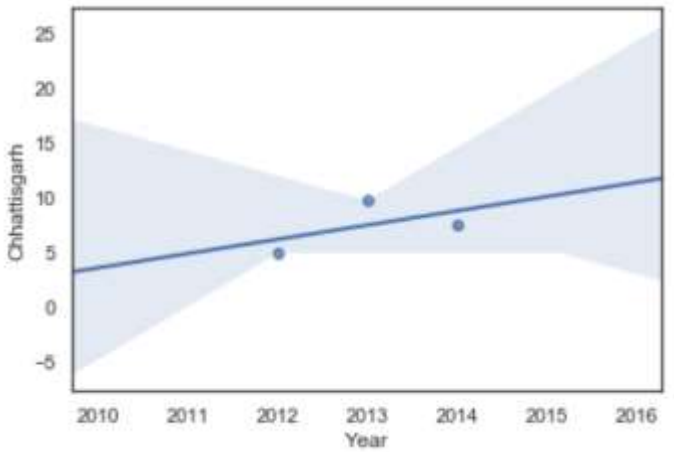
ramya10chavali@gmail.com

Part1a

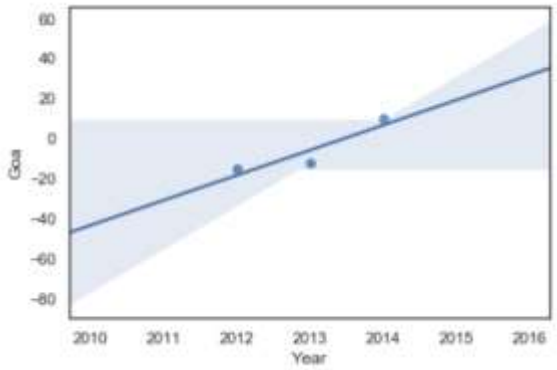
- Gathered the data then uploaded the data to python notebook
- Then removed the 11th row as there is no values in that line
- Then removed the year 2016 -2017 as There are 25 and 23 for both GDP and GDP growth rate form the total 34 states and union territories so there is not adding some values to it where we can't predict the GDP and data is also less so the values includes that we add can affect the actual data
- Then extract the GDP growth rate and removed the union territories(only asked for the States) and the West Bengal(null values)
- Ploted the Reg plot for each state and so that we could draw the best fit for each over the years

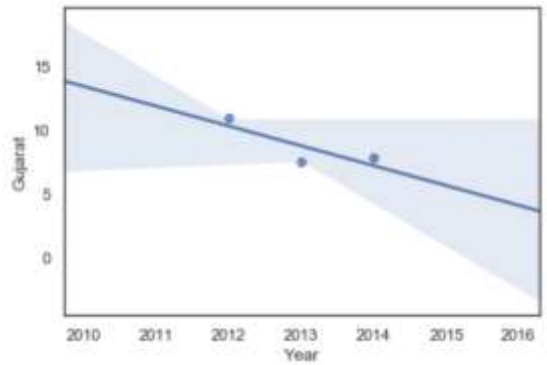


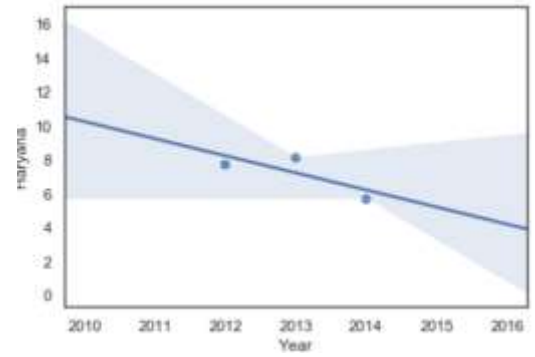


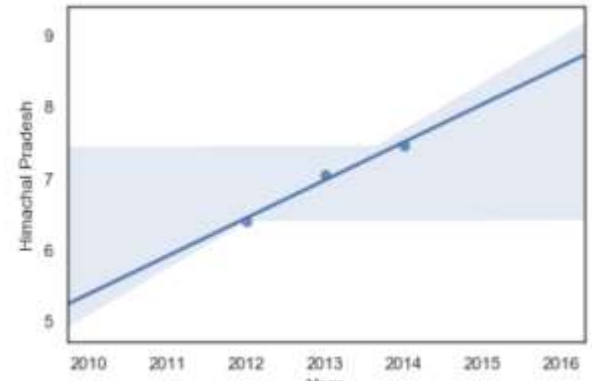


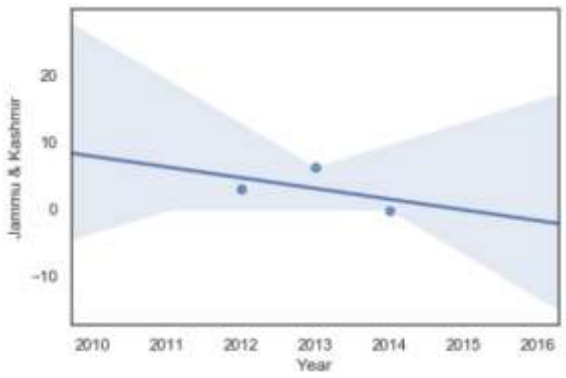
The regplots of different states

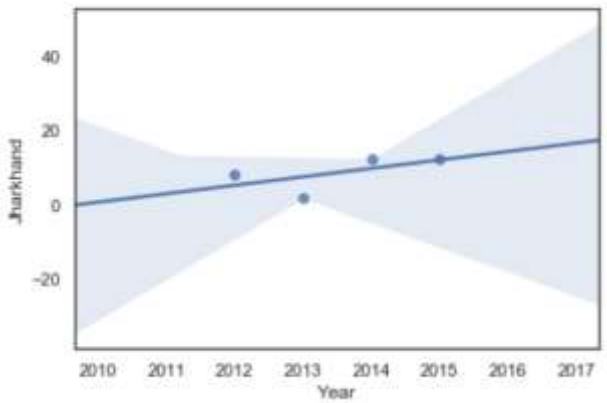


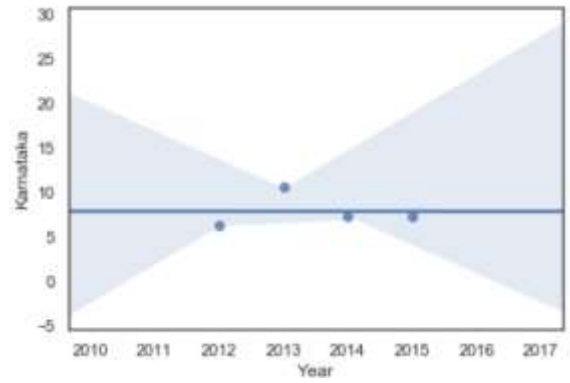


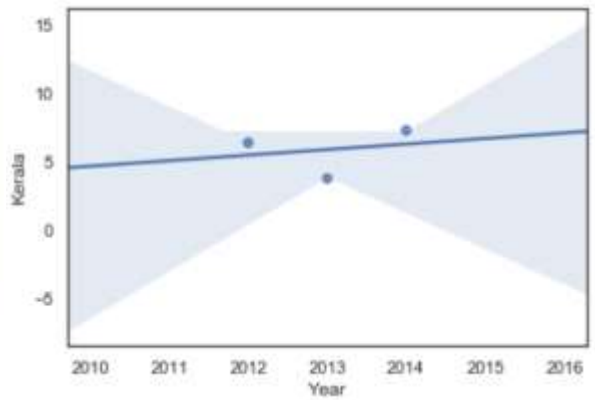


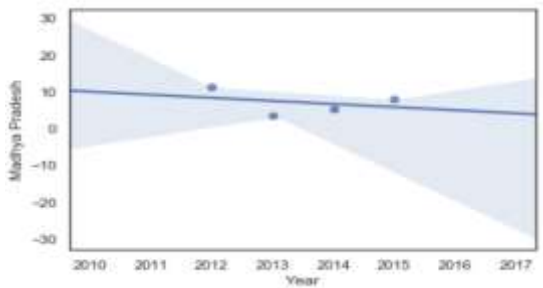


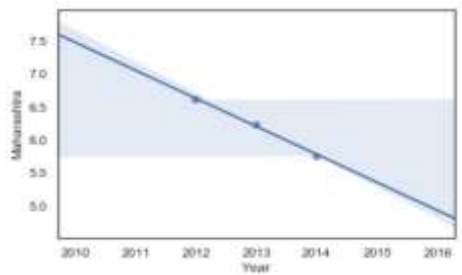


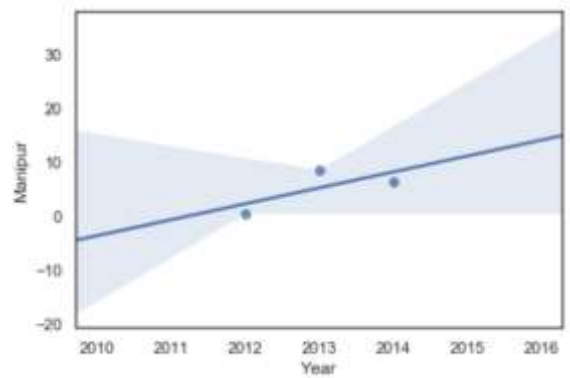


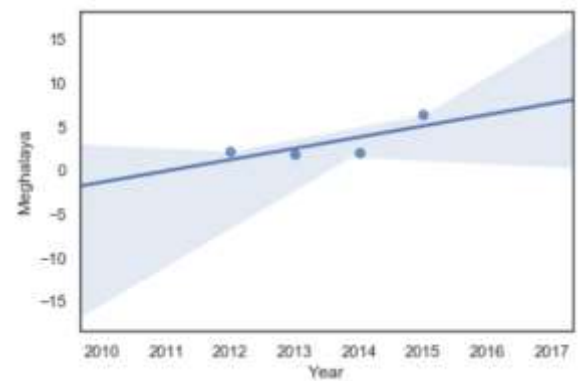












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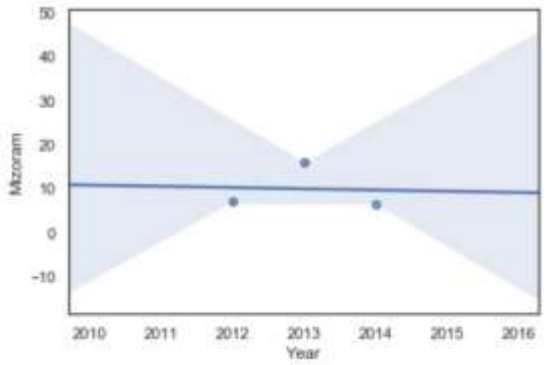
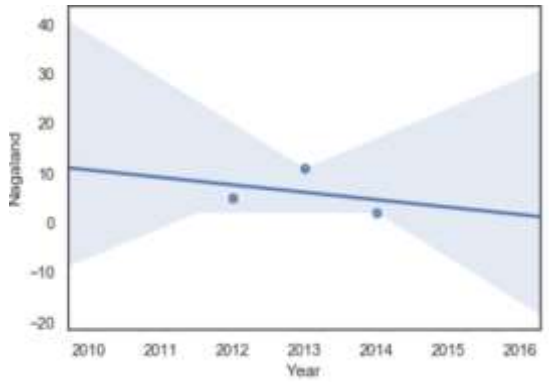
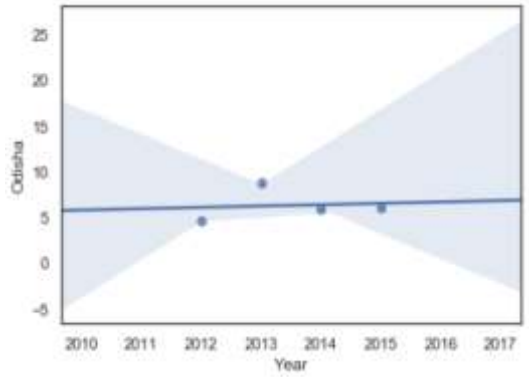
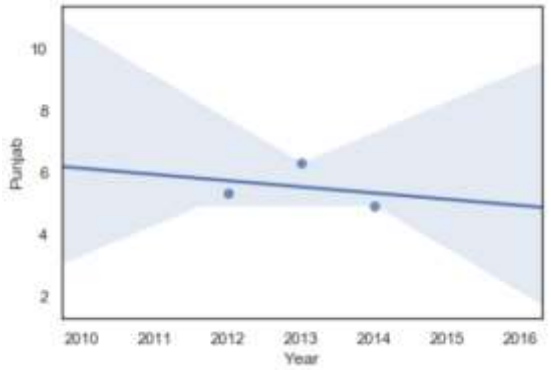
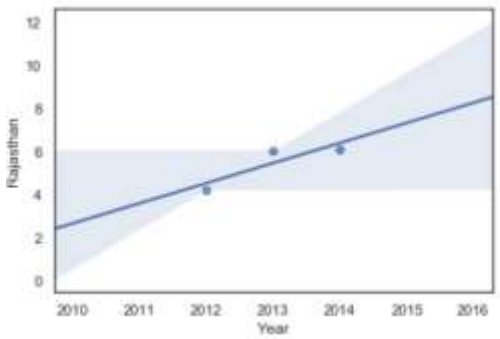
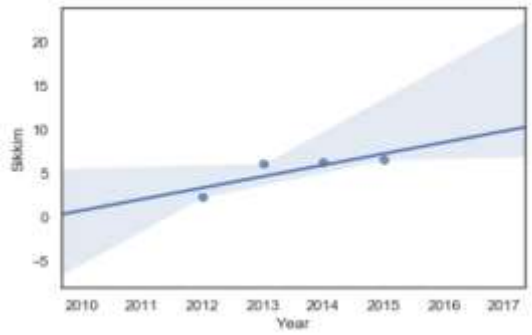


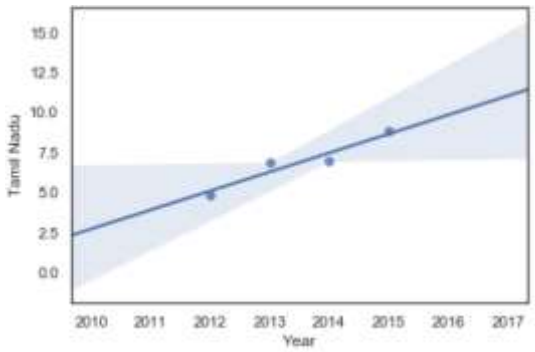


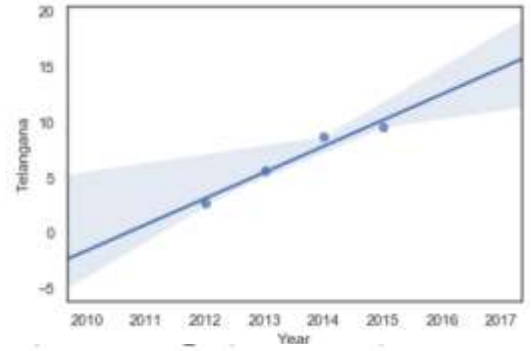


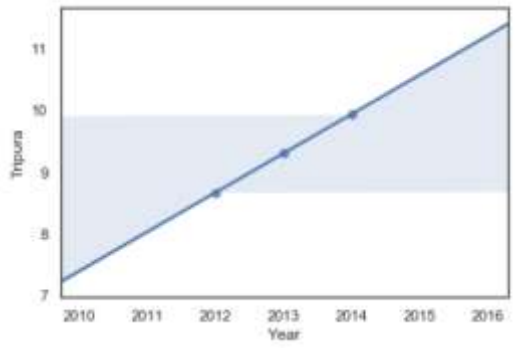


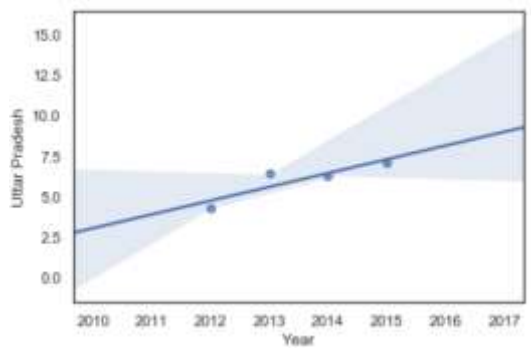


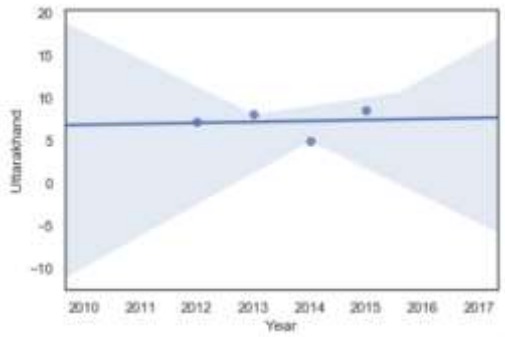


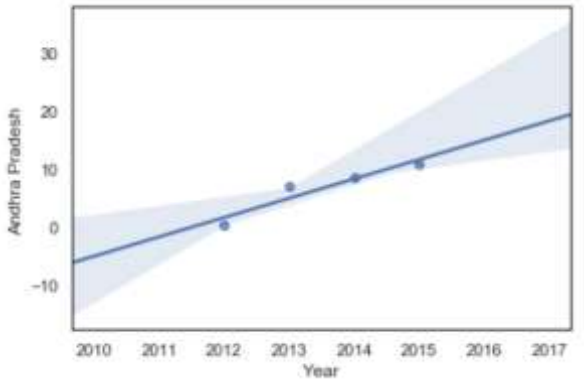






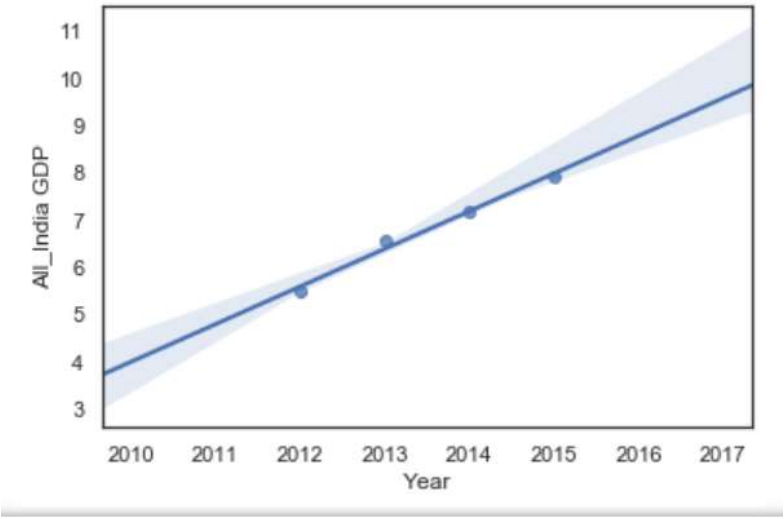


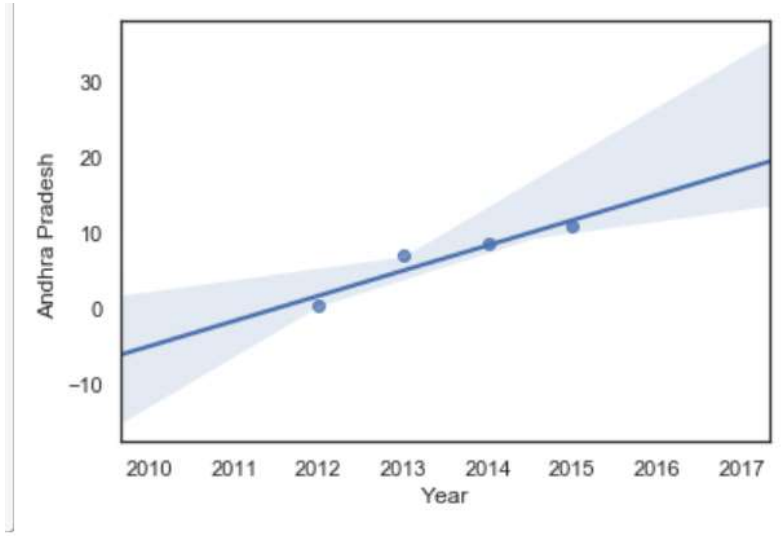




Regplot

- Have plotted regplot for all states
- The states that shows highest growth from the plots are Assam, Himachal Pradesh, Tripura and Telangana
- And slowest or the decrease in GDP% over years are Maharashtra, Gujarat, and Haryana
- The GDP% over all states is growing constantly
- Andhra is my home state is which is growing similar to the National rate and the average of both my





Home state and the National Rate is similar

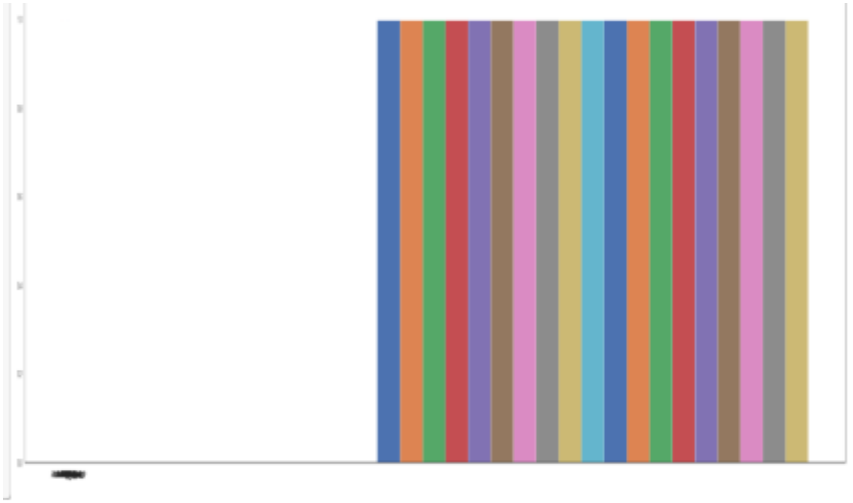
Average Growth Rate

Duration	2012-13	2013-14	2014-15	2015-16	mean
Goa	-15.38	-11.94	9.64	NaN	-5.893333
Jammu & Kashmir	2.89	6.23	-0.31	NaN	2.936667
Meghalaya	2.19	1.83	2.06	6.41	3.122500
Assam	2.91	4.88	7.88	NaN	5.223333
Manipur	0.54	8.71	6.48	NaN	5.243333
Sikkim	2.29	6.07	6.34	6.51	5.302500
Rajasthan	4.24	6.07	6.11	NaN	5.473333
Punjab	5.32	6.32	4.92	NaN	5.520000
Kerala	6.5	3.89	7.31	NaN	5.900000
Uttar Pradesh	4.26	6.4	6.3	7.13	6.022500
Arunachal Pradesh	2.14	9.29	9.66	3.12	6.052500
Nagaland	5.09	11.13	2.09	NaN	6.103333
Maharashtra	6.61	6.24	5.76	NaN	6.203333
Odisha	4.61	8.73	6	6.01	6.337500
Telangana	2.74	5.58	8.74	9.53	6.647500
Andhra Pradesh	0.32	6.96	8.51	10.96	6.687500
All_India GDP	5.48	6.54	7.18	7.93	6.782500
Tamil Nadu	4.85	6.89	6.94	8.79	6.867500
Himachal Pradesh	6.41	7.06	7.47	NaN	6.980000
Madhya Pradesh	11.38	3.62	5.44	7.97	7.102500
Haryana	7.74	8.18	5.72	NaN	7.213333
Bihar	3.93	4.98	13.02	7.14	7.267500
Uttarakhand	7.24	8.23	5	8.7	7.292500
Chhattisgarh	4.97	9.82	7.57	NaN	7.453333
Karnataka	6.2	10.51	7.29	7.27	7.817500
Jharkhand	8.17	1.57	12.47	12.14	8.587500
Gujarat	10.89	7.56	7.8	NaN	8.750000
Tripura	8.67	9.32	9.94	NaN	9.310000
Tripura	8.67	9.32	9.94	NaN	9.310000
Mizoram	7.15	16.21	6.59	NaN	9.983333
Year	2012	2013	2014	2015	2013.500000

Comparision with the home state and National

Andhra Pradesh	0.32	6.96	8.51	10.96	6.687500
All_India GDP	5.48	6.54	7.18	7.93	6.782500

- Andhra is my home state is which is growing similar to the National rate and the average of both is very near so the growth rate is similar even from the average
- According to the mean the fastest growing states are Mizoram, Tripura, and Gujarat
- And the slowest growing states are Goa, Jammu and Kashmir and Meghalaya
- There few states with similar mean like Assam, Manipur, Sikkim and Rajasthan
- Goa and Mizoram have vast difference in GDP rate
- Andhra and Tamil nadu have a similar GDP to national GDP
- The average GDP Growth rate lies from -589 to 9.98
- Only Goa has a Average GSDP rate in Negative



Total GDP of the states for the year 2015-16

- The GDP for year 2015-16 is from 13722 to 979816
- The Bar plot would be the Best to display the variation in the GDP for each state
- The top five states based on **total** GDP are

1. Tamil Nadu 979816
2. Uttar Pradesh 914748
3. Gujarat 864314
4. Karnataka 815545
5. Andhra Pradesh 490134

- Similarly the Bottom states based on **total** GDP are :

1. Sikkim 13722
2. Arunachal Pradesh 13963
3. Meghalaya 22507
4. Goa 37520
5. Jammu & Kashmir 95965

- The Government should work on the improvement on the GSDP of the bottom states as it is comparatively very low
- The Ratio of the state with Highest GDP to the lowest GDP is 71.40475149395132
- Therefore there is a Lot of scope for the improvement

Part I-B:

- Gathered the data for the states and merged all of them together
- Filtered the Union territories
- Ploted the GDP per capita for all the
- states
- The top five states are
- Goa, Sikkim, Haryana, Kerla,
- Uttharakand
- The Bottom five states are
- Bihar,Uttar Pradesh,Manipur, Assam,
- Jharkhand
- The ratio of the Highest to the lowest is
- Goa/ Sikkim= 8.004741709371503

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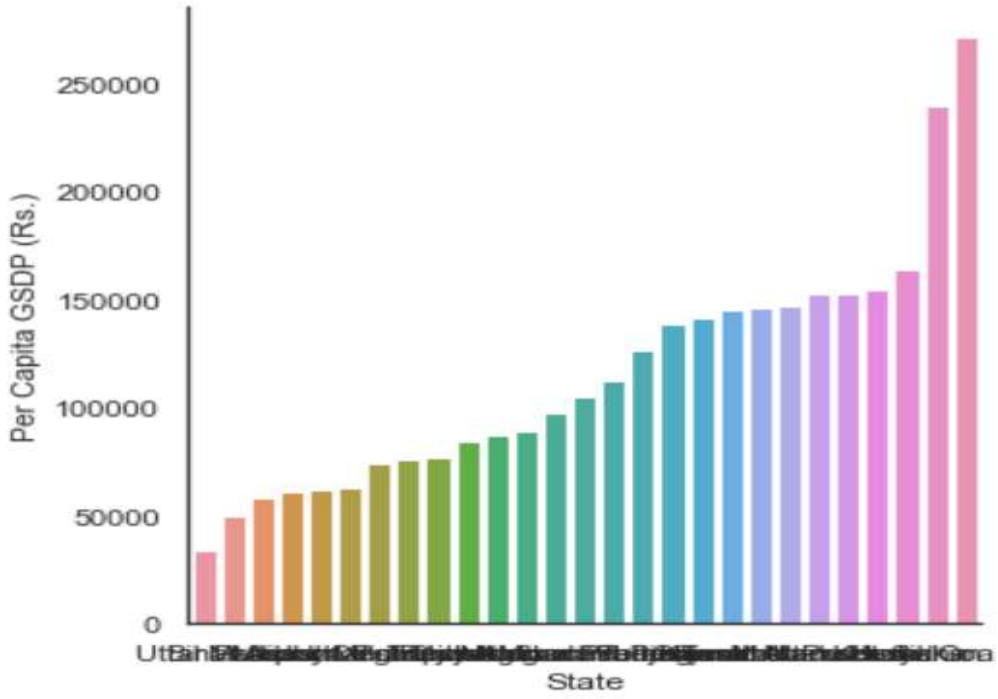

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Percentage contribution of Primary, Secondary and Tertiary

- Calculated the Percentage contribution for each Primary, Secondary and Tertiary Primary, Secondary and Tertiary with the Total GDP
- Plotted the individual and Plot all the sectors contribution together with the states
- The sum of all these sectors is not equal to Total GSDP of each State
- The GSDP = TOTAL GSVA at basic prices+ Taxes on Products - Subsidies on products
- Where the sum of sectors = TOTAL GSVA at basic prices
- The correlation of contribution of primary sector and the percentage rank of Per Capita GSDP

```
-0.6194694978393281
```

These both are negatively correlated

From the graph tertiary contributes more than the others

Plot of contribution %of all sectors with states

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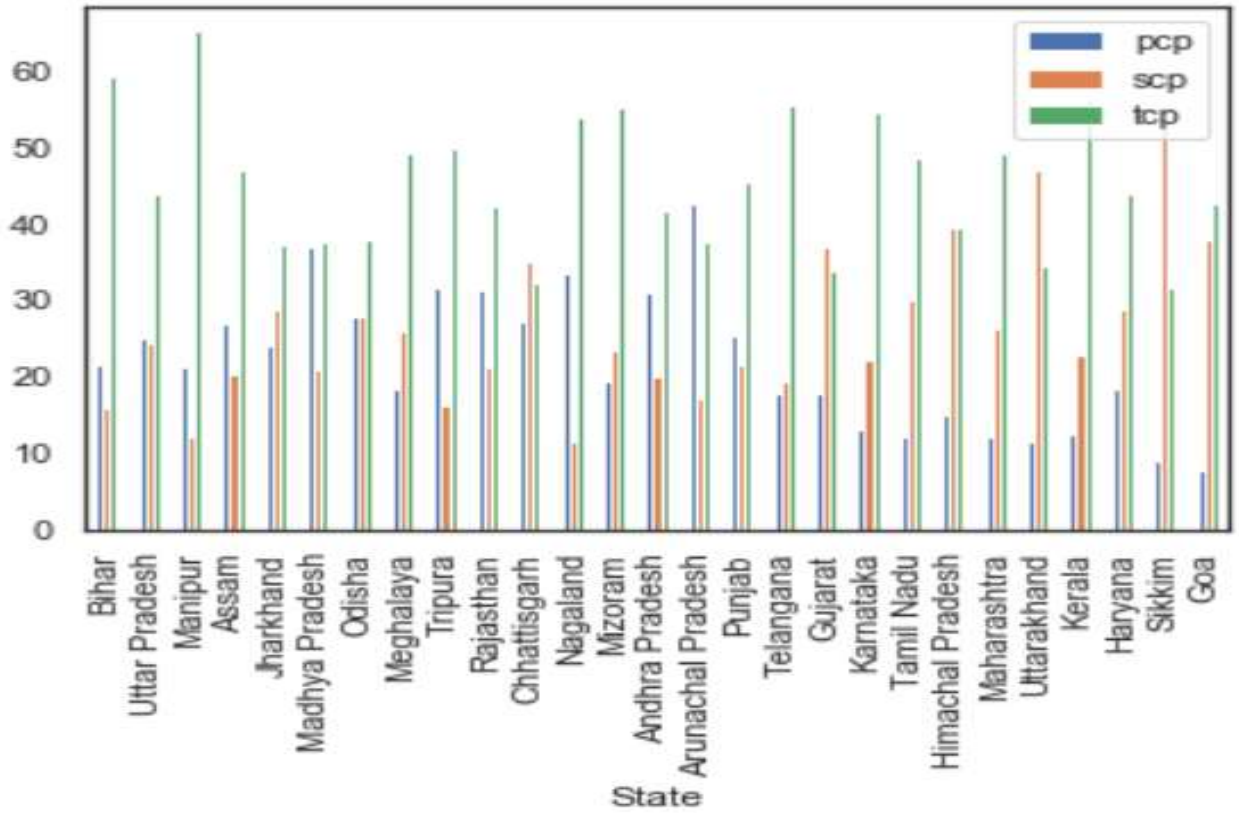
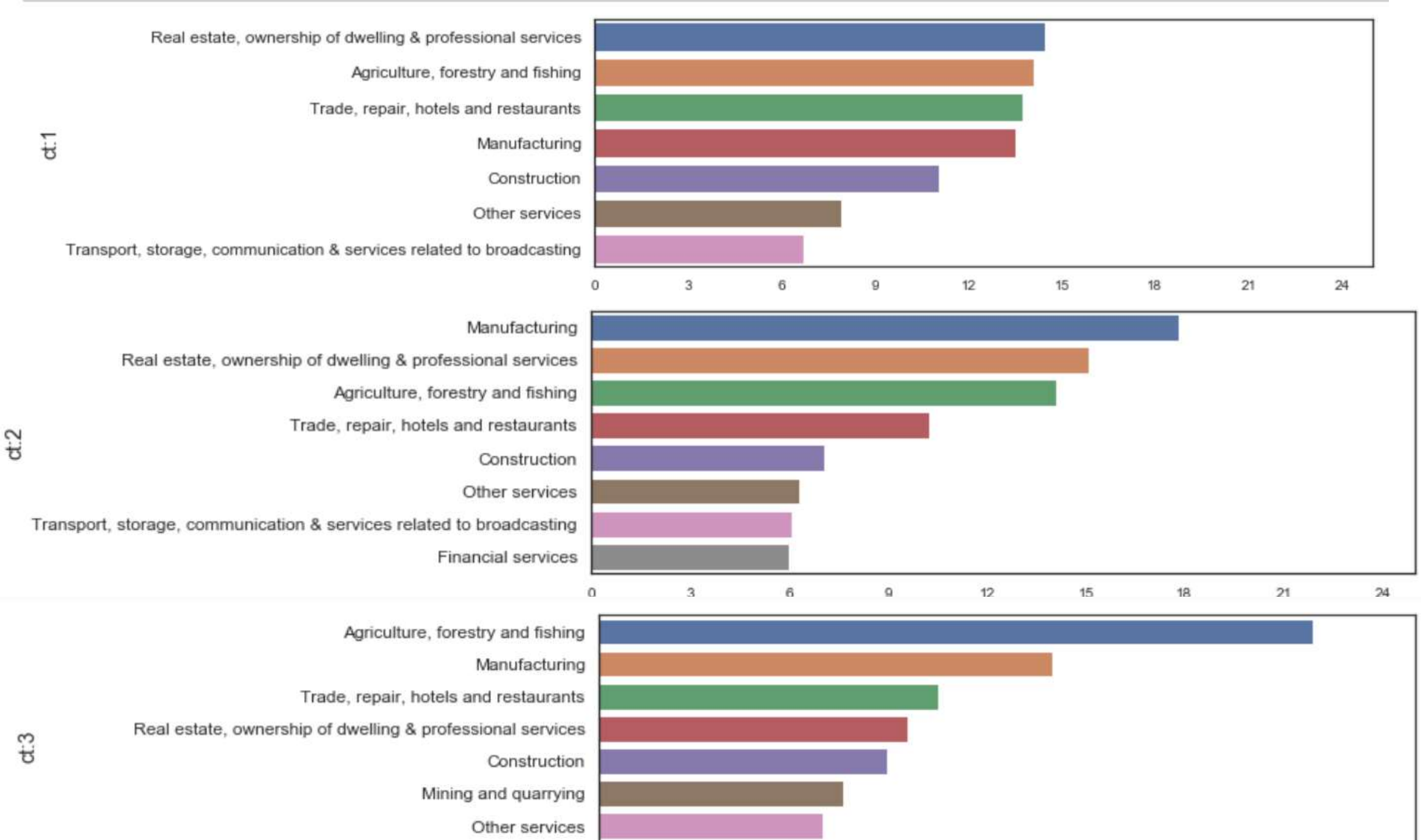


Categorized the sectors into C1,C2, C3, C4

- Categorized the sectors into C1,C2, C3, C4 based on per captia GSDP
- C1 states are Kerala, Haryana, Sikkim, Goa
- C2 states are Andhra Pradesh, Arunachal Pradesh, Punjab, Telangana, Gujarat, Karnataka, Tamil Nadu, Himachal Pradesh, Maharashtra, Uttarakhand
- C3 states are Odisha, Meghalaya, Tripura, Rajasthan, Chhattisgarh, Nagaland, Mizoram
- C4 states are Bihar, Uttar Pradesh, Manipur, Assam, Jharkhand, Madhya Pradesh


ct:1
Real estate, ownership of dwelling & professional services
Agriculture, forestry and fishing
Trade, repair, hotels and restaurants
Manufacturing
Construction
Other services
Transport, storage, communication & services related to broadcasting
0
3
6
9
12
15
18
21
24
ct:2
Manufacturing
Real estate, ownership of dwelling & professional services
Agriculture, forestry and fishing
Trade, repair, hotels and restaurants
Construction
Other services
Transport, storage, communication & services related to broadcasting
Financial services
0
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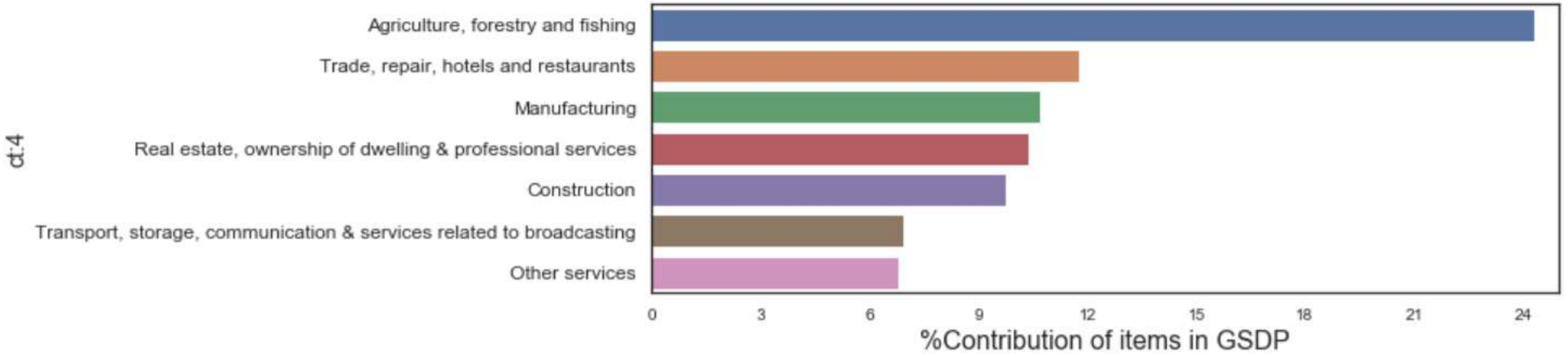
Agriculture, forestry and fishing
Manufacturing
Trade, repair, hotels and restaurants
Real estate, ownership of dwelling & professional services
Construction
Mining and quarrying
Other services



The c1 states have all the sectors almost equally distributed

Whereas for the other sectors they are mostly equally distributed

the Agriculture , forestry, and fishing have the highest correlation

The Other services and the Transport, storage, communication & services related to broadcasting

Needs the improvement with respect to GSDP as that is a common low in all the Categories

For the c4 states the Agriculture , forestry, and fishing is very high compared to others

PartII

- Downloaded and loaded the merged with the previous data of 1b for correlation
- formed correlation but there is no correlation with Per Capita GSDP and primary , upper primary secondary and senior secondary
- formed correlation but there is no correlation with %contribution of sectors to Total GSDPand primary , upper primary secondary and senior secondary
- There is highest correlation with Primary contribution percent and negative correlation with Secondary correlation percent and medium with Tertiary
- There is no correlation with population with to Total GSDP and primary , upper primary secondary and senior secondary
- For better Plot refer to the Jupiter notebook.
- The GSDP have a correlation with primary , upper primary secondary and senior secondary
- There is a constant increase in GSDP in few
- States very few states GSDP is decreasing
- primary , upper primary highly correlate
- secondary and senior secondary are

closed related