

GDP ANALYSIS CASE STUDY

SUBMISSION

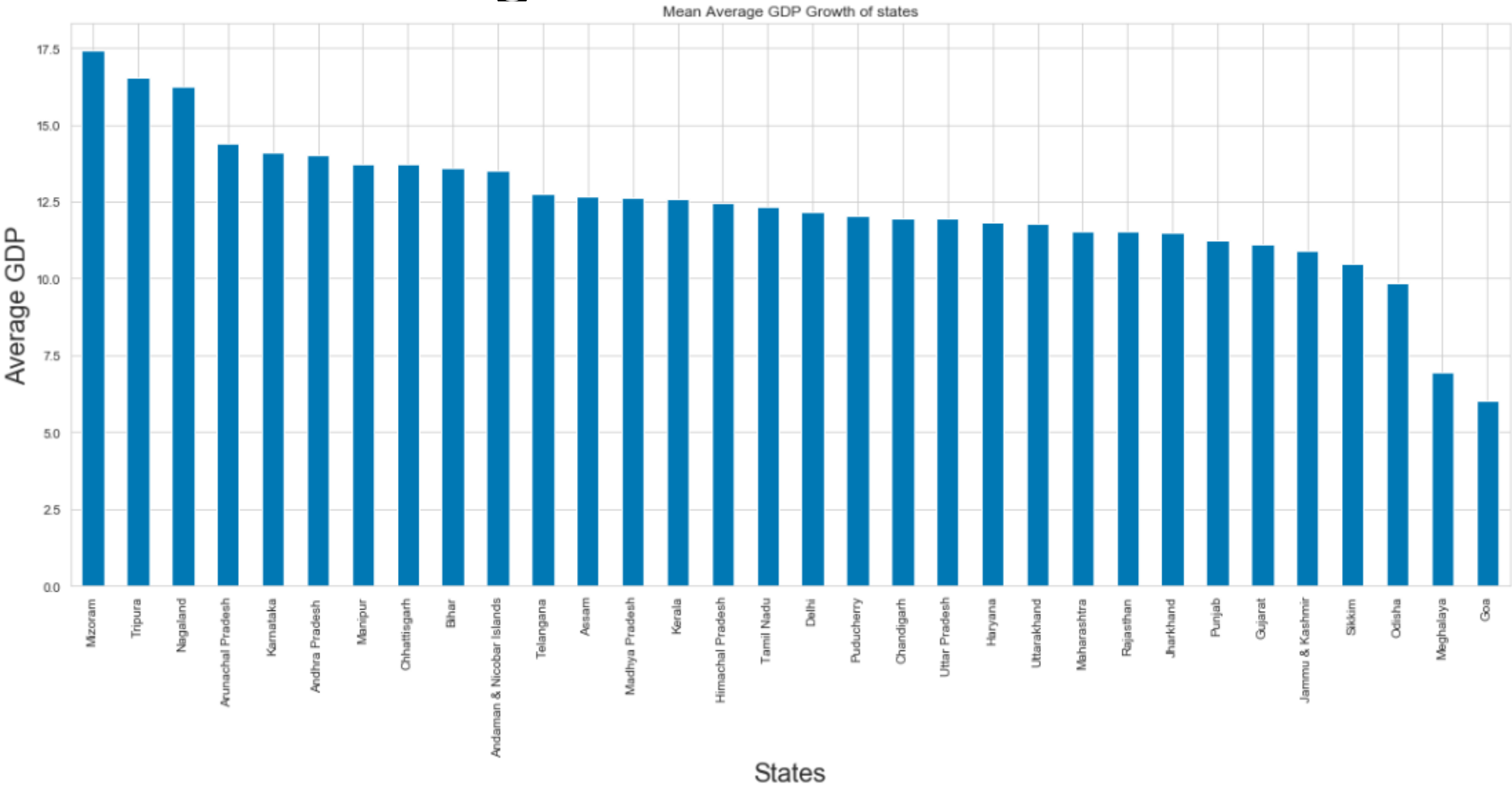
Business Objective

- Compare Mean average GDP growth, total and per capita GDP for the relevant states.
- Compare Percentage contribution of the primary, secondary and tertiary sectors as a percentage of GSDP for relevant the states.
- Compare GDP contributions by the sub-sectors, after dividing the states into categories on the basis of quantiles.
- Compare GDP per capita with dropout rates in education.
- Make appropriate realistic assumptions.

Data Cleaning and Assumptions

- Data1-A:
 - For Year 2015-16, I found that considerable number of the state's GDP value was missing and I had to analyze mean average GDP growth of states. So analyzing these state's GDP was equally important. So I have replaced those missing values with mean GDP of previous years.
- GDP and Education:
 - After reading the dataset, I found that there are 2 columns with same name - Primary - 2014-2015. I am assuming that second column with name Primary - 2014-2015 will solve our purpose as after analyzing file level data, I found that first column should be corresponding to year 2013-14.
 - States for which 2 or more dropout rates are missing, I have dropped those states, as I proceed while taking these values as 0, mean/median, It may not give the correct result for that state.

Mean Average GDP Growth of States



Consistently Fast Growing States are: Mizoram, Tripura, Nagaland, Arunachal Pradesh, Karnataka
Struggling States are: Jammu & Kashmir, Sikkim, Odisha, Meghalaya, Goa

Total GDP for States for Year 2015-16

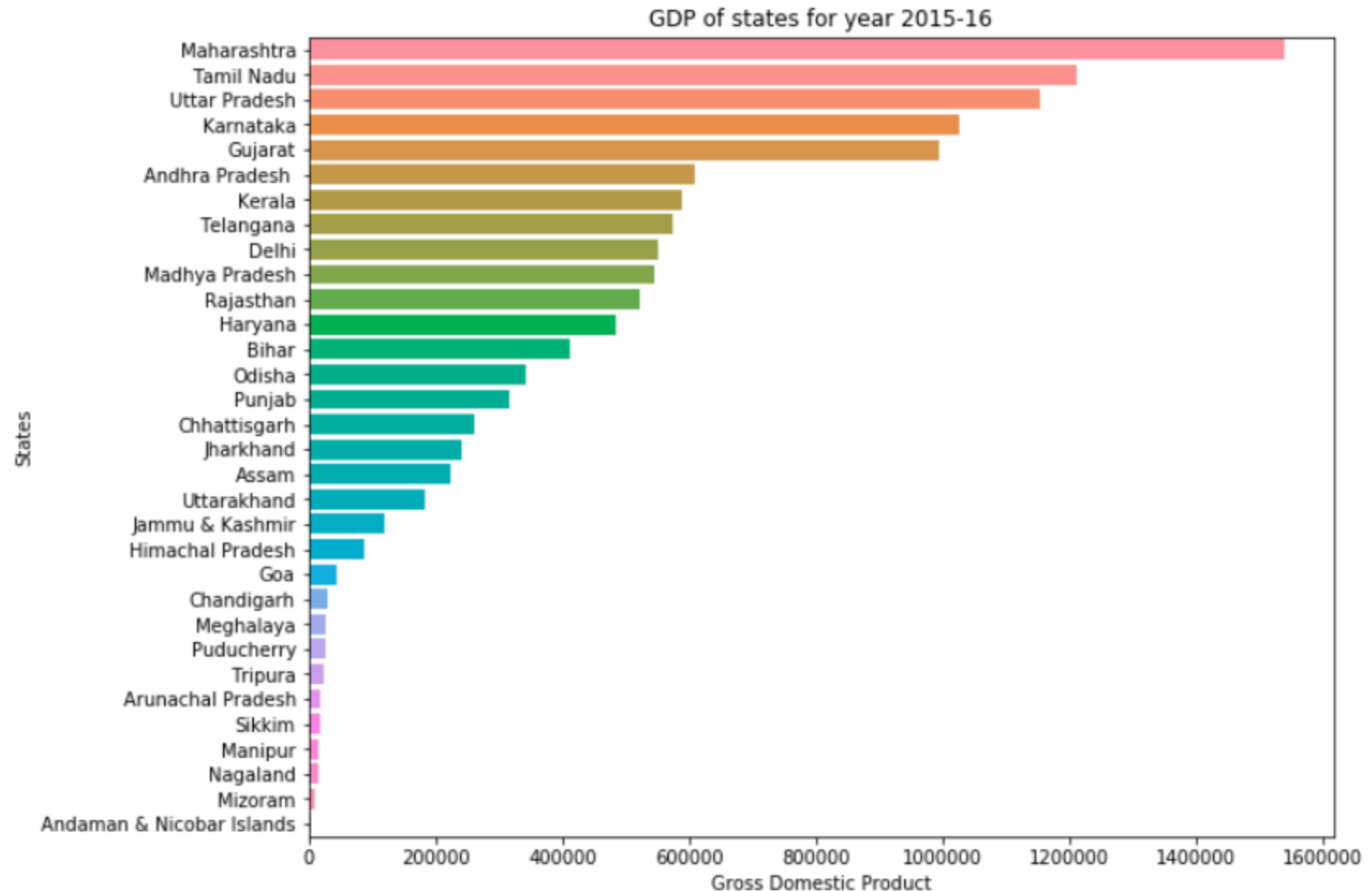
Here, I found that
On the basis of total GDP,

- Top 5 states are :

Maharashtra,
Tamil Nadu,
Uttar Pradesh,
Karnataka,
Gujarat

And Bottom 5 states are:

Sikkim,
Manipur,
Nagaland,
Mizoram,
Andaman & Nicobar Islands



Per Capita GDP for States

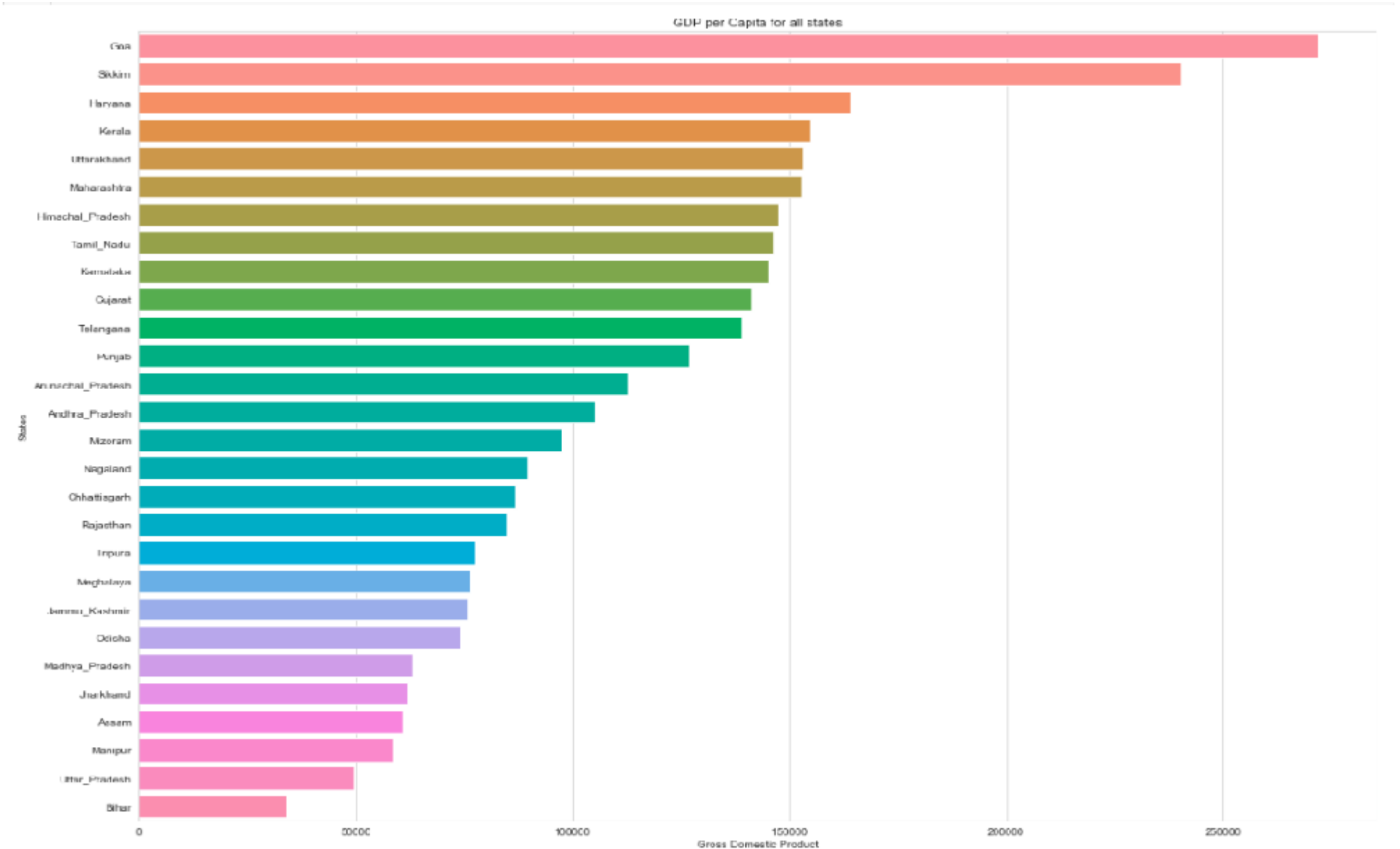
On the basis of Per Capita GDP,

Top5 states are:

Goa,
Sikkim,
Haryana,
Kerala,
Uttarakhand

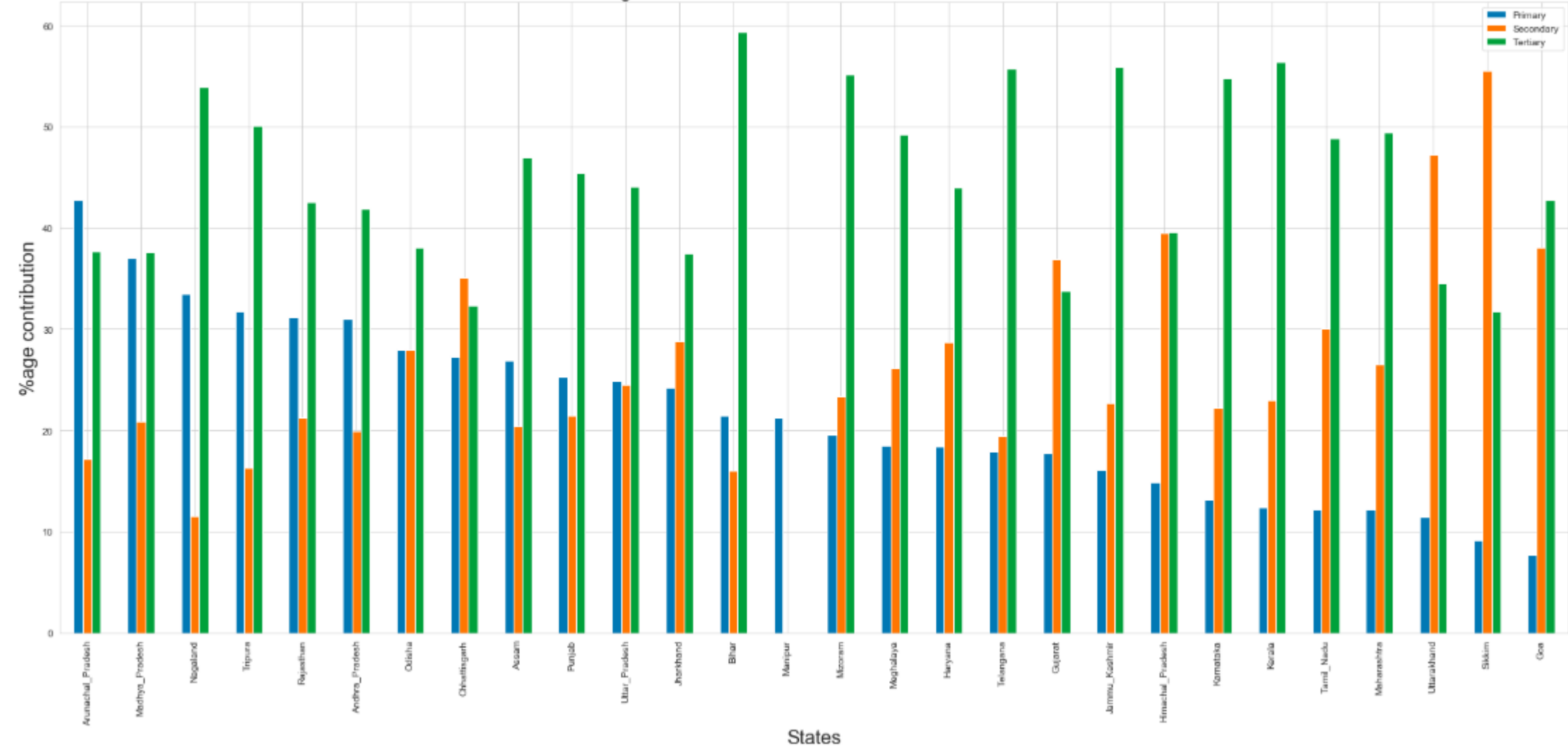
Bottom5 states are:

Bihar,
Uttar Pradesh,
Manipur,
Assam,
Jharkhand



Percentage Contribution of each sector for different States

Percentage Contribution of different sectors for each state GDP



I found that Tertiary sector is a major contributor for almost all of the state's GDP.

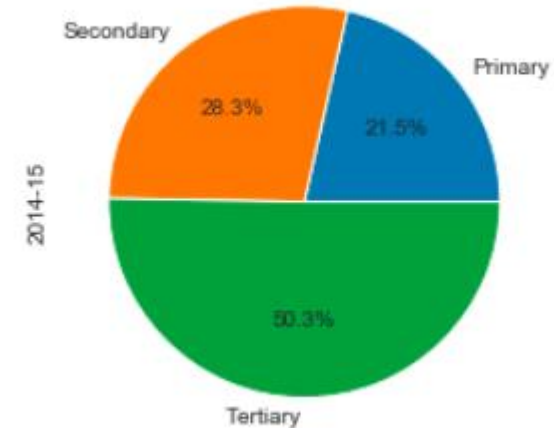
Each Sector Contribution to Overall GDP for Year 2014-15

When we see each sector's contribution towards overall GDP for Year 2014-15,
It shows that Tertiary sector is the major contributor and total contribution is almost double the contribution of any other sector.

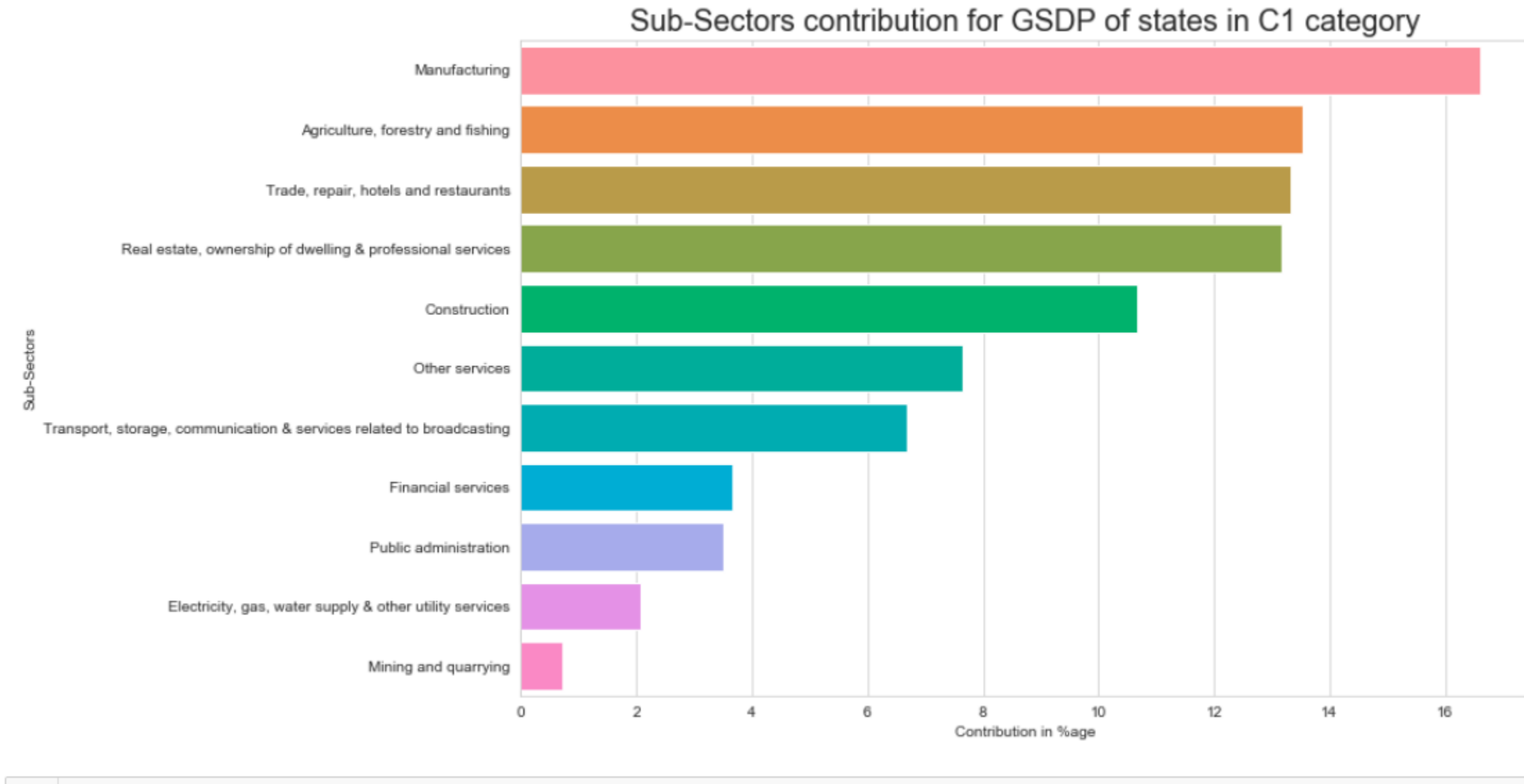
It also implies that the states which are investing more towards tertiary sector than any other sector, are earning more GDP.

On the other side, Primary sector is contributing less towards overall GDP that is only 21.5%
And secondary sector is contributing only 28.3% towards overall GDP.

Each Sector contribution to overall GDP

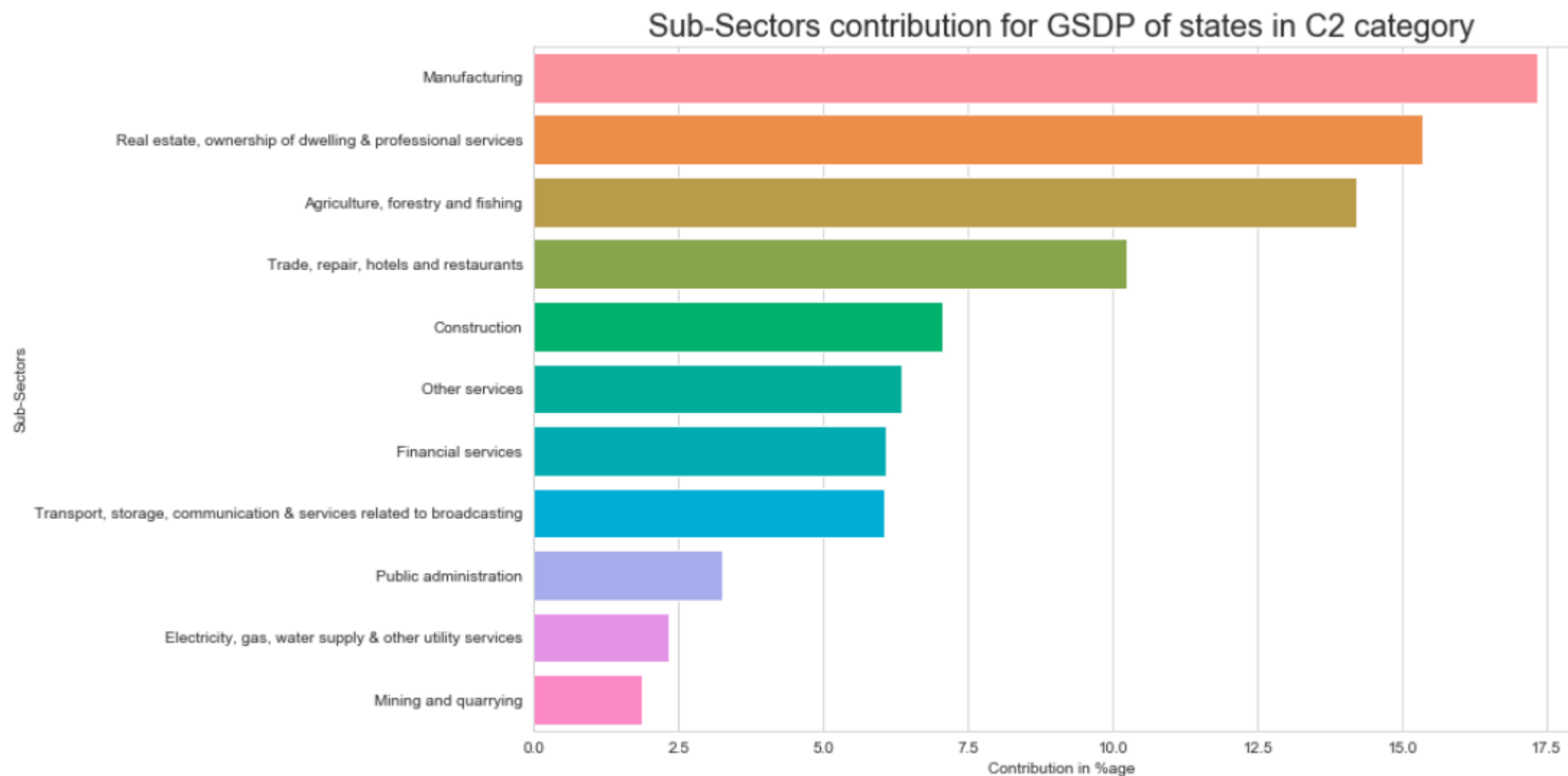


Sub-Sectors Contribution for States in C1 Category

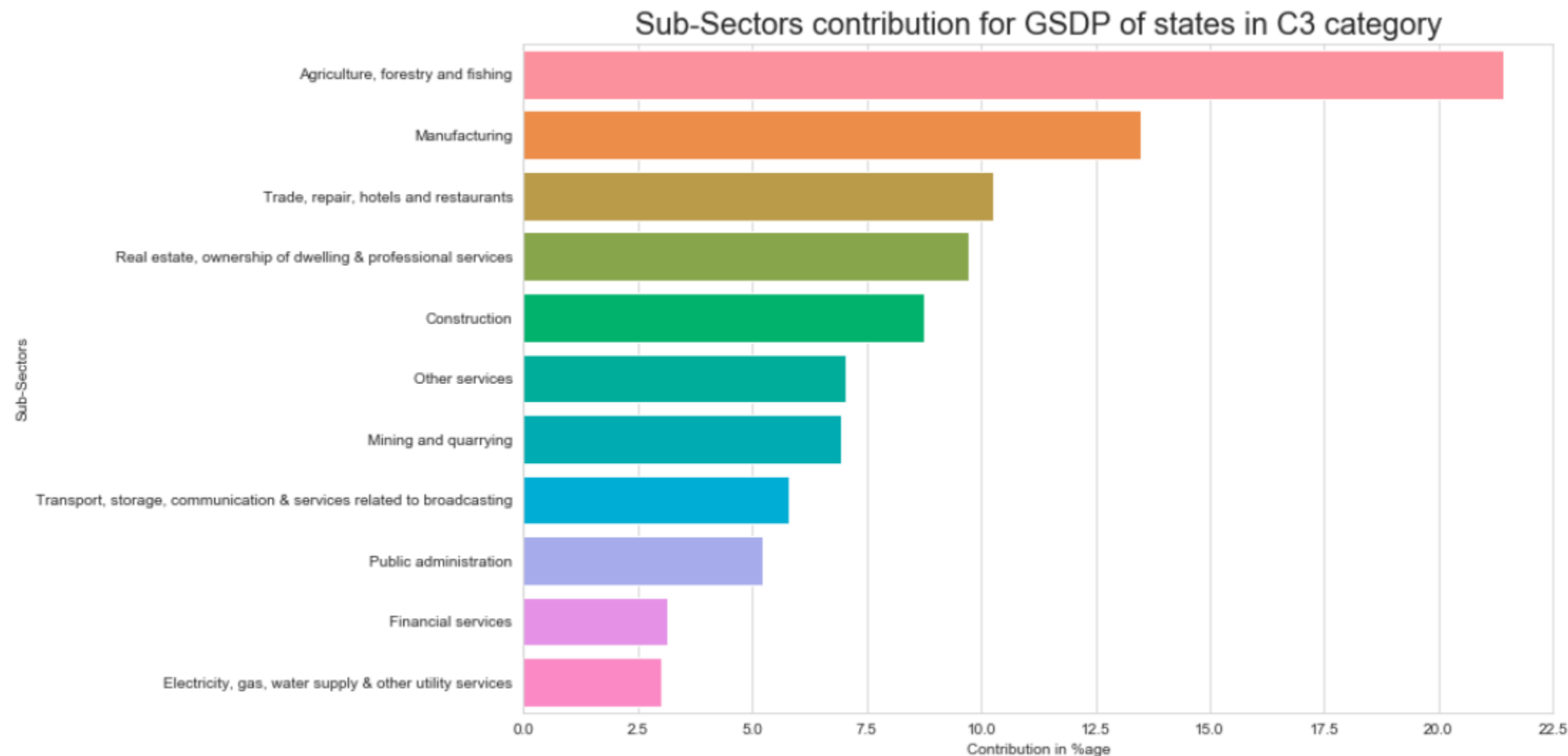


Here we see that states which are contributing more in Tertiary sector, are having more per capita GDP

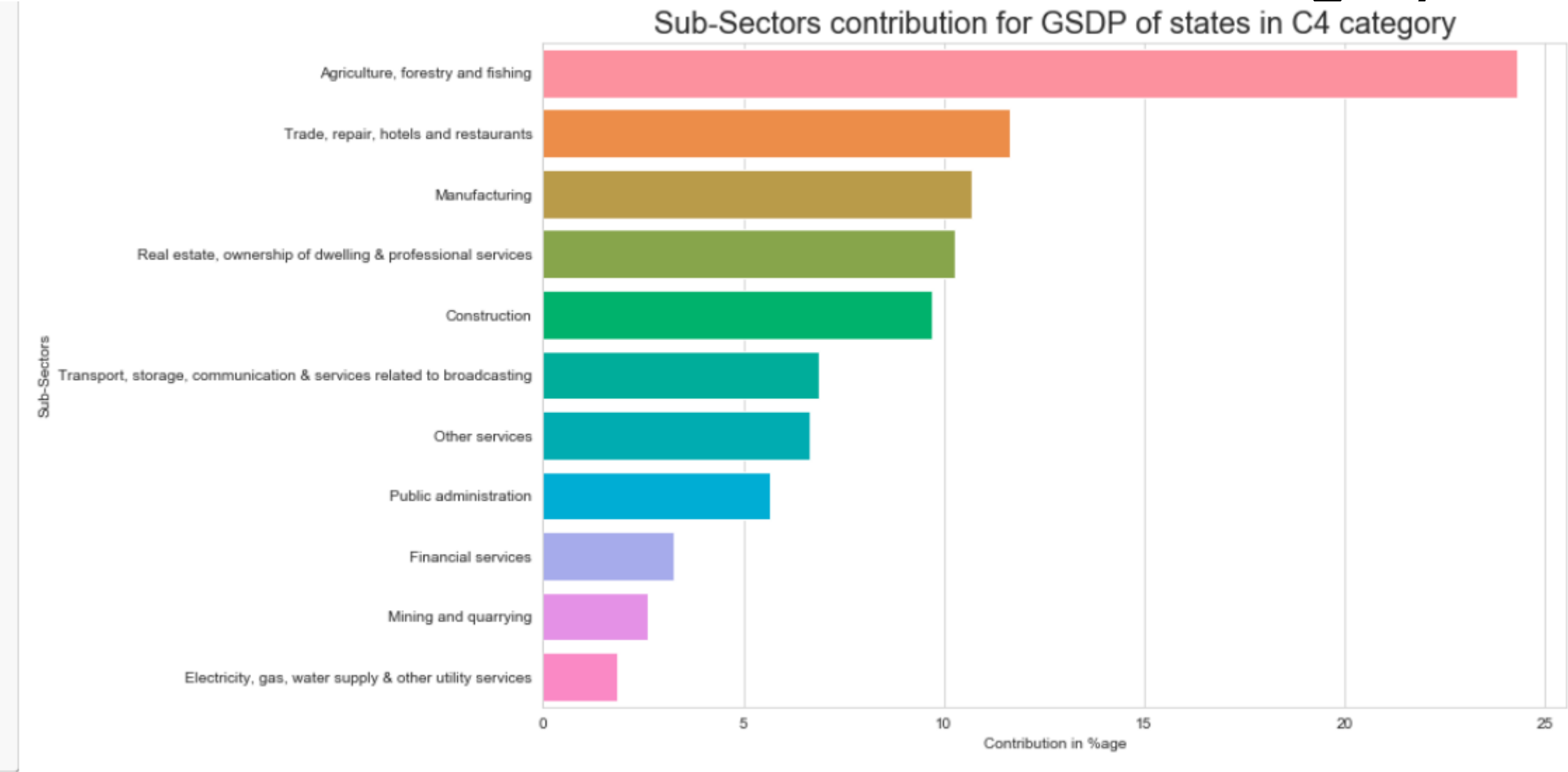
Sub-Sectors Contribution for States in C2 Category



Sub-Sectors Contribution for States in C3 Category



Sub-Sectors Contribution for States in C4 Category



Observations:

1. I found that for the states of C1 category, all top sub-sectors are almost contributing at the same level. Their contribution is somewhere between 11% to 14%.

But the same is not true for other categories.

This implies states of C1 category focuses on all aspects of economy.

Also I found that major contributor in C1 category's states are sub-sectors of Tertiary sectors.

2. Also, seems like sub-sector - 'Real estate, ownership of dwelling & professional services' seems to be correlated with High GDP as it is highest contributor in C1 category.

And the value has been going less while moving from C1 to C4.

Recommendations to improve GDP per Capita:

1. Despite being the highest GSDP, C1 categories states should focus on below sub-sectors to improve GDP per capita:
Utility Services, Financial Services, Public administration, Storage and transportation services
2. For C2 Category: Major contributor sub-sector in this category is manufacturing. But if we see the contribution of other sub-sectors, some of them are contributing between 1 to 6%.
So states should focus on below sub-sectors to improve their per capita GDP.
 - Mining and quarrying
 - Utility Services
 - Transport, Storage and communication services
 - Public administration
3. For C3 Category: In this category, states should focus on
Manufacturing and Mining sectors as it will induce industry growth and industry revolution is the next phase of development for C3.
4. C4 Category: Here, states should focus on: `Trade`, `Manufacturing` and `Construction` as infrastructure is important for growth at preliminary stages.
Also more focus can be given to improve techniques for `Agriculture` and `Crops` as they form basis for C4.

GDP Per Capita vs Dropout Rates in Education

1. I found that, there is a negative impact of all 3 drop out rates (i.e. Primary: -0.57, Upper Primary: -0.56, Secondary: -0.38) on Per Capita GDP.

Means higher the drop rates in any of the education level, lesser the per capita GDP.

2. Also, I found that there is positive relationship between drop out rates on any of the education level.

Means if drop out rate is more in Primary Education, there are high chances that the rates will be higher on Upper Primary and secondary level.

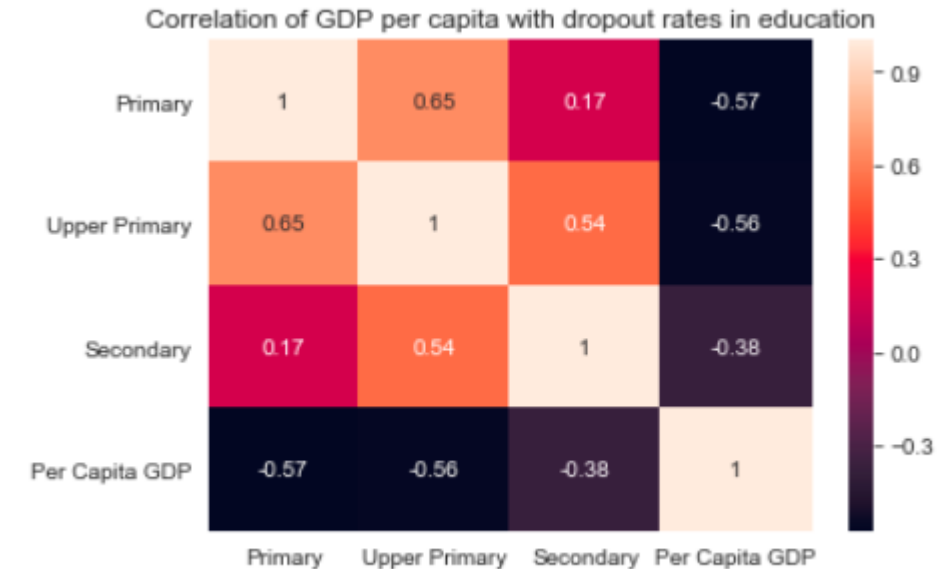
Recommendations to improve GDP per Capita:

- There are two main reasons where students drop out of Education

1. Lack of interest

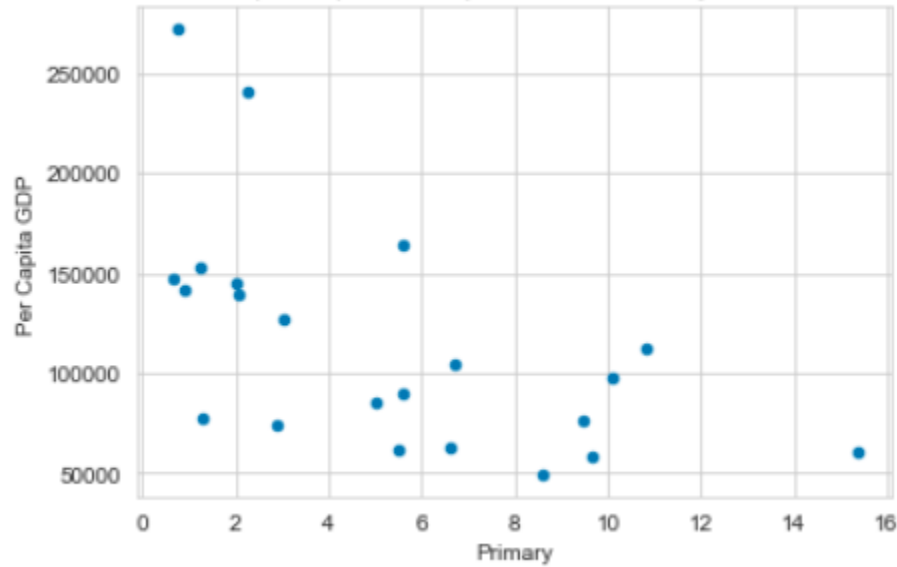
2. Financial Problem in houses

If we provide students a better work environment, make education system easy on them with a less fee program, less students will drop out and hence higher Per Capita GDP we can achieve.

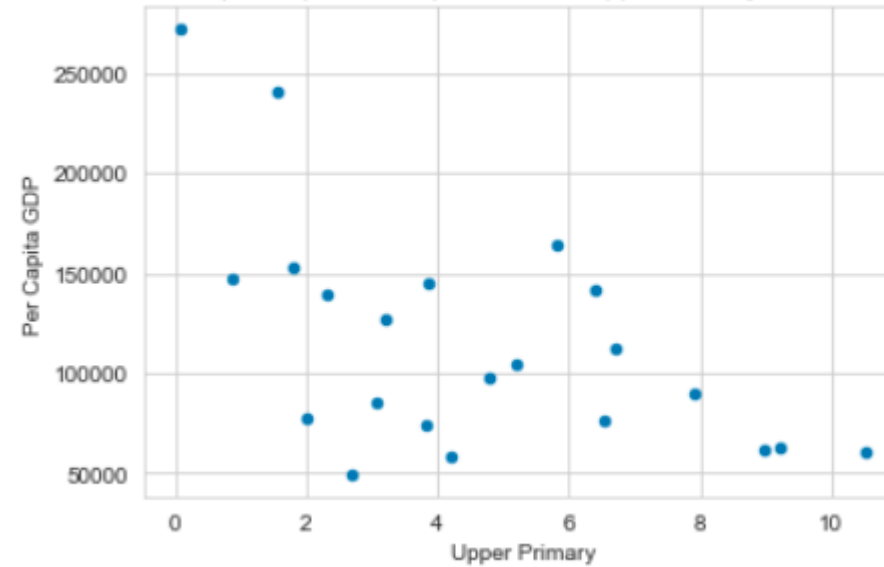


GDP Per Capita vs Dropout Rates at Different Education Levels

GDP per Capita vs Dropout Rate in Primary Education



GDP per Capita vs Dropout Rate in Upper Primary Education



GDP per Capita vs Dropout Rate in Secondary Education

