I. Introduction:

The motive is to understand the GDP of Indian states and India as whole for the years 2013-16.
The average growth rate of all the states and average growth rate of the country have been calculated and compared against each other to find the states where most of the development has happened and at what pace. This will help us get an understanding of how the countries and the states have been performing over the years.

The contribution of the 3 major sectors (Primary, Secondary and Tertiary) has been calculated as a percentage of the total GDP of the state i.e GSDP.

The states have then been divided into 4 categories based on their Per Capita GDP. Furthermore, the contribution of each sub-sector has been calculated to see which states need redressal in which sectors, which sectors have been outperfroming others, etc.

Lastly, the Dropout rates have been analysed for each of the categories and a hypothesis is formed based on which the individual states can take action to address the issue.

II. Details of the Dataset:

The data consists of 2 observations for 33 states and union territories for the years 2011 to 2017. The observations consist of “Total GDP at Current Prices (in Crores)” and “Percentage Growth over previous year”. This has been used to calculate the Average % Growth and the Total GDP for all the States and the UT’s.

The Data for calculating the % Contribution of each sector and sub-sector has been taken individually for each state. These have then been merged together to create a single dataset containing information on the amount various sectors have contributed for the year 2014-15.

The data for calculating the Dropout Rates consists of the percentage dropouts for the year 2014-15 for various states and UT’s for each level of education. This has then been merged with the previous dataset containing the state categories to find the % dropouts for each category.

III. Average Growth of States over the duration 2013-2016:

The National Average Growth over the concerned duration was found to be 11.20 %.

- **States with the Highest Growth Rate:**

  The top 5 states with the highest Average GDP Growth over the duration 2013-16 are:

S.No	State	Average Growth Rate
1.	Mizoram	17.70
2.	Tripura	17.03
3.	Nagaland	16.42
4.	Manipur	14.61
5.	Arunachal Pradesh	14.41
6.	**Average**	**16.03**

Their combined Average Growth Rate is pegged around 16 % which is significantly higher than the national average of 11.20 %.

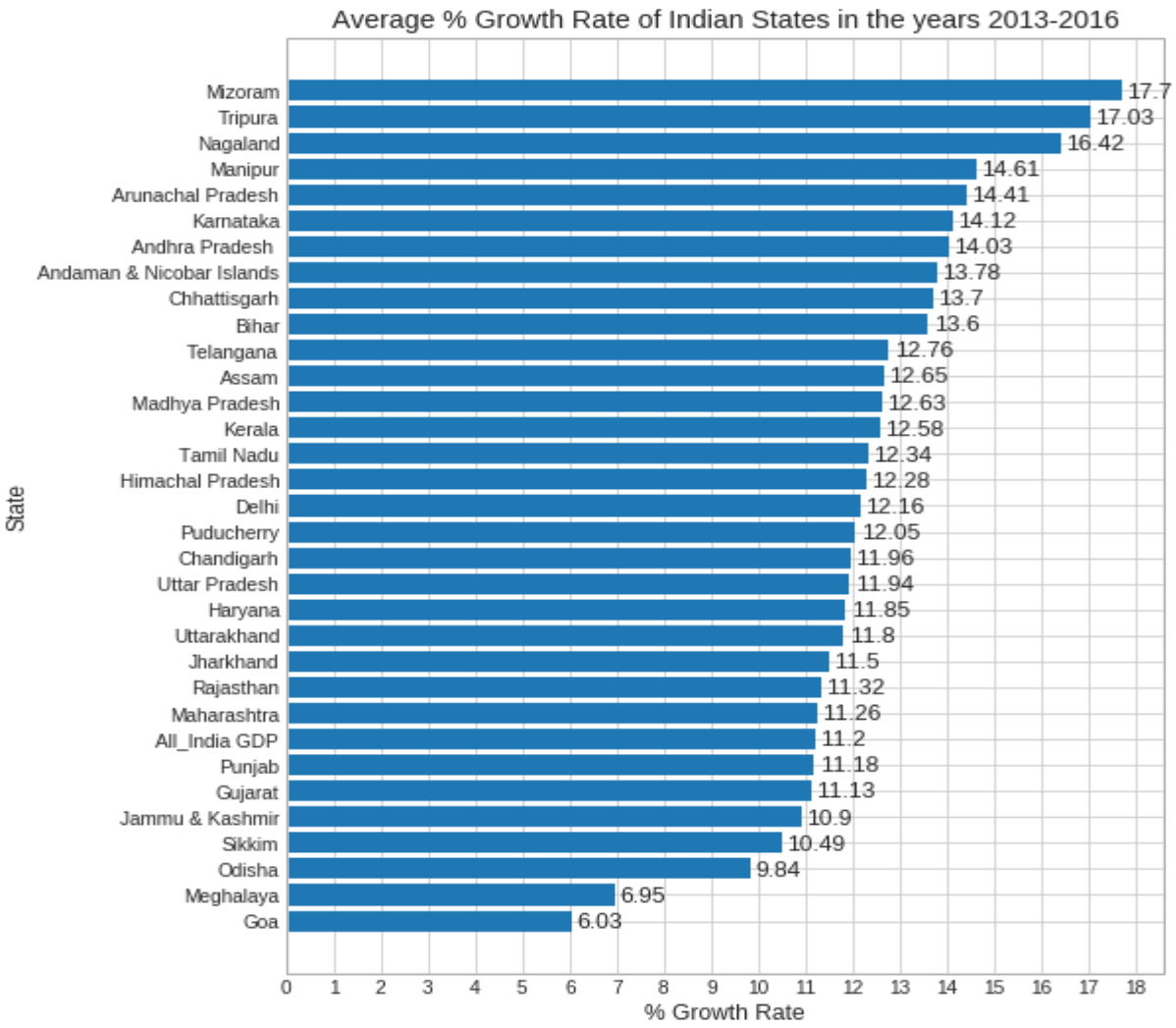
It is to be noted that all the fastest growing states in terms of GDP belong to the North-Eastern Region.

- **States with the lowest Growth Rate:**

S.No	States	Average Growth Rate
1.	Goa	6.03
2.	Meghalaya	6.95
3.	Odisha	9.84
4.	Sikkim	10.49
5.	Jammu & Kashmir	10.90
6.	**Average**	**8.84**

The combined Average Growth Rate of the above states stands at 8.84 % which is considerably lower than the National average of 11.20 %.
It is interesting to note that the North-Eastern states feature in both the highest and the slowest growing states of India.

The Overall Average Growth Rate for all States and UT’s stands as follows:



■ **Average Growth Rate of my home state:**

The Growth rate of Madhya Pradesh stands at 12.63 % which is about one and a half percent higher than the national growth rate. It is an agro-based economy with 30 % forest cover, one of the highest in the country and the reason for the high growth rate can be attributed to the following factors:

1. Agricultural policies implemented by the then CM benefited the small farmers who leased land for farming.
2. Private investments in upcoming metropolitan cities like Indore in sectors such as Pharma and Information Technology.
3. Simhasth Kumbh Mela held in Ujjain which gave a major boost to the small and medium businesses such as local travel companies, skilled handicraft workers, local hotel and restaurant owners.

Total GDP of all the States (in Crores) for the duration 2011-2015

The Total Average Volume of GDP for India over the duration stands at Rs. 1,05,88,264 crore.

- **The states with the highest average volume of GDP are:**

S.No.	State	Total GDP in Crores
1.	Maharashtra	1540265
2.	Tamil Nadu	917655
3.	Uttar Pradesh	883617
4.	Gujarat	760687
5.	Karnataka	758788

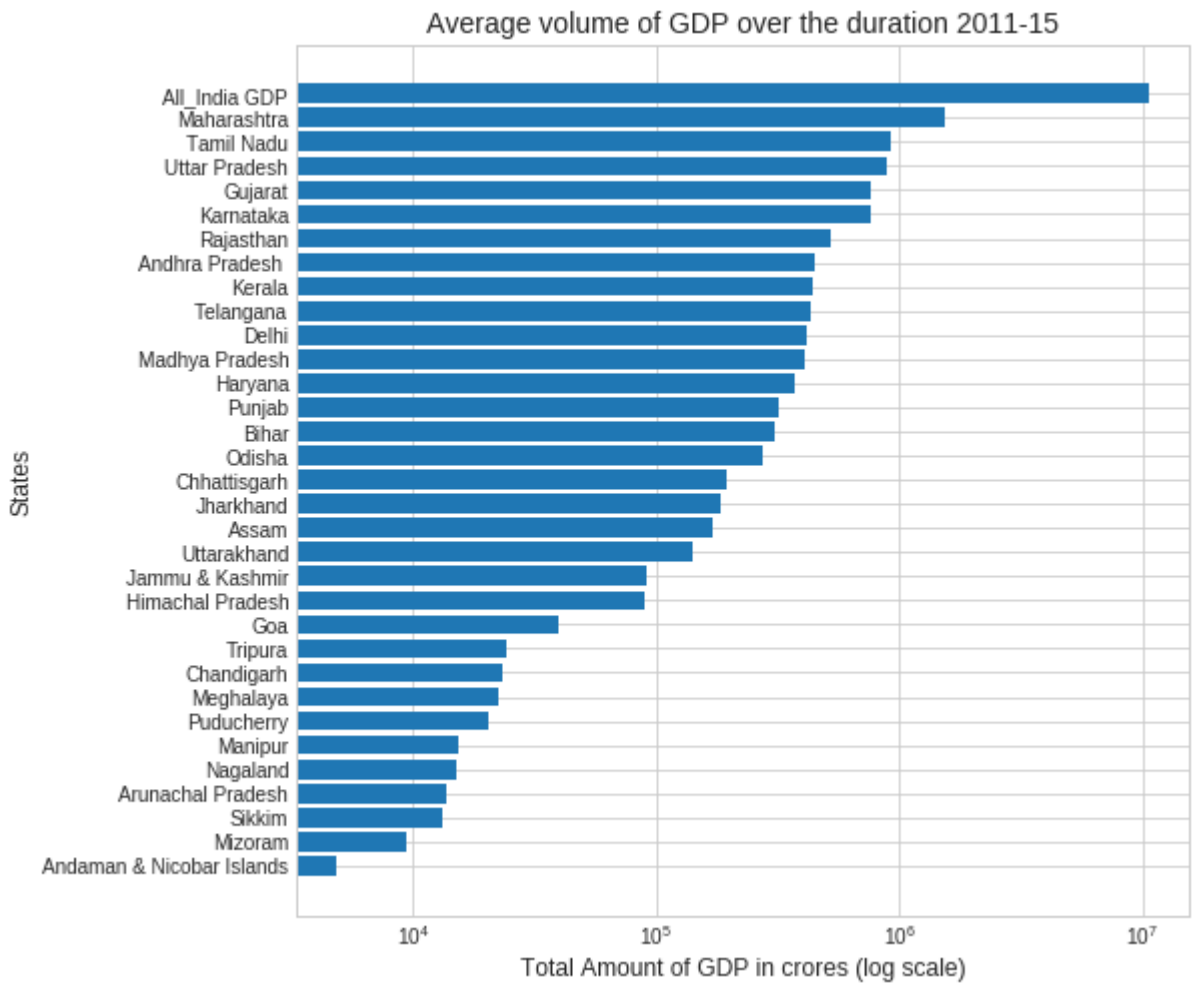
- **The states with the lowest average volume of GDP are:**

S.No.	State	Total GDP in Crores
1.	Mizoram	9368
2.	Sikkim	13143
3.	Arunachal Pradesh	13743
4.	Nagaland	15121
5.	Manipur	15226

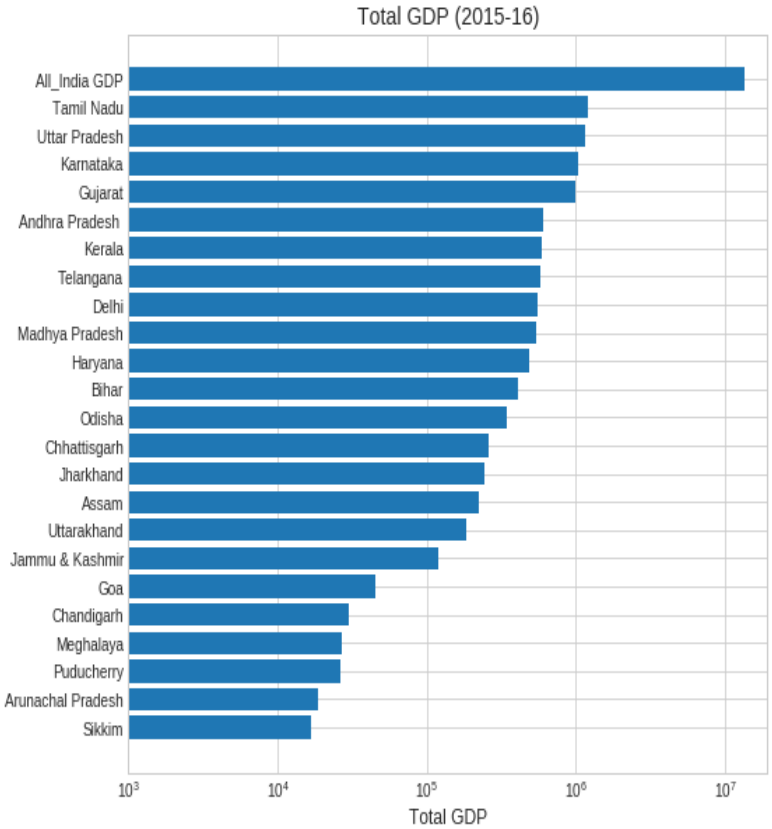
It can be seen that the big states have the largest GDP's in the country. Maharashtra takes the lead by far and stands its ground as the financial capital of the country. It is followed by Tamil Nadu, Uttar Pradesh, Gujarat and Karnataka.

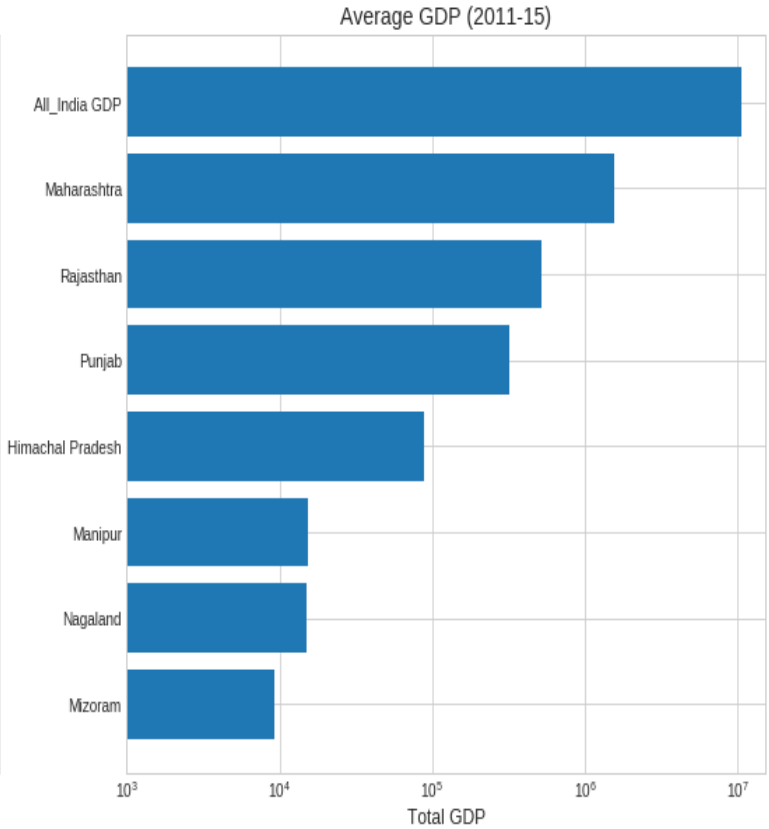
The bottom rung consists of North-Eastern states entirely. It is to be noted that the same states have shown the highest growth rates except for Sikkim which performs poorly in the growth rate too.

The overview of the Total GDP of all the States and the UT's is as follows:



Total GDP of all the States (in Crores) for the duration 2015-2016





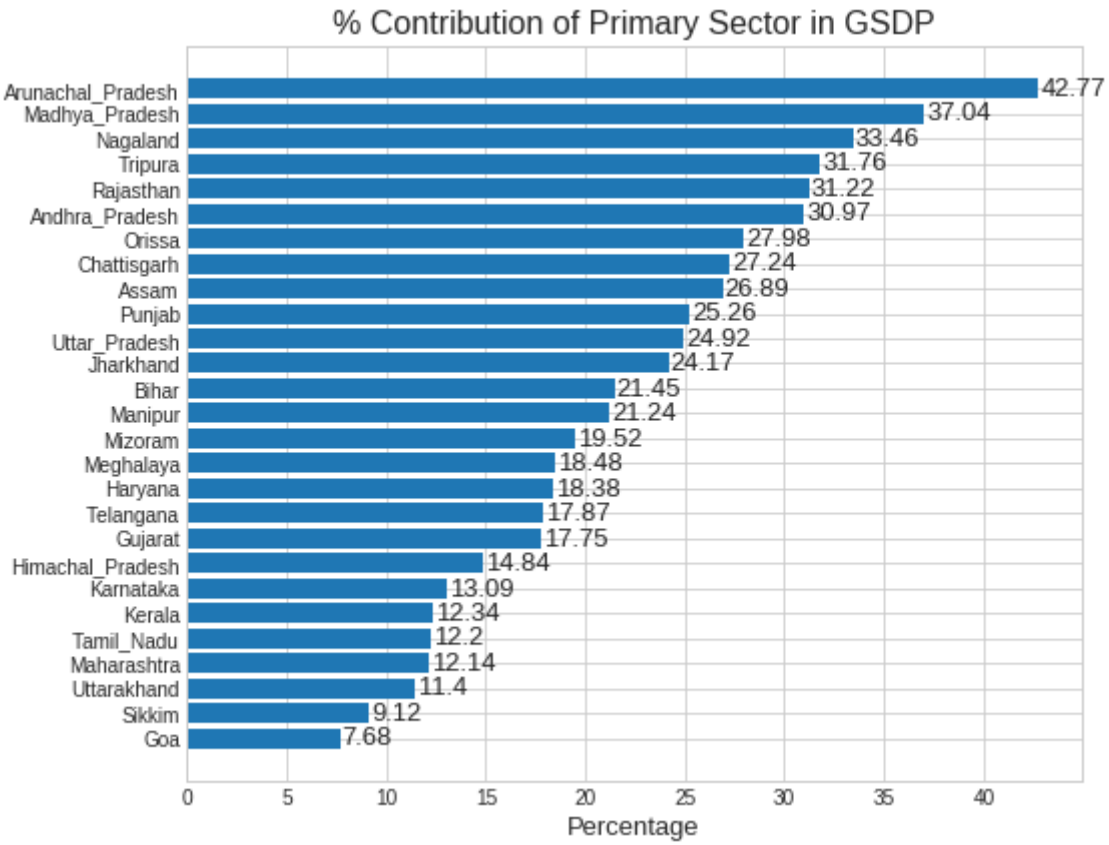
It can be seen that not much has changed as the top and bottom positions are still being retained by the same states. However, the GDP for India has grown by about 10% over the duration.

Percentage Contribution of Major Sectors inthe GDP:

Finding the contribution of each sector and sub-sector to the GDP of each state. The major sectors are defined as follows:

1. Primary Sector
2. Secondary sector
3. Tertiary Sector

- **Contribution of Primary Sector:**



It can be seen that the least developed states (both in terms of total GDP and the % Growth mentioned in the preceeding pages) are greatly dependent on the Primary sector with as much as 43% contribution (Arunachal Pradesh).

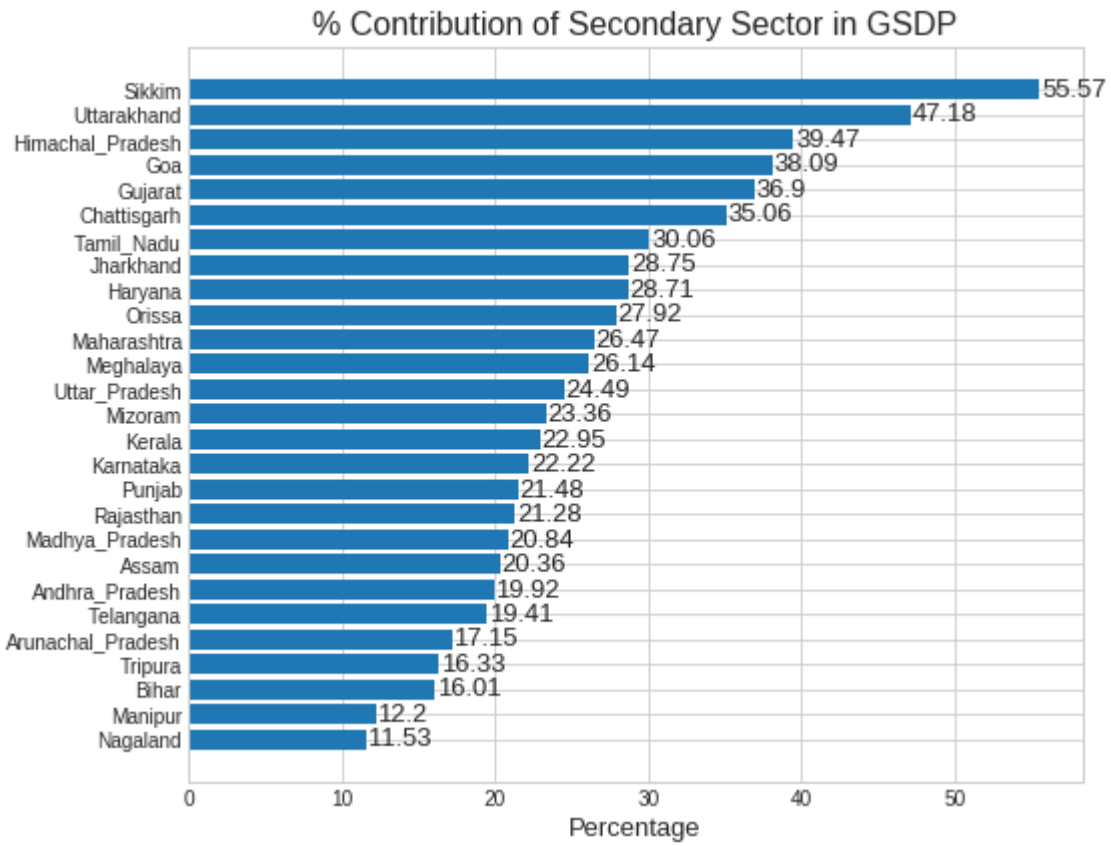
States with more than 30% contribution of Primary Sector include:

1. Arunachal Pradesh
2. Madhya Pradesh
3. Nagaland
4. Tripura
5. Rajasthan

It can be seen that Rajasthan, despite being the top 6 by total GDP still has a great dependency on agriculture and agro-based industries.

The least contribution of Primary sector in the GDP is for states which have the highest volume of GDP. These include Maharashtra, Tamil Nadu, Karnataka and Gujarat.

- **Contribution of Secondary Sector:**

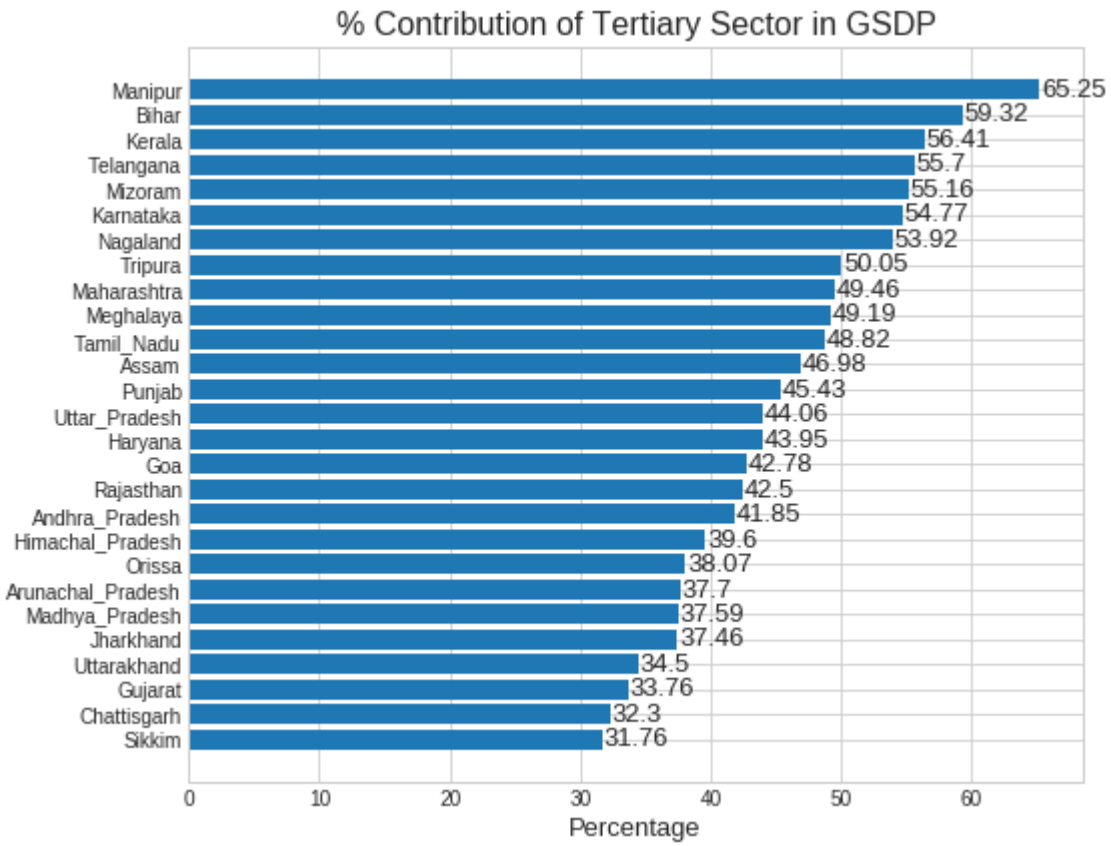


Sikkim comes out on the top with more than half of its GDP from the Secondary sector. It has to be noted that Sikkim featured in both the slowest growing states as well as the states which have the lowest volumes of GDP. However, that might be due to its small size and population.

States with more than 30% of contribution from the Secondary sector include:

1. Sikkim
2. Uttarakhand
3. Himachal Pradesh
4. Goa
5. Gujarat
6. Chattisgarh
7. Tamil Nadu

- **Contribution of Tertiary Sector:**



It is to be noted that all the states have the contribution of Tertiary sector above 30%. It is evident from the above plot that India as a whole generates most of its GDP from providing services.

The top 5 states with regards to contribution of Tertiary sector include:

1. Manipur
2. Bihar
3. Kerala
4. Telangana
5. Mizoram

Categorising the States into 4 buckets based on Per Capita GDP:

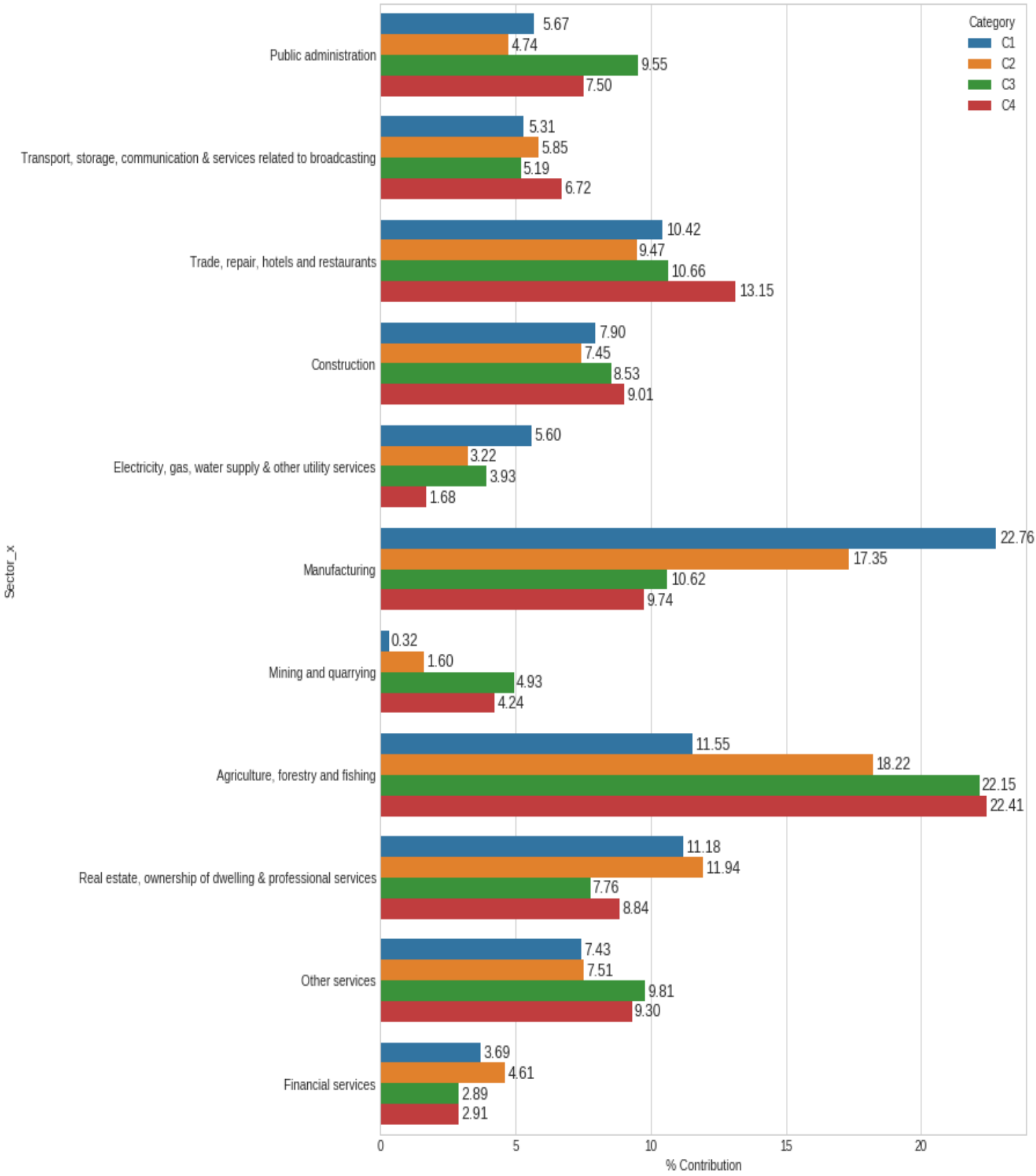
The categorisation is done on the Per Capita GDP of each state. The quantiles have been taken as follows:

Range	Category
0 to 20 percentile	C4
20 to 50 percentile	C3
50 to 85 percentile	C2
85 to 100 percentile	C1

The categorisation of the States is as follows:

S.No.	State	Category
1.	Sikkim	C1
2.	Goa	C1
3.	Haryana	C1
4.	Kerala	C1
5.	Andhra Pradesh	C2
6.	Telangana	C2
7.	Tamil Nadu	C2
8.	Punjab	C2
9.	Uttarakhand	C2
10.	Karnataka	C2
11.	Maharashtra	C2
12.	Himachal Pradesh	C2
13.	Gujarat	C2
14.	Arunachal Pradesh	C2
15.	Meghalaya	C3
16.	Mizoram	C3
17.	Nagaland	C3
18.	Orissa	C3
19.	Chatttisgarh	C3
20.	Rajasthan	C3
21.	Tripura	C3
22.	Madhya Pradesh	C4
23.	Manipur	C4
24.	Bihar	C4
25.	Assam	C4
26.	Jharkhand	C4
27.	Uttar Pradesh	C4

Contribution of the Various Sub-Sectors in each Category:



Major contributions in each category:

Category	Sub-Sector	Contribution	Category	Sub-Sector	Contribution
C1	Manufacturing	22.76	C2	Agriculture	18.23
C1	Agriculture	11.56	C2	Manufacturing	17.35
C1	Real Estate	11.13	C2	Real Estate	11.95
C1	Trade	10.42	C2	Trade	9.48
C1	Construction	7.96	C2	Other Services	7.52
C1	Other Services	7.43	C2	Construction	7.45
C1	Public Administration	5.67	C2	Transport	5.86
C1	**Total**	**77%**	**C2**	**Total**	**78%**

Category	Sub-Sector	Contribution	Category	Sub-Sector	Contribution
C3	Agriculture	22.15	C4	Agriculture	22.42
C3	Trade	10.67	C4	Trade	13.15
C3	Manufacturing	10.62	C4	Manufacturing	9.75
C3	Other Services	9.81	C4	Other Services	9.3
C3	Public Administration	9.56	C4	Construction	9.01
C3	Construction	8.53	C4	Real Estate	8.84
C3	Real Estate	7.76	C4	Public Administration	7.51
C3	**Total**	**79%**	**C4**	**Total**	**80%**

Manufacuring takes the lead in C1 states whereas Agriculture for the remaining categories.

Agriculture and Manufacturing have almost the same contribution for C2 states which shows that the dependency of the population is shifting from agro-based works to blue and white collar jobs.

Real Estate retains the 3rd spot for both C1 and C2 states since the purchasing power of the population is high.

It can also be seen that Trade remains one of the main source of income for the poorer states as it is the second highest contributor to the state's GDP in both C3 and C4 states.

Sectors that the various categories need to focus on:

C1 States:

1. C1 states need to focus on **Transportation and Storage sector**, since transportation acts as the backbone of all the trades that happen in the state. A stronger connectivity would mean that high volumes of trade could occur in much lesser time which will boost the trading sector of not only the C1 states but also the nearby states who could use the enhanced transportation network for their trades.

   An increase in the storage houses could mean less fluctutation in the prices of agricultural produce, which will help stabilise the state’s economy and even increase the percentage

contribution of the agricultural sector. Storage houses could help in storing the surplus crops from various nearby states which will be beneficial to the country as a whole.

2. **Financial services**: Since the C1 states already have a base of population with a decent income, these services could make people invest their savings in the market and help them with their financial planning, which in long term would benefit the country.

C2 States:

1. The contribution for **Trade, Repairs, Hotels and Restaurants** sector is the lowest for C2 than any other category. Policies that favour tourism could help boost the buisness of hotels and resturants. Steps such as ease of doing business will also help immensely in the setting up of new hotels and making Trades. Since Trade depends significantly on the connectivity, construction of roads, rails and airports should be made a priority.
2. **Electricity, Gas, Water Supply and Other Utility Services**:The contribution of this sector is a meagre 3.2% which shows that even in states with comparitively high Per Capita GDP, these basic utilities are still not available to the vast majority.

C3 States:

1. **Manufacturing**: The contibution is around 10.6% which is less than half that of Agriculture (22%). Companies need to be brought in with lucrative deals to set up their businesses in these States. A growth in the Manufacturing sector could mean low rates of unemployment, higher Per Capita GDP, healthier population, good status of living and high purchasing power of the people.
2. **Real Estate, Ownership of Dwelling and Professional Services:** C3 states have the least contribution from this sector. It comes as no surprise because C3 states have a higher population living in Urban areas as compared to Rural. With a lower per capita GDP, this sector will take a hit as people cannot afford to buy their own houses.

C4 States :

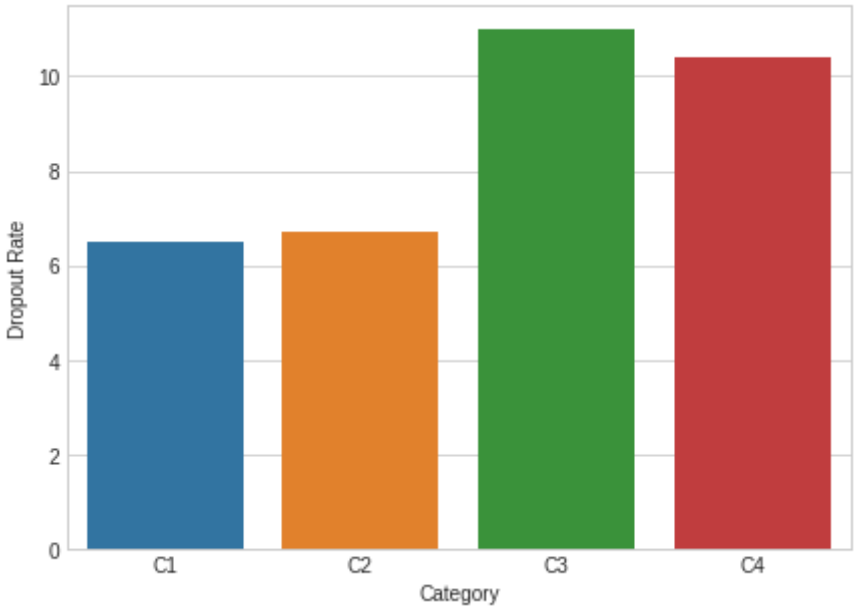
1. **Manufacturing:** The contribution in the economy is less than 10% which is less than the percentage contribution made by Trade, Repairs, Hotels and Restaurants sector(13%). These states need to invite companies to set their businesses there, also presenting them with lower tax rates and other benefits could increase the share of this sector dramatically, considering the fact that these are highy populous states with the majority being youth (workforce).
2. **Electricity, Gas, Water Supply and Other Utility Services:** With a contribution less than 2%, this sector needs immediate redressal of the bottlenecks in the schemes introduced by the government.

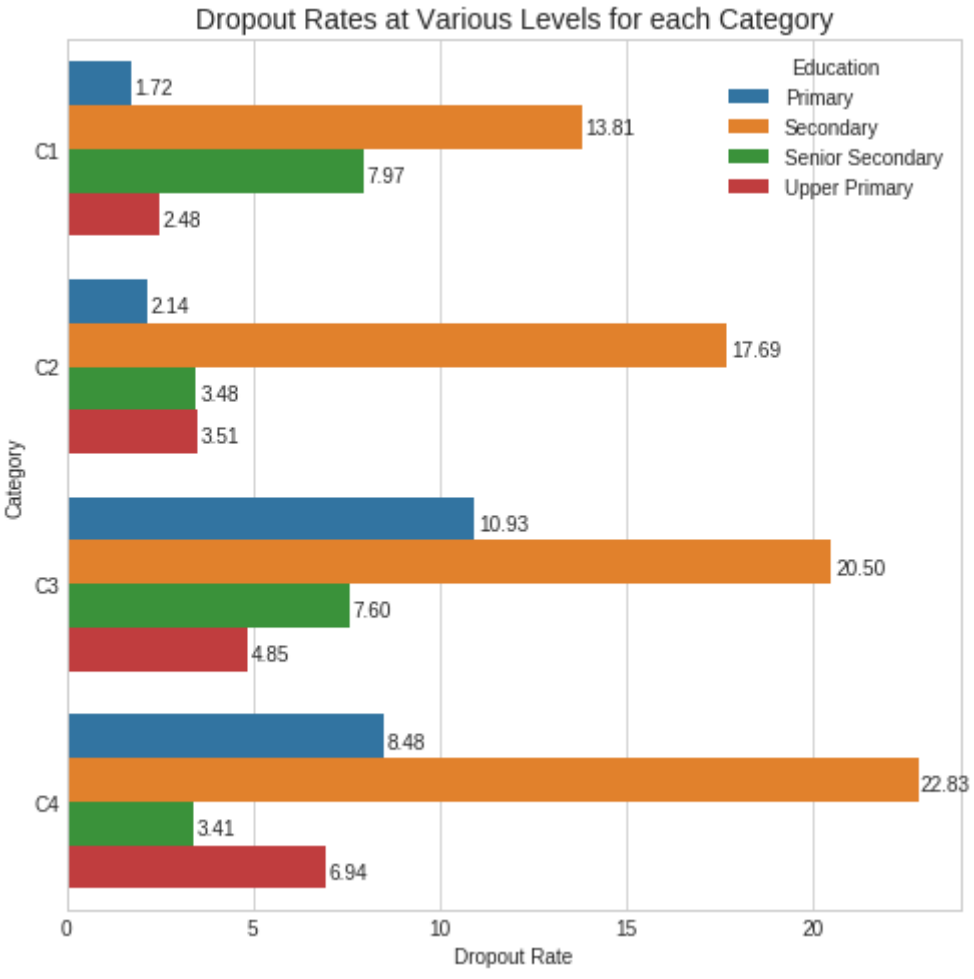
Dropout Rates for each Category:

The dropout rates have been considered at 4 education levels which are:

1. Primary
2. Upper Primary
3. Secondary
4. Senior Secondary

The percentage of dropouts have been calculated at each education level for each Category.The overall dropout rate increases with the decrease in Per Capita GDP from C1 to C4 States.





The above plot makes it clear that for each category, the highest percentage of dropouts happen at the **Secondary** level and these rates increase with decreasing Per Capita GDP.

Primary, **Upper Primary** and **Secondary** dropout rates show a steady increase from C1 to C4 states. This proves the correlation between the Per Capita GDP and the Literacy rate.

Problem Description & Remedial Steps that can be taken:

Primary: For C3 and C4 states, the % dropout in the Primary schools ranges from 8.5-11%, which means that around 10 out of 100 children belonging to the poorer states do not even get the basic level of education. This severly limits their choice of occupation and their standard of living which further leads to a deadly cycle of poverty and illiteracy.

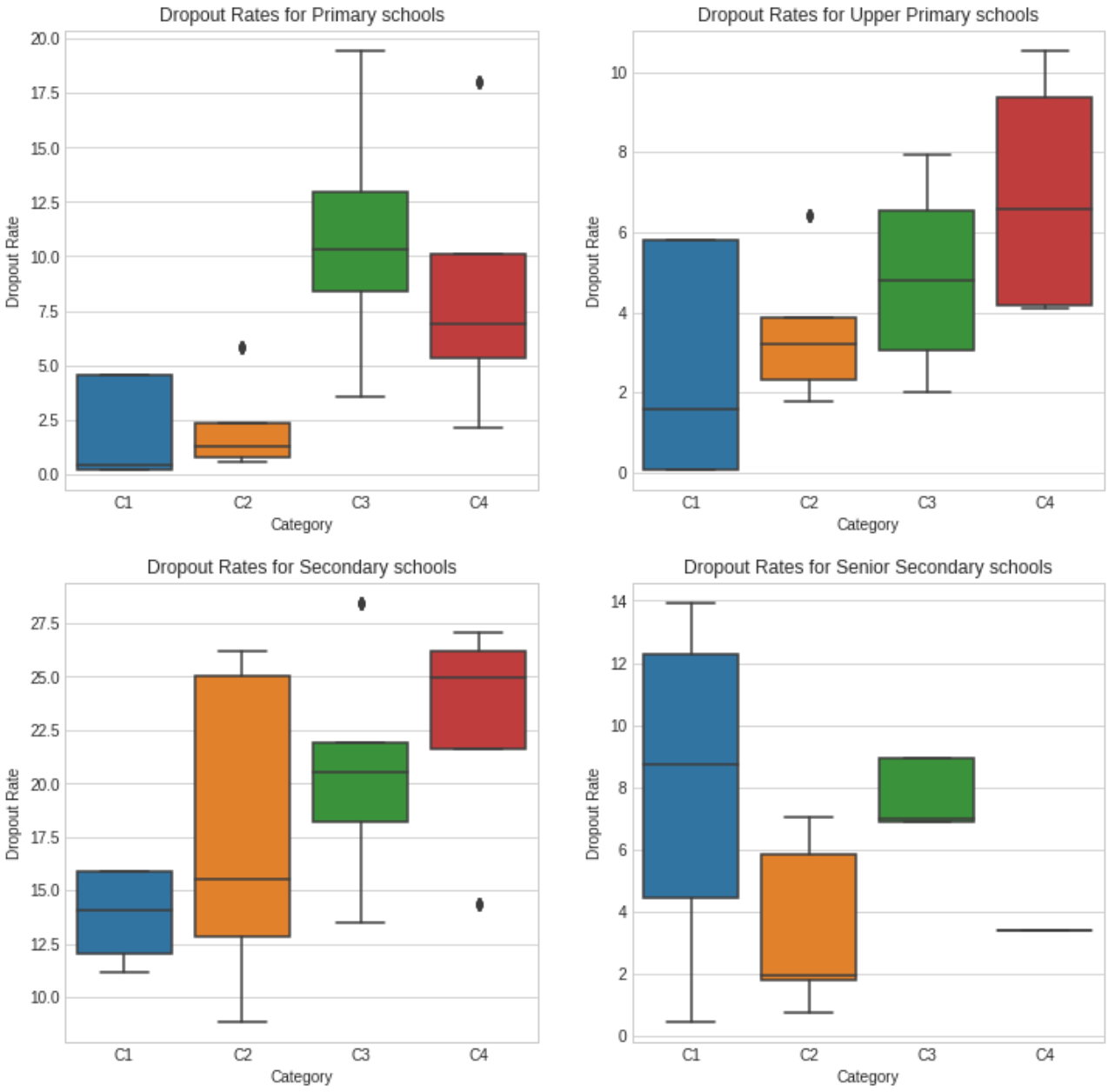
Upper Primary: The increase is steady from C1 to C4 states, but the magnitude is relatively small, which tells us that once the students have made it to the Primary level, they are much less likely to dropout in the Upper Primary level. This further highlights the importance of Primary schooling. Also people dropping out at this level can be considered literate in the sense that they can read and write, which opens up doors for them in terms of job prospects.

Secondary: The dropout rates at the secondary level are staggeringly high even in the states with high per capita GDP. With an average of 14 students out of 100 dropping out in the C1 states, the main reason behind this could be the cost of schooling incurred. Although C1 states have a high per capita GDP, the maximum amongst them still figures out around Rs.2.50 lakhs per annum, which is barely sufficient to pay for schooling. The Government schools need to be strengthened and their reputation improved. Lessons should be taken from Delhi where the results of Government schools have improved dramatically, even bypassing the results of the private schools. More money should be alloted to the Education ministry in all states regardless of their category.

Senior Secondary: It follows an interesting pattern, with C1 states having the highest dropout rates amongst all categories followed by C3, C2 and at last C4. It is quite peculiar that the states with lower per capita GDP of less than Rs.50k per annum have the least dropout rates. This might be due to the number of enrolled students in the schools. There can be a case where C4 states have the least nummber of enrolled students and hence reducing the % dropout. C1 states need to desperately work on bringing down the cost of education at the senior secondary level. C2 states have fared really well at this level.

Category wise Dropout Rates:

The spread of the dropout rates for each of the category is as follows:



The most visible insight from the above plot is that the median rate of dropout increases from C1 to C4 states for all levels of education except **Senior-Secondary**. On the contrary, C1 states have the highest % of dropouts at this level. As mentioned earlier, this can be due to the fact that not many people from the poorer states opt for senior secondary schooling which reduces the % dropouts.

Another interesting thing to note is the spread of the data for each category. For C1 states the spread of the data is lowest at the Secondary level of education which is the level with the highest dropouts. This further strenghtens the hypothesis of inverse relation between higher per capita GDP and the dropout rates.