yePPlDtL8erPK22cCpjjDyBKN

01vEMXR8bYpGl6g5Cdv2PGLUrgHGXnZnl6qpOwezkMeKOMhm1o

AAAAAAAAAAAAAAAAAAAAAMLlJQEAAAAASm2CREuUU8OU91rioLzWc1Dvo5g%3DJjSVShslsaRh1V6oaEe0QMmYJEnOPhf7E9gYmN9FTuvAKOX145

01vEMXR8bYpGl6g5Cdv2PGLUrgHGXnZnl6qpOwezkMeKOMhm1o

# Analysis of GDP

To start with the visualization, first I would like to see GDP of all 50 states and DC.And actually see how are have they increased their GDP from 2009 to 2019. In this regard, first I would like to see these 50 states including DC with their GDP change.

![1 a](https://user-images.githubusercontent.com/74025005/98322336-2a0d7a00-1fb5-11eb-94f0-35fd2e5833c3.png)

This plot shows 50 states GDP showing North Dakota being has highest chagne of GDP from 2009 to 2019. This tells us that compared to other states North Dakota's GDP has increased more than any other states. Now let's look a closer look to see, which states make top 20 in the list in bar plot.

![1 b](https://user-images.githubusercontent.com/74025005/98324301-e1a48b00-1fb9-11eb-92ed-cc2ec8827dd9.png)

The bar plot indicates the same thing where North Dakota is the top state and is followed by Washington, Texas, Utah and California.

Here, GDP of the state is the sum of total contribution in that state from different areas or industries. Deeping into, lets just compare the GDP in 2019 and see which state is top growing state just in 2019.

![1 c](https://user-images.githubusercontent.com/74025005/98324713-ffbebb00-1fba-11eb-8a44-fe27721ef4d5.png)

So, from the table it becomes clear that California is in top of the table, being followed by Texas, New York and Florida. Now, we know that California is at top state with highest GDP, let's see which industries in California are contributing to its GDP. In other words, lets see which indusrty is most growing industry in California.

![1 d](https://user-images.githubusercontent.com/74025005/98325124-10236580-1fbc-11eb-9965-86cebc1cc539.png)

From this donot shaped pie-chart , we can see that to rank California as the top state in GDP, Real state, rental and leasing is contributing significantly more than any other industries. 40% of its GDP is coming from real estate, leasing and industry. This is significantly huge !!. This indicates that businesses related to real estate might be sky rocketing and there might be a good chance that many people are employed in this area in California.

Now after knowing this, lets move to our second part of analysis.

Which industry is growing fastest in 2019 by STATE?

[link](<https://github.com/ujjoli/analysis1/edit/main/README.md>)

<https://github.com/ujjoli/analysis1/edit/main/README.md>

3.

# Analysis of spending and inflation

After we have analysed the personal income, now we can head up for analyzing spending pattern. The analysis of spending pattern is significant as it point out towards the inflation and as well

as consumer spending pattern. While comparing spending pattern to income, it is essential for policy makers to see if inflation is effecting people adversely. It tells us out

if people are able to save some money.

Keeping this in mind, lets compare the per capita expenditure of US to per capita income of US over the years. Per capita income means average income made each person and per capita expenditure

means average amount of money spended by each person.

![3 a](https://user-images.githubusercontent.com/74025005/98333253-4ec21b80-1fce-11eb-8eab-fc3b2ced199d.png)

From the comparison, you can see that per capita expenditure is increasing in same pattern like the per capita income. From 2008 t0 2018 and more, both per capita income and expenditure are increasing

with same slope. Today's per capita expenditure was equal to 2012's per capita income. This means that the amount of per person spending has been significantly increased. However, because of the parallel increase in per capita income,

there does not seem to be adverse effect. And the gap between these lines are showing that each person have been saving some amount of money. This can help the policy makers to control the market price accordingly.

So after national comparison, I would like to see which state has increased their spending rate and by how much from 2008 to 2019. So lets see the plot.

![3 b](https://user-images.githubusercontent.com/74025005/98333261-51247580-1fce-11eb-8b2d-6bf6587da3c9.png)

This horizontol bar plot shows California people have increased their spending rate by 40%. In same way, even other states are not that far away. This can lead to a point that though inflation have surged abundantly,

increase in each person's people income in all these states have maintained the economy market.

Through some data filter, we realized that the top areas where people are spending most money seems to happen Housing and utilities, health care and financial services and insurance.

Furthermore, to have more clarity, we can see the following plot which compares the spending behavior of Top 4 state residents in 2009 and in 2019. Among all, \*\*housing and utilites\*\* seems to be

the most expendable area for these 4 states (and even for other states) in both 2009 and 2019 as well.

![3 c](https://user-images.githubusercontent.com/74025005/98333262-5386cf80-1fce-11eb-8b23-f5545e039b47.png)

From this analysis, we can shed some light that per person in most of all states have top priority to spend in housing and utility, health care and financial services and insurance.

That is why affordable health care and affordable health care is always the biggest question.

Now, coming with this conclusion, let's specifically narrow down our topic to housing and utility. In other words, living and rental cost and move in our [next section]( )

4.

# Analysis of Relative Cost of Living and Expenses

As we came to know that housing and utility seem to be top priority of many residents, it is relevant to see which state in US have high cost of living and expenses.

Relative Cost of living and expenses is measured on RPP which is Regional Price Parity (RPP). It is an index (ratio) that sets the national average cost of goods and

services at 100, with a particular region's RPP showing how the cost of living in that region compares to that average.

So lets move on our analysis from following plot.

![4 a](https://user-images.githubusercontent.com/74025005/98337337-77e6aa00-1fd6-11eb-8a33-c718ce0333f6.png)

This is comparison of RPP in 2018. This plot shows that the darkest color laids on Hawii, California, Massachussets, Disctrict of Colombia and New York. They have the index more than 115 where 100 is

said to be the average. So the plot shows that Hawaii, California , Massachussets, DC and New York have highest RPP indicating they are the moest expensive place to live.

It is interesting that California has the highest spending rate, more contributed by housing and rental utility, seems to have similar pattern with RPP. This plot is not only

important to policy makers, but can also be a good indication for job seekers and people like who want to settle down. We can be convinced that, if we get job offer from

California and Alaska with equal salaries and benefits (assuming all other facilites to be similar) and want cheaper place to live in, we have to go with job offer from

Alaska and Alabama.

In addition, there is much disparity between the metropolitan area and non-metropolitan area. Metropolitan area are expensive than non-metropolitan area. This can

also be shown from following figure.

![4 b](https://user-images.githubusercontent.com/74025005/98337348-7c12c780-1fd6-11eb-88d6-73b209bce979.png)

With all these findings, now lets move on our [last section]( )