**BIRTH ANALYSIS ACROSS U.S. IN DIFFERENT AGE GROUPS**

In this story telling Project we have taken a data collection that comprises estimated adolescent birth rates for the age group 15–19 (expressed per 1,000 females aged 15–19) on a county-by-county basis for each year.

The first thing that we did was examine the data set that was provided to us to see whether it contained any inconsistencies, duplicate entries, missing numbers, or any other issues.

We did also add another data set that consisted of the divisions and regions of the Us in the data so that it would be suitable for more accurate analysis.

In accordance with the characteristics of the dataset, we have developed a variety of visualisations using tableau and power bi.

1. **STATEWISE BIRTH RATE ANALYSIS VISUALIZATION 1**

First, we created a state-by-state filled map and a bar chart of average birth rates. Then, using the overall mean, we concluded that

A. Mississippi is the state with maximum average birth rate that is of 53.45

b. Rhode Island is the state with minimum average birth rate that is of 13.31

c. we can also see that the southern part of us has more average birth rates than the northern part of the US

**2. YEARWISE BIRTH RATES OF US VISUALIZATION 2**

As per the line chart plotted, we can make following inferences:

1. From the year 2003 onwards average birth rate was stable till 2005 , however it had a small decline that is the birth rate fell from 44.98 – 44.17
2. Thereafter from 2005 the birth rate started rising till 2007 and reached its peak that Is in 2007 the average birth rates hit 47.11
3. From 2007 onwards the average birth rate had a steep decline and thereafter was not able to recover which was a good sign.
4. After going through the data and surfing through the net we found out that 2007 in general had baby boom in the us due to numerous regions such as high fertility in women and large number of immigrant population
5. **MISSISSIPPI REGION ANALYSIS VISUALIZATION 3**

We Further Analysed on the state of Mississippi and found out multiple county’s having almost same birth rates (that is between the range of 40 – 60) on the exceptions of Tunica having highest birth rate of 94.84 and Lafayette having lowest of 15.19

1. **DIVISIONWISE BIRTH RATE ANALYSIS OF US STATES. VISUALIZATION 4**

We combined two datasets adding region and divisions of US in our dataset the regions of us are divided into 4 parts and the division are a total of 9:

* **South   
  1. West South Central   
  2. East South Central  
  3. South Atlantic**
* **Midwest  
  1. East North Central   
  2. West North Central**
* **West  
  1. Mountain  
  2. Pacific**
* **Northeast   
  1. Northeast Middle Atlantic  
  2. Northeast New England**

So, on further expanding the visualisation (heat map) we can further know which Divisions are responsible for such high average birth rates.

From southern region west south central has highest average birth rate that is of 50.57

From Western region western mountain region has max average birth rate that is of 32.91

From Midwestern regions Midwest East North central region has maximum average birth rate of 29.37

According to the Heat Map plotted South region has maximum average birth rates.

So further we made a separate analysis on different division of the southern regions.

And from the bar chart plotted for the above, first west south-central region has highest average birth rate of 50.57.

1. (South) Mississippi has highest average birth rate of **53.45**
2. (South) Maryland has lowest average birth rate of **24.32**

**4. YEARWISE SOUTH REGIONS AVERAGE BIRTH RATES**

As we saw that the South region was having the highest average birth rate, we decided to see its division’s year wise average birth rate:

1. we can see that from 2003 to 2005 West, East, South Atlantic all three southern region’s average birth rate kept on decreasing, while there was rise in birth rate from 2005 to 2007 and reached at its peak. Then from 2007 onwards all three region’s birth rates kept on decreasing till today.
2. Also, we saw that there was one region that had lower birth rates that is South Atlantic Region, even though the trends were similar in other southern parts the highest birth rate that south Atlantic touched was 52.20 that was comparatively lower to that of the others.
3. **PIE CHART VISUALIZATION OF BIRTH RATES OF DIFFERENT DIVISIONS FOR THE YEAR 2007**Here from the pie chart we can make following inferences for the year of 2007:  
   a. west south-central region has highest average birth rate of 65.93   
   b. New England has lowest birth rate of 23.29  
   c. More than 40% of total birth rate is from southern regions.

**6. VIS 6 DECOMPOSITION CHART OF OUR DATA**

Here we are showing a decomposition tree, which shows the region with the highest average birth rate (South). It is also showing the division with the highest average birth rate in that region (West South Central). It also shows the state in that division with the highest birth rate (Arkansas) and the county in that state with the highest birth rate (St. Francis). This visualisation can be used to understand if there is an outlier in the data by expanding it. In this, we can see that the southern region has a very big average teen birth rate by expanding it more we understand what county is the reason for such high average teen birth rate.

**7. HIGHEST AND LOWEST BIRTH RATES OF ALL US STATES**

In this Last visualization we saw that the birth rates overall the years was:

1. The highest birth rate is in County – Todd and State - South Dakota that is of 108.3
2. The lowest birth rate is in County – Hunderton and State – New Jersey that is of 3.4

**CONCLUSION**Conclusion: With a rate of 53.45, Mississippi has the highest birth rate of any state and Rhode Island has the lowest at 13.31. As may be seen from the decomposition tree for the birth rate, the South has the greatest average birth rate. Southern regions account for more than 40% of the total birth rate. In the United States, the South has a higher birth-rate than the North because of the region's high fertility rate among women and its huge immigrant population. From 2003 to 2007, the birth rate was rather stable in all of the American regions, including the South. And After 2007 we saw a steep decline in birth-rates in all the regions bringing them down to a striking 21.71 average birth rates.

**THANK YOU**

**By:**

**J005 – Siddh Baldha**

**J031 – Naitik Jain**

**J037 – Rudra Joshi**

**J048 – Atharva Nilawar**