



# G20 GOVERNMENT SPENDING DATA

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individual project

DATS 6401: Visualization of Complex

# OVERVIEW



- World Bank Data --> Yearly time series data from 2012 to 2016
- Area of the project --> Picked Government spending (Education, Military, Healthcare) of G20 countries without European Union
- Various charts --> Geo map, Column charts, Pie charts, Stacked Bar charts, Bar charts, Scatter plots, Line graph, and Trendline.

# OUTLINE



- **OVERVIEW**

- ✓ GDP **map** for G20 Countries in 2016
- ✓ **Column chart** for government spending in each purpose in 2012-2016
- ✓ **Pie chart** for government spending in each purpose in 2012-2016 (Average)

- **COMPARISON**

- ✓ **Bar chart** for shared each spending as % GDP in 2012-2016
- ✓ **Stacked bar chart** for comparing spending in each purpose in 2012-2016 (Average)
- ✓ **Scatter chart** for comparing spending per capita in each purpose to GDP per capita from 2012-2016 (Average)

- **TREND**

- ✓ **Column chart** for 10 Fastest growing countries in each spending purpose in fixed value 2012-2016
- ✓ **Line graph and bar chart** 10 Fastest growing countries in each spending purpose in percentage 2012-2016
- ✓ **bar chart** for average growth rate 2012-2016 of 10 Fastest growing countries
- ✓ **Scatter chart** for the relationship between spending per capita in each purpose and GDP per capita for G20 countries



# OVERVIEW

- ✓ GDP of G20 Countries in 2016
- ✓ Government spending in each purpose in 2012-2016



# COMPARISON

- ✓ Compare the spending data to that country's GDP
- ✓ Compare the education and health to the overall military spending of the country
- ✓ Compare the per person educational spending to the per person GDP
- ✓ Compare the per person healthcare spending to the per person GDP
- ✓ Compare the per person military spending to the per person GDP



# TREND

- ✓ Fastest growing countries in healthcare and educational spending in fixed value and in percentage
- ✓ Identify any interesting and useful relationships and trends

# CONCLUSION 1



- The US is the G20's largest economy and spend the highest spending on education, military, and healthcare, among other countries.
- Almost countries, except Saudi Arabia, had the largest proportional spending that was for healthcare, followed by education and military, respectively.
- In term of % of GDP, South Africa and Brazil had the two highest spent on education. While, Saudi Arabia had the highest spent on military. For healthcare purpose, the US had the highest spent.
- In term of per capita, Australia and US spent per person on education, higher than the others. While, Saudi Arabia was the highest military spending per capita. For healthcare, the US spent on the first list.

# CONCLUSION 2



- There was no general trend in fixed value and in percentage change of spending in all three purposes of each country over time.
- The US always had the big change in spending between each year among other countries.
- The US was the fastest growth rate in educational spending from 2012 to 2016
- China was the fastest growth rate in military and healthcare spending from 2012 to 2016
- There was positive relationship between spending per capita in each purpose and GDP per capita of G20 countries. This makes sense since higher average income resulted in more average spending.



# ABOUT THE TOOLS



- RStudio and Microsoft Excel were used to clean the data
- HTML5, CSS, and JAVASCRIPT were used to work together
- Adapted elements from W3 School, Google visualization chart , and other online sources
- Adobe Photoshop CC 2019 was used to edit the images

# THANK YOU

