Summer 2022

MBA 562

Introduction to Business Analytics:

Communicating with Data

Module 1 Individual Assignment:

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# Step 1:

Find the data – find a source of numbers-based data (e.g., a company balance sheet, sales trends, Google search volume over time from Google Trends, etc.) that you want to analyze. **(2 points)**

After careful consideration of which data I want to analyze, I decided to use Google Search Volume over time from Google Trends. The data compares College, High School, Work, House search words.

The data source can be found from the reference.

My main objective is to visualize the relationship among the search terms and analyze the trend over the years from 2004 to 2022 by using the same data with different DataViz.

# Step 2:

Create various visualizations – find a tool (or tools) that can create a variety of data visualizations. The tools could exist on the web or on your computer (e.g., commercially available software that you have installed on your PC). Use the tool(s) to produce each of the following three simple visualizations with the data you have chosen (and be sure to use the same data for each DataViz) Please do include the name of the tool(s) you use to create the charts. **(6 points, 2 points per visualization)**

Line chart ([https://en.wikipedia.org/wiki/Line\_chart (Links to an external site.)](https://en.wikipedia.org/wiki/Line_chart))

Bar chart ([https://en.wikipedia.org/wiki/Bar\_chart (Links to an external site.)](https://en.wikipedia.org/wiki/Bar_chart))

Pie chart ([https://en.wikipedia.org/wiki/Pie\_chart (Links to an external site.)](https://en.wikipedia.org/wiki/Pie_chart))

The great thing about the Google Trend is that you can already visualize the possible result from the default GUI platform. However, I wanted to download and analyze the data using Line, Bar, and Pie charts from separate tool. The tool I chose for this assignment is Tableau. It was intuitive to use and like Excel graphing and pivot table tool.

Here are the graphs:

## Line Chart:

Graphical user interface, shape, arrow

Description automatically generated

**Note: For the Interest over time**  
Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term.

## Bar Charts

Chart, background pattern

Description automatically generated

Chart

Description automatically generated with medium confidence

## Pie Chart with United States Map:

Map

Description automatically generated

# Step 3:

Evaluate the visuals – explain the pros and cons of each visual.

(1) Does the visual form effectively communicate the data?

Yes, the visual forms effectively communicate with the data. Starting from the line chart showing the Google Trends from 01/04 to 05/22, We can see the gradual decrease in the interest in College and High School as Google search terms. We can also see some positive correlation between the two terms. The House and Work terms seem to be positively correlated also. However, in contrast to College and High School, the two terms seem to gain in popularities as Google search terms. There is a cross in the late 2016 between these two group terms. The aggregate stacked bar chart shows the better visual of the general trend of each search terms over the years. Also the Bar Chart showing the each state in percentage form for aggregated data between 2004 – 2022, we can easily visualize which state has the most interest in which search term.

(2) Can insights that exist in the data be seen easily in the visual form?

Yes, both line and bar charts show the insights that exist in the data of the latest trend in each search words as well as comparison between the search terms.

(3) Which visual best expressed the data you have chosen?

Comparing all the charts, the line chart is the most easy and insightful out of all the graphs because it quickly shows the data trend and relationship between the data than any other data visual charts.

(4) Which visual is the least effective? **(8 points, 2 points per question)**

Although Pie chart shows very visual picture of the United States and pie chart of the respective states, it is hard to compare the states. Therefore, this form of data visualization is the least effective for this set of data.

# References:

Hartman, K, (2022, May), Introduction to Business Analytics: Communicating with Data

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Google Trends (2022, May), Retrieved from

<https://trends.google.com/trends/explore?date=all&geo=US&q=College,High%20School,Work,House>