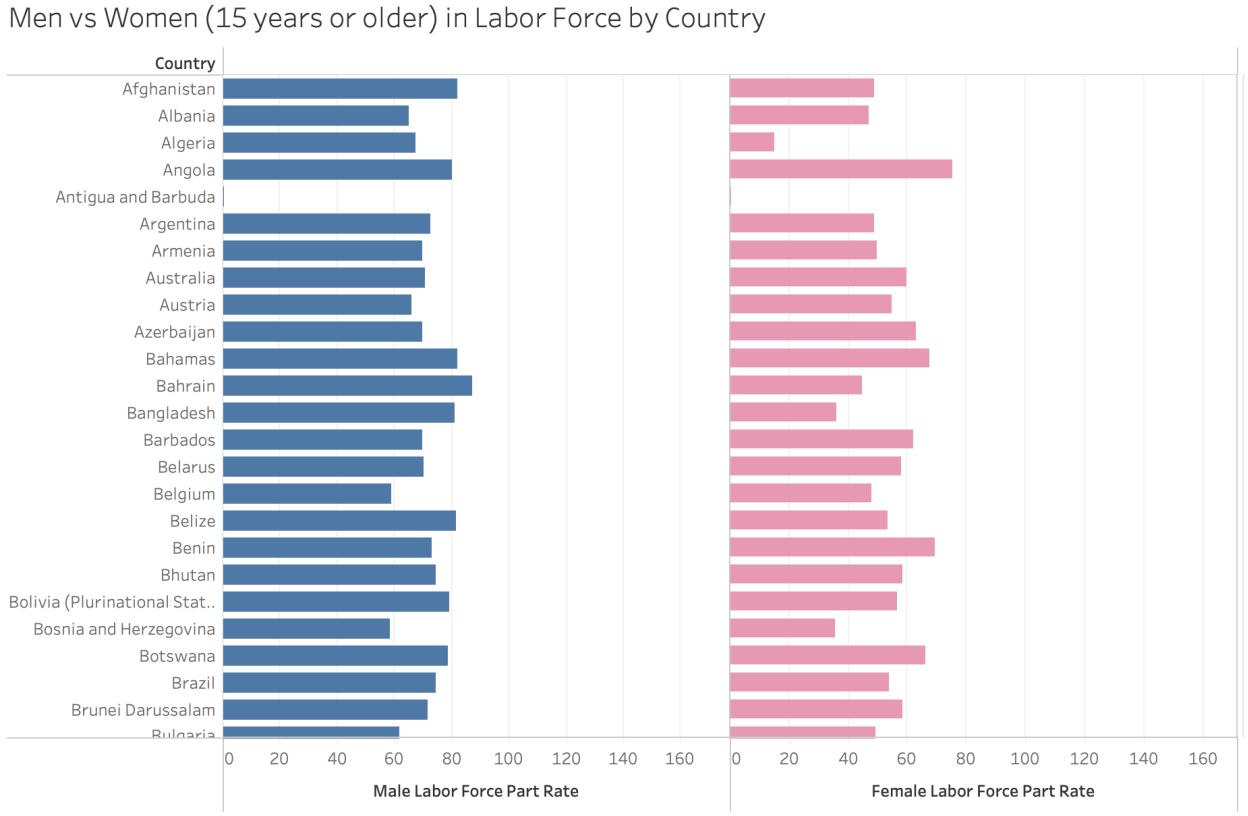
Homework 3

Part 1 – Three Questions & Answers

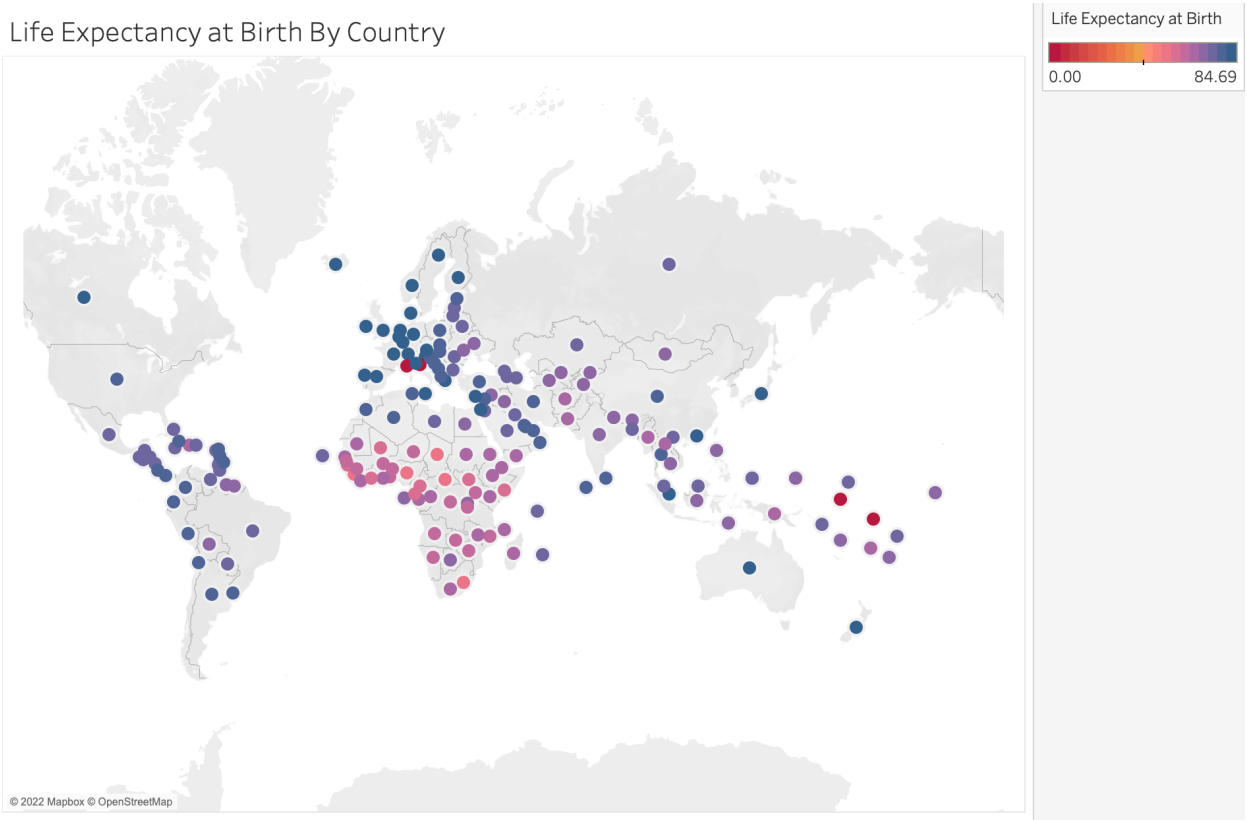
1. Overall, do we see a higher percentage of men in the labor force or women in the labor force (assuming the age is 15 years or older)?



Note: graph continues, this is just a portion of data graph

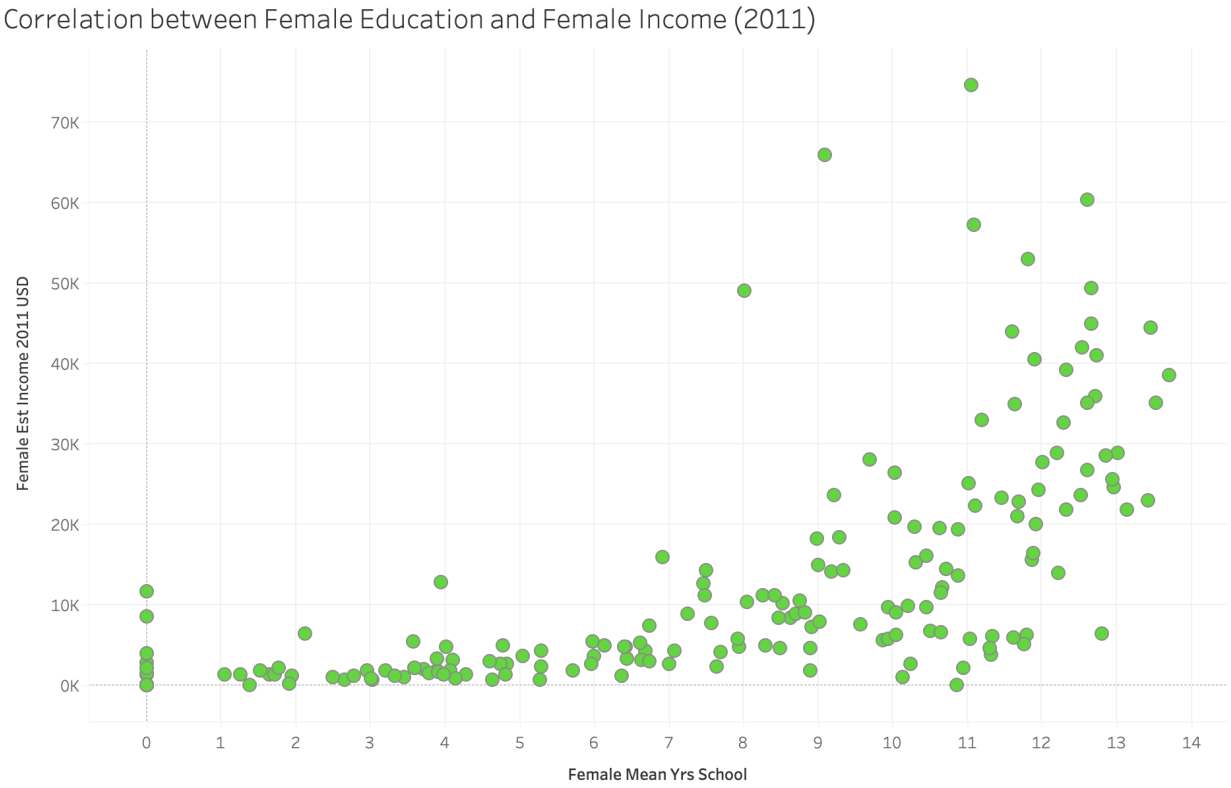
Overall, we can see a higher rate of men in the labor force than women. At first glance, the rate of women versus men seems somewhat equal, but when you take a look at the x axis, you see right away that men have a higher percentage. This graph is also interactive in that for each bar it has a tooltip that shows the exact percentage. When you go country by country comparing the men to women, men almost always have the higher percentage in the labor force.

2. Are countries with the highest life expectancies at birth located near each other or relatively located in the same regions?



Countries with higher life expectancies at birth are not really located in the same regions or next to each other. You do notice however, that higher life expectancies can be found in the northern hemisphere. Furthermore, lower life expectancies seem to be located in Africa. Overall, there does not seem to be any real or strong evidence that higher life expectancies can be found in a particular region or that those corresponding countries lie next to each other.

3. Is there a correlation between female mean years in school and the female estimated income for 2011?



The correlation is not that strong and you could even make a trend line for this graph which shows the r-squared value to prove this point. You can see somewhat of a correlation, but there are also many "outliers". There are a lot of countries in which although the mean school years are high, the estimated incomes are low and vice versa. This graph also includes a tooltip that shows the country, mean years in school, and estimated income. Using just prior knowledge about the world and being able to see which circles correspond to which countries, different people viewing this graph could come up with reasons as to why certain countries do not pay women as well despite higher education.

Part 2 – Critique the System

A few Strengths

- Handle large data sets with ease
- Aids with pre-attentive processing
    - with visuals, things just pop out more easily
    - we recognize trends and patterns a lot quicker
- Customization for various graphs and needs
    - labels, colors, texts, tooltip, etc
- Automatic graphs pop up in "show me" when different attributes selected
- Drag and drop is very user friendly for creating visualizations and intuitive for the most part
- No coding required, but option to is still there (could use Python or other scripted languages if needed)
- Good use of data marks and visual variables with size, shape, color, orientation, etc

A few Weaknesses

- Too many features can be overwhelming, user may not know where to begin
    - Too many ways to customize graphs or analyze data
    - Hard to understand what every tool does without spending more time on learning software
- Some things were not intuitive
    - when selecting certain attributes, the data was automatically aggregated so to figure out how to not aggregate the measures was not intuitive to find
    - I found out about data aggregation in recitation and prior to that was spending a lot of time messing with the attribute to not have it as a sum or average
- Static parameters, you would have to make changes manually every time if there are new changes to the data
- Cannot work with uncleaned data, data cleansing in database is needed in order to work effectively in Tableau
- Misinterpreting Measures from Dimensions in the dataset

    - perhaps because the dataset was so large, so you have to manually change them

Which tasks is it good for?

- Converting large amounts of data into an interactive visualization to make business decisions (data analysis)
- Relatively simple data analysis
    - trend lines/models, averages, and box plots
- Using Univariate or Multivariate Data works well
    - I was able to include not only country and mean school years, but also estimated income all in the same graph
- Filtering data
    - You can choose to select certain countries or leave certain countries out

Which tasks did you want to do, but could not?

- I wanted to create a pie chart when I had percentages, but with the attributes I chose, it would not work for some reason. I tried following the suggestions for the pie chart graph, but it still did not work.
- I was trying to use the correlation formula on one of my graphs, but could not figure out if Tableau had a tool for that. The closest thing was being able to make a trend line that showed the r-squared value for regression.
- Certain layouts are pre-defined, for example with the bar graphs, you can lay them out horizontally or vertically, but other than that you cannot arrange the bars in a different structure
    - The data in my first graph with the men versus women in the labor force, I could not arrange the bars in which the blue bars (men) and pink bars (women) were next to each other for each country
    - The men were separated onto the left hand side and the women were separated on the right hand side of the graph, but I wanted to have it to where you would have a blue bar (men) and then pink bar (women) directly under it so you could see the bars lined up together for each country