

SARC 5400
Final Project Part I

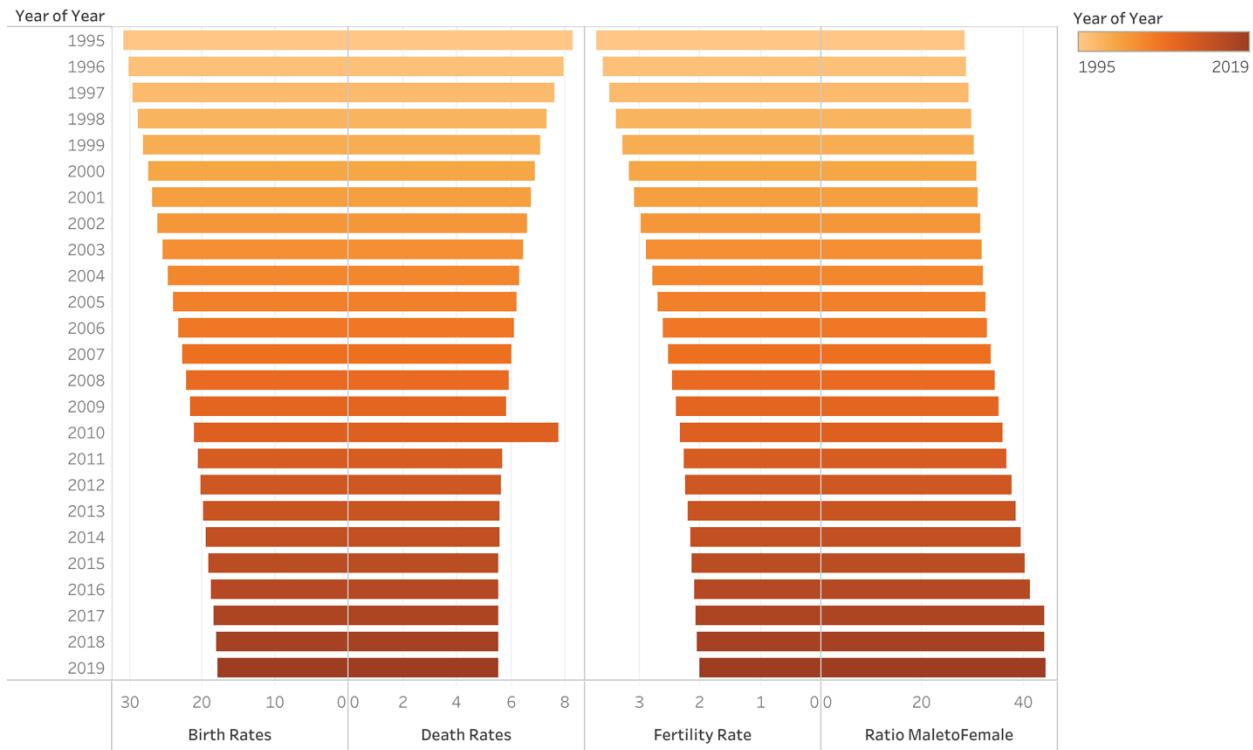
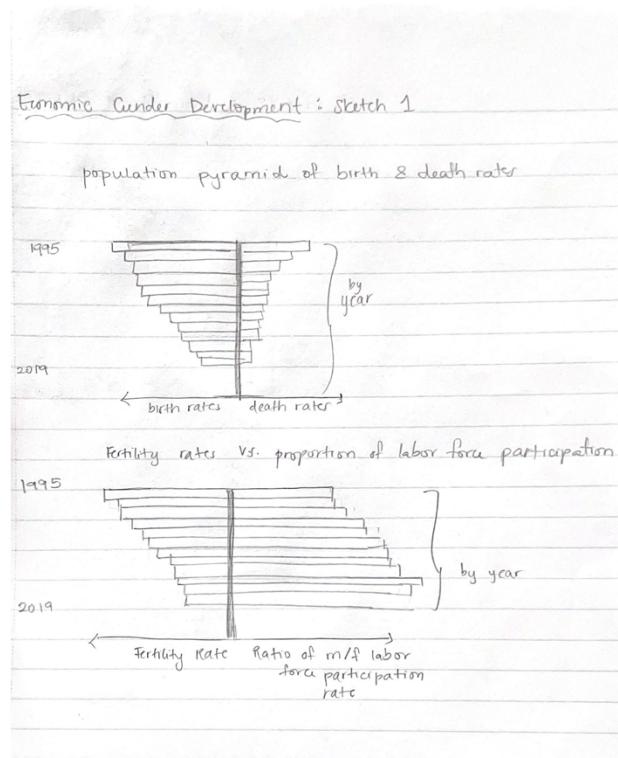
First Prototypes

For my final project, I am interested in investigating economic gender development in Bangladesh and the influence of education on female vulnerability. I specifically want to visualize the disparity in the labor force participation rate of women as compared to men. Another aspect I want to highlight is the relationship between fertility rates and proportion of female employment. My overarching question is: how does an increase in female education relate to the overall development of a country?

The dataset I am using for this is from Kaggle and is called Female Employment versus Socioeconomic Factors (Source: <https://www.kaggle.com/datasets/mdmuhtasimbillah/female-employment-vs-socioeconomic-factors?resource=download>). It is based on a survey of the population of Bangladesh and spans from 1995 to 2019. The dataset was pretty clean aside from two missing values for fertility rate in 2018 and 2019, which I manually filled in. Because birth rate and death rate are both important indicators of country development, I decided to also manually add those in as columns into the dataset. I found the values for these rates on the World Bank website (<https://data.worldbank.org/indicator/SP.DYN.CBRT.IN?locations=BD>). I came up with three sketches based on these project motivations, with the goal of each visualization representing development based on different contributing factors like female employment rate, fertility rate, vulnerable employment, birth rate, and death rate.

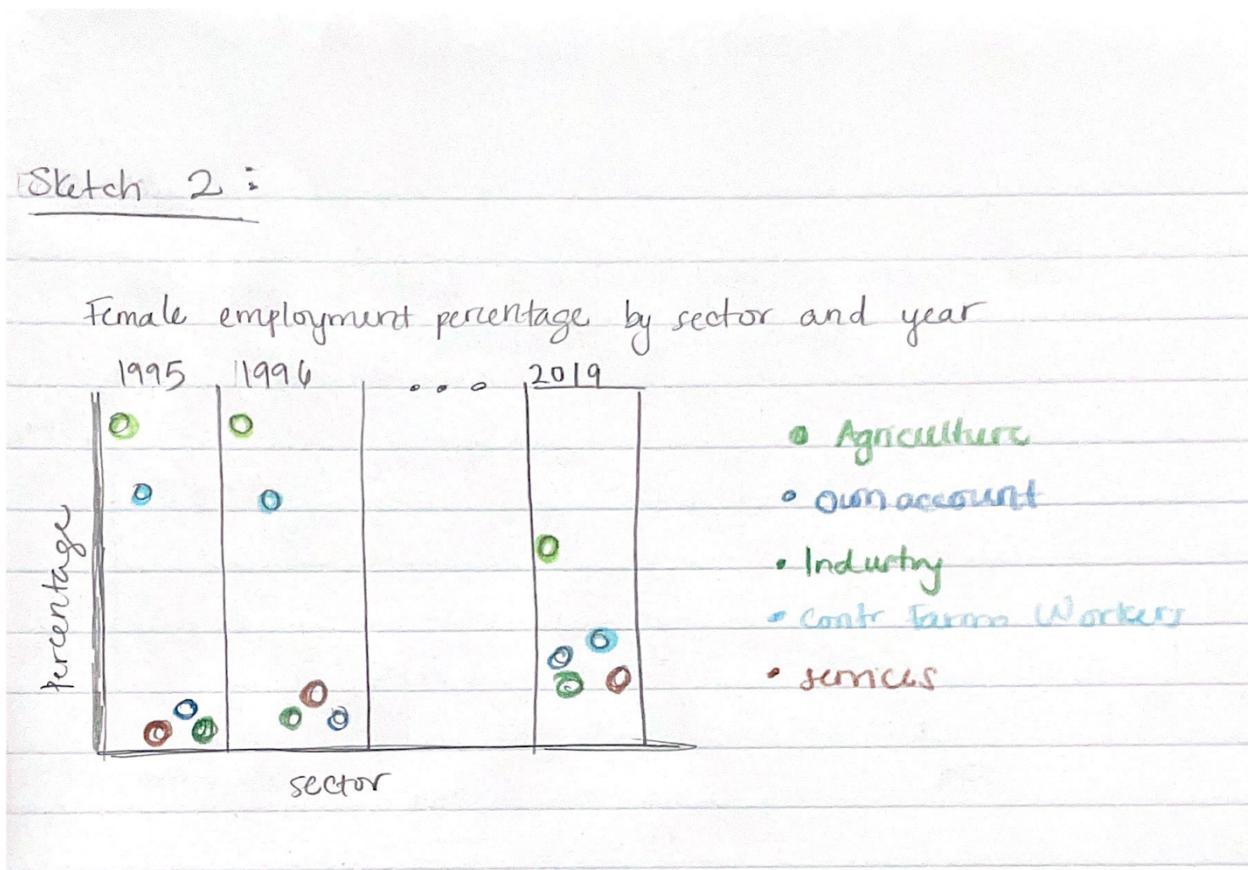
Sketch 1:

This visual was motivated by the idea that population pyramids are good indicators of country development over time. Aside from birth rate and death rate, I thought it would be interesting to look at fertility rate and the ratio of female labor force participation to male labor force participation rate. My goal here is to show that an increase in the ratio of female to male labor force participation is highly correlated with a decrease in fertility rates, birth rates, and death rates.



Sketch 2:

I want this graphic to show the breakdown of sectors that female employment percentage occupies. This would show me which industries have higher female labor force participation and how these breakdowns change over time. As the country develops, I would hope to see these point converging closer to the 50% mark. I had trouble deciding whether or not to include own account workers and contributing family workers but I thought it made the most sense to keep them in. I wish I had a variable to display education levels by year so that the sizes of the circles could correspond to that, so I am considering looking for more data to add in regarding female education rate.



Sketch 3:

For this visual, I aim to show the inverse relationship between percentage of female wage and salaried workers and vulnerable female employment percentage. I also want to depict fertility rate as a third variable but am unsure of whether to show that as size or color. In the sketch below, it is encoded as size. It also might be interesting to include some other features here as more plots, however, I haven't decided which features would work best yet.

