What Influences the Decision to Have or Not Have Children?

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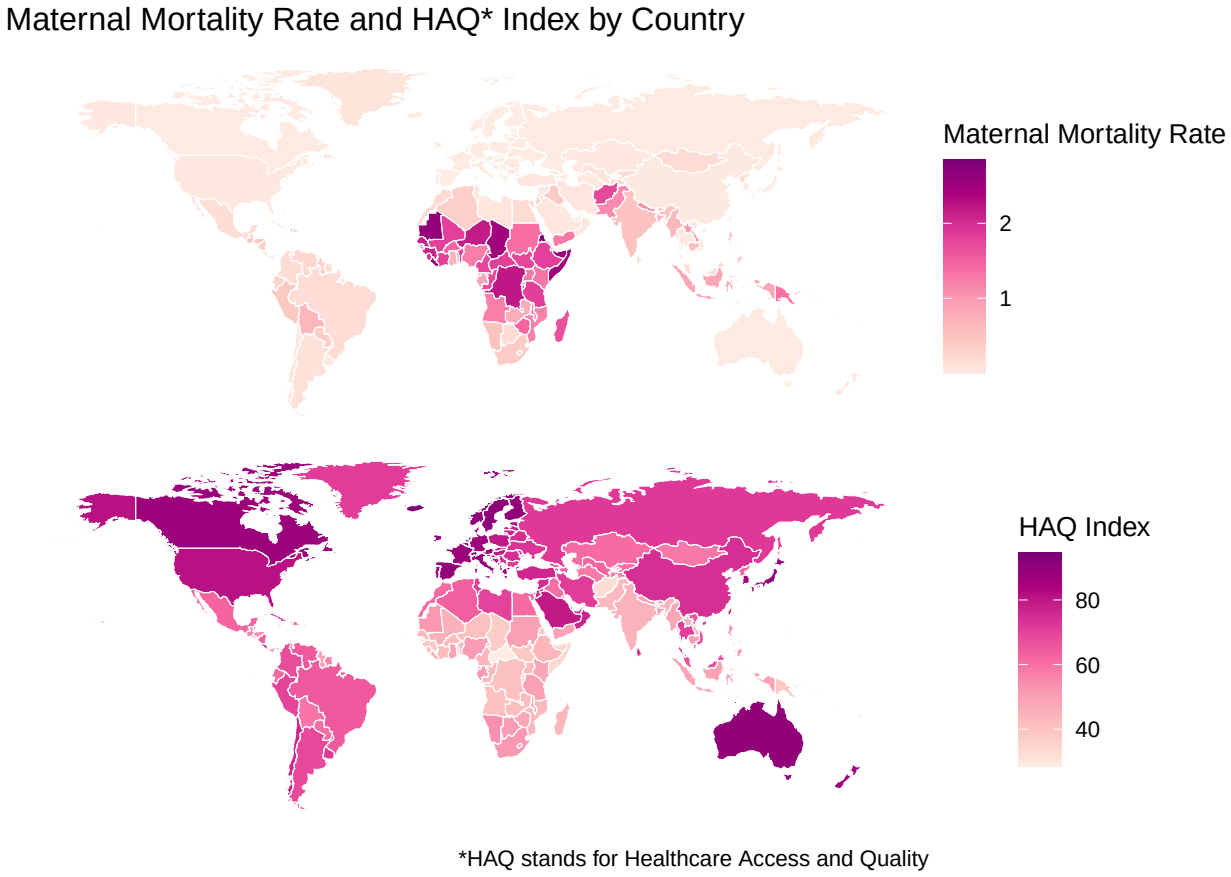
5/8/2022

There are many reasons why women all over the world choose not to become pregnant and have children. Across different geographies, populations, and cultures, these reasons may be financial, social, physical or otherwise. This report aims to help visualize the reasons why women may not want to have children or become pregnant.



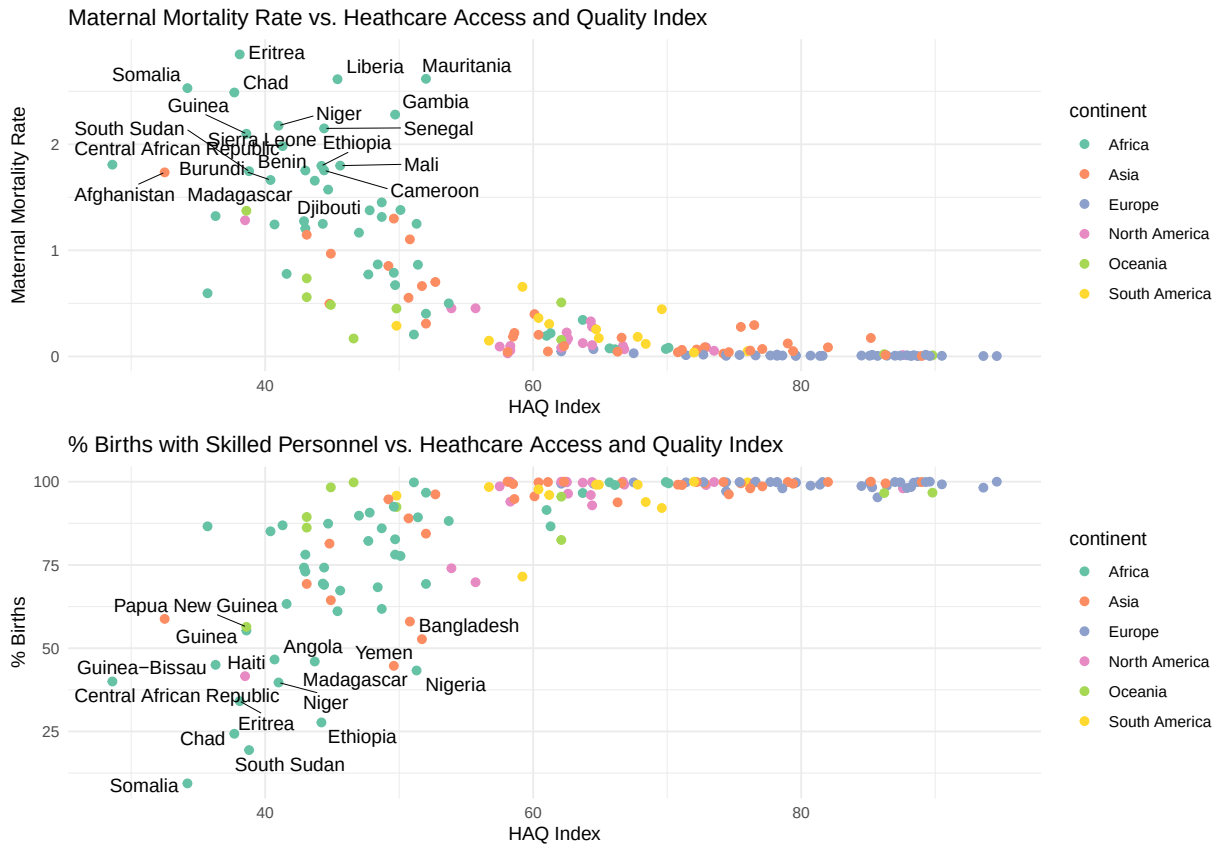
Access to Quality Healthcare

Though maternal health outcomes are improving by the day, huge disparity still exists in different areas of the world. Lower- and middle-income countries do not have the same access to quality healthcare facilities or medical professionals as upper-income countries.

The world maps shows how countries with lower Healthcare Access and Quality (HAQ) Indexes (represented by a lighter pink) are largely also associated with higher maternal mortality rates (represented by larger

circles). The largest circles are also the lightest pinks, whereas the dark pink circles are much less perceptible.

The relationship between HAQ Index and Maternal Mortality Rate is also shown in the following scatterplot. Additionally, the relationship between HAQ Index and Birth Attendant Skill is also explored. Birth Attendant Skill refers to the percentage of births that were attended by skilled medical professionals.

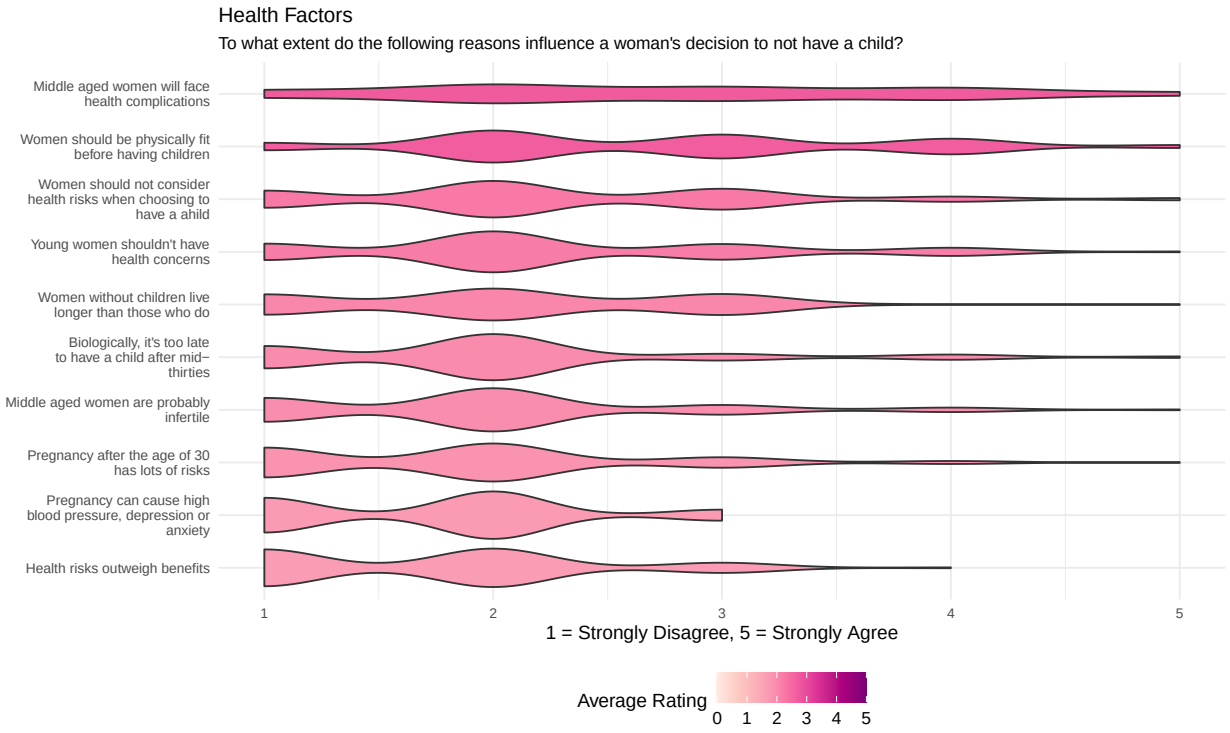


Both plots show how lower quality healthcare and limited access to it is related to both factors influencing birth outcomes (% skilled attendants) as well as the outcomes themselves (maternal mortality).

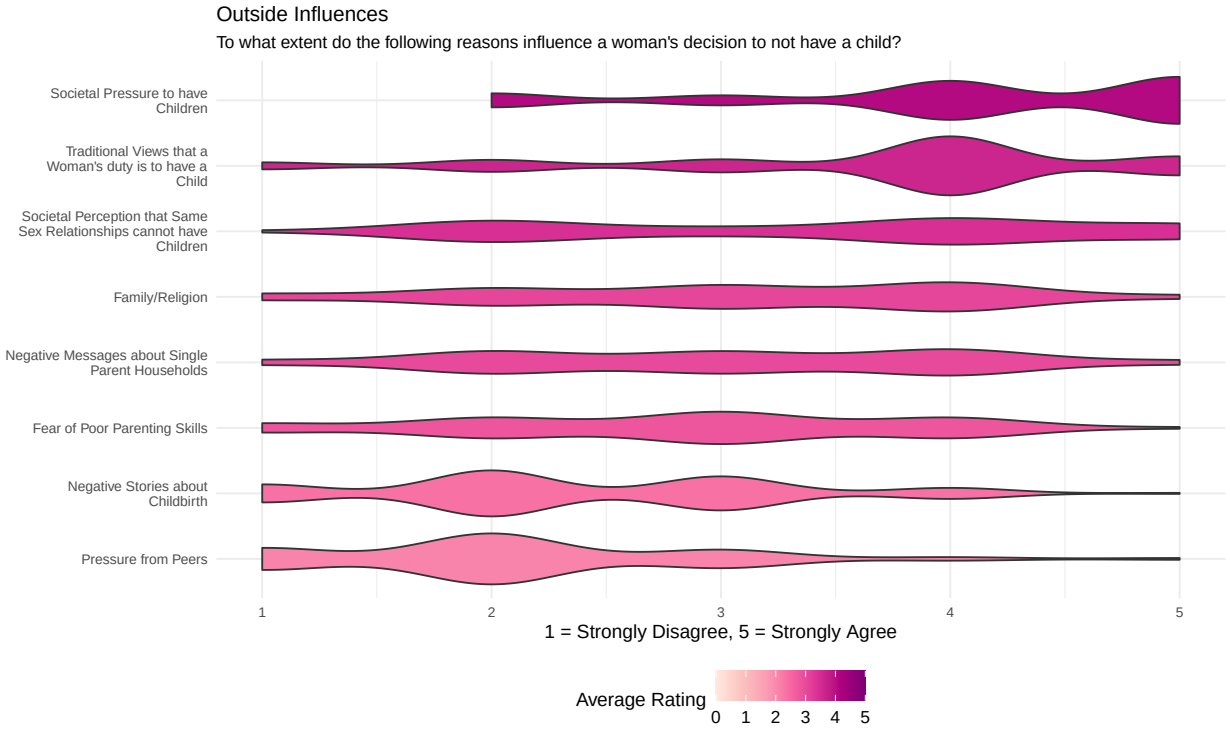
Social Attitudes Towards not Having Children

The Survey Data

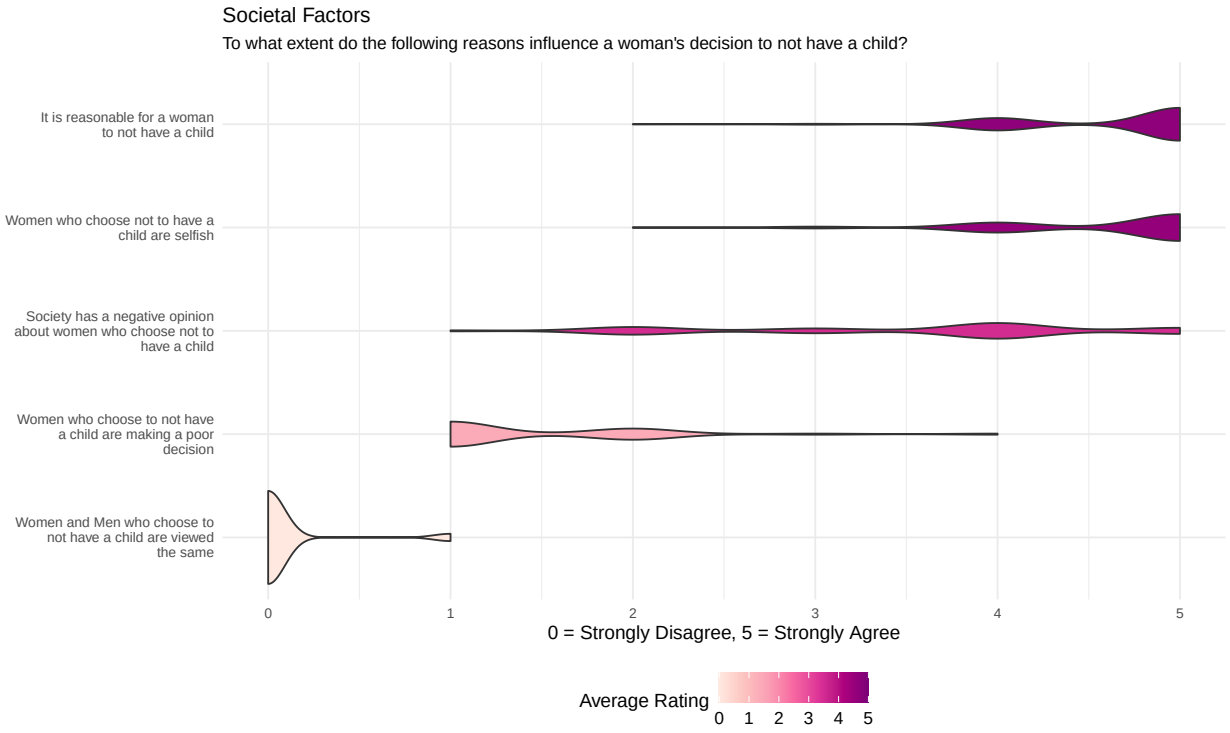
The following graphs visualize data from surveys to track societal attitudes towards having children. The survey data included the extent to which they agreed to various statements regarding societal attitudes towards having children.



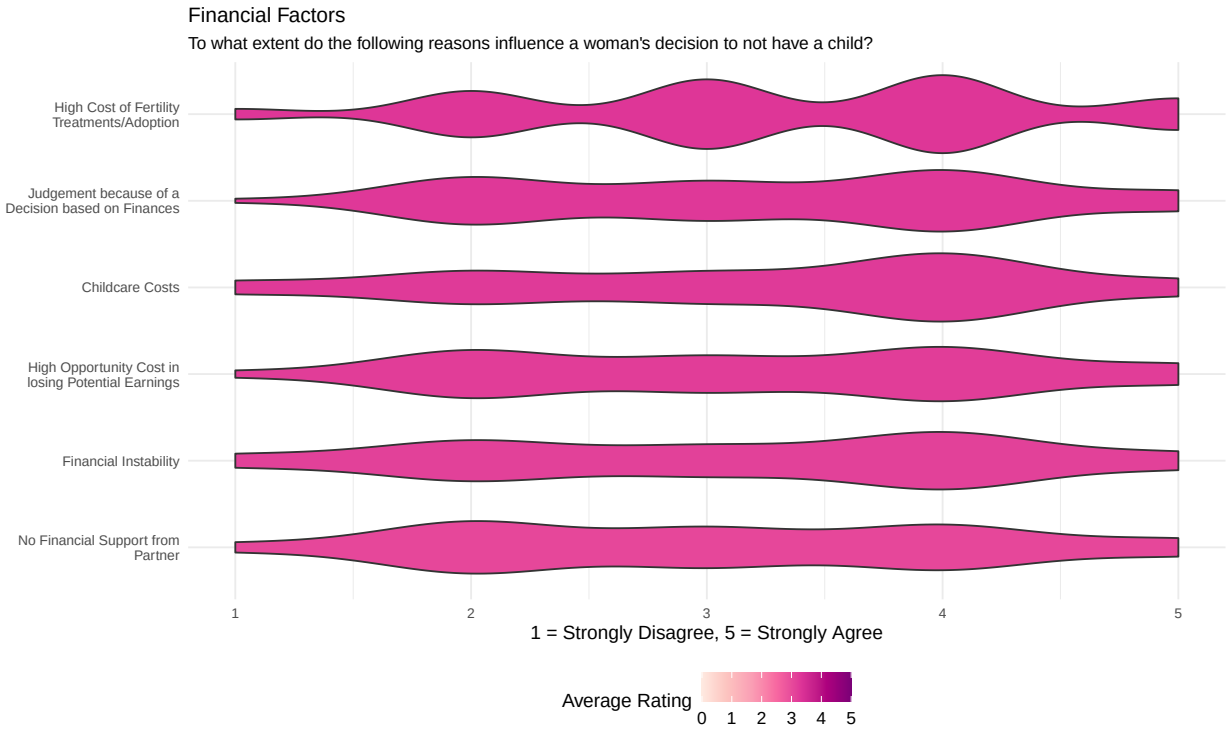
Respondents largely disagree with stereotypical health preconceptions one might have about pregnancy and birth.



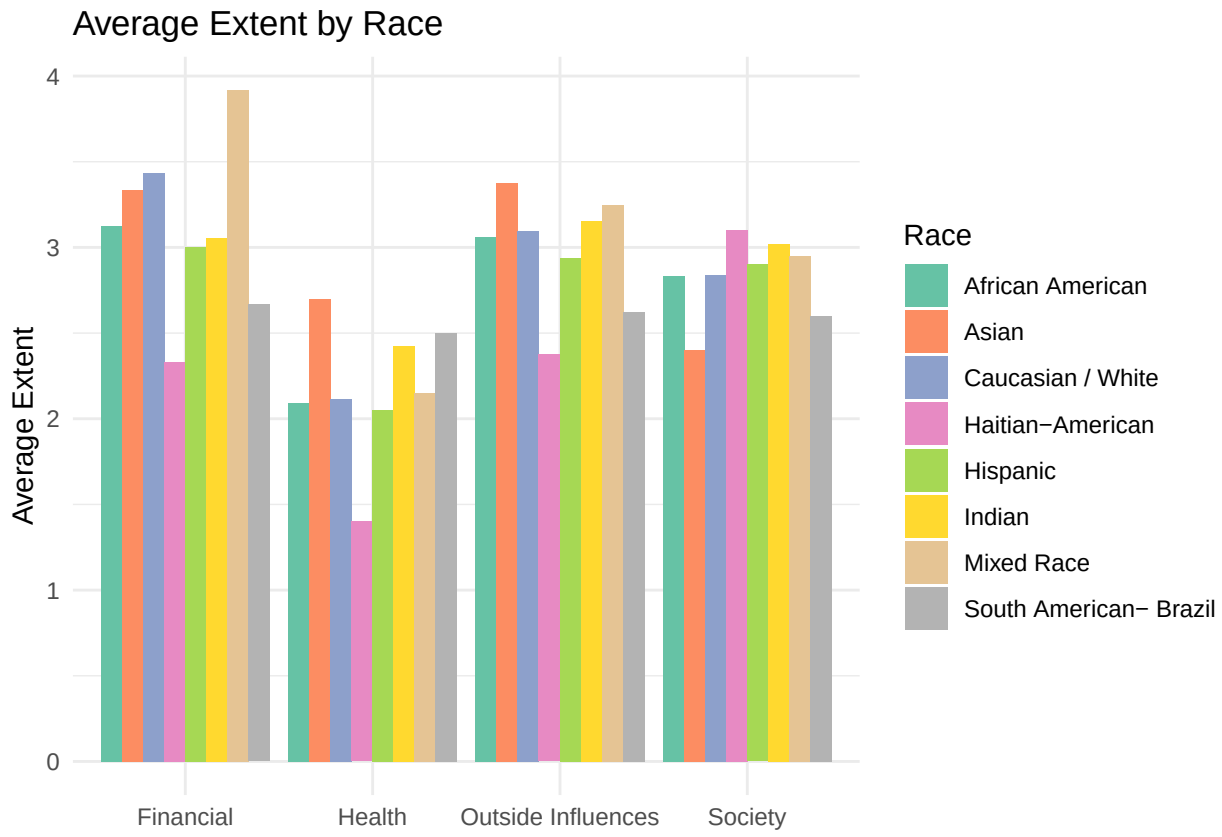
Societal pressure is a strong influence while more local, personal influences like peer pressure and negative childbirth stores are not.

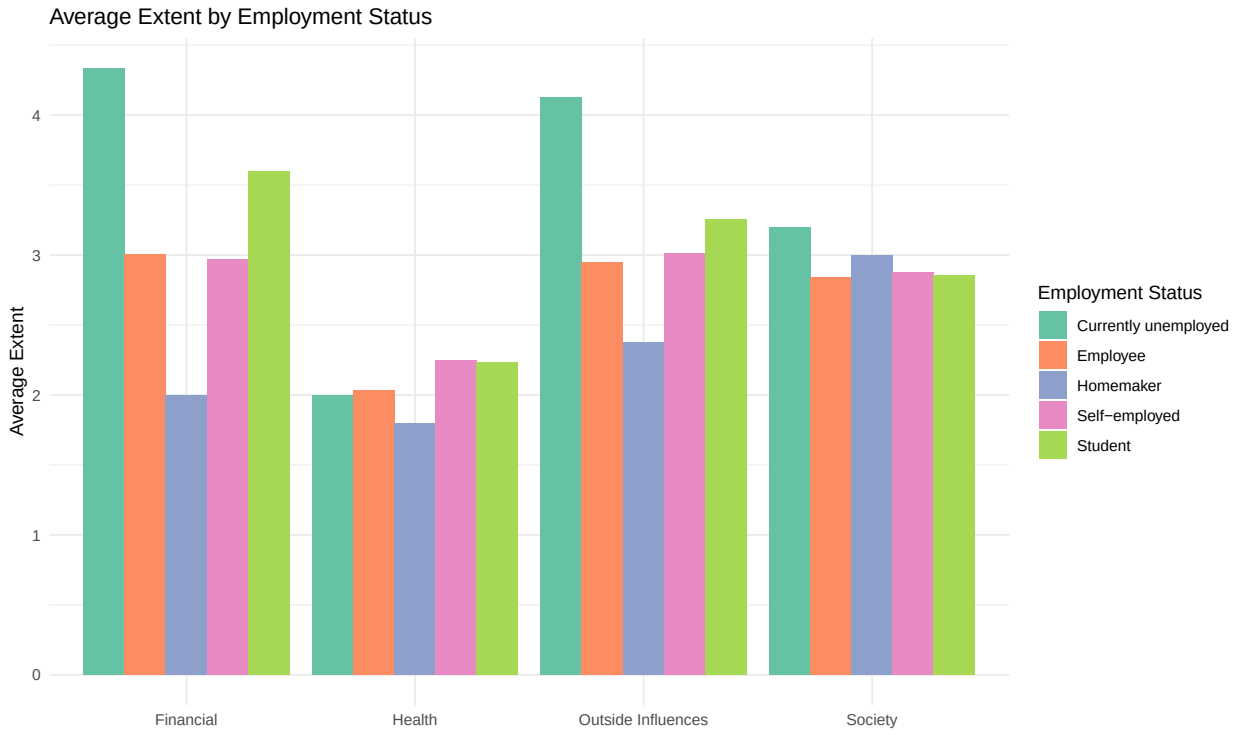


Responses regarding societal preconceptions were much more polarized than other categories. Nearly all respondents thought that men and women are not treated equally when they choose not to have kids, yet respondents also largely said women were selfish for not having kids. This corroborates that the societal pressure to have children is a strong factor for many women.



Financial factors had very high variance in responses. This is likely due to differences in respondents' socioeconomic status.





It is important to note that the respondents lived in New Jersey and therefore have a level of privilege regarding healthcare and birth outcomes compared to other areas of the world. This should be considered when evaluating these opinions. It is also important to consider that the racial and economical background based on employment status can have an effect on the way the results are evaluated.

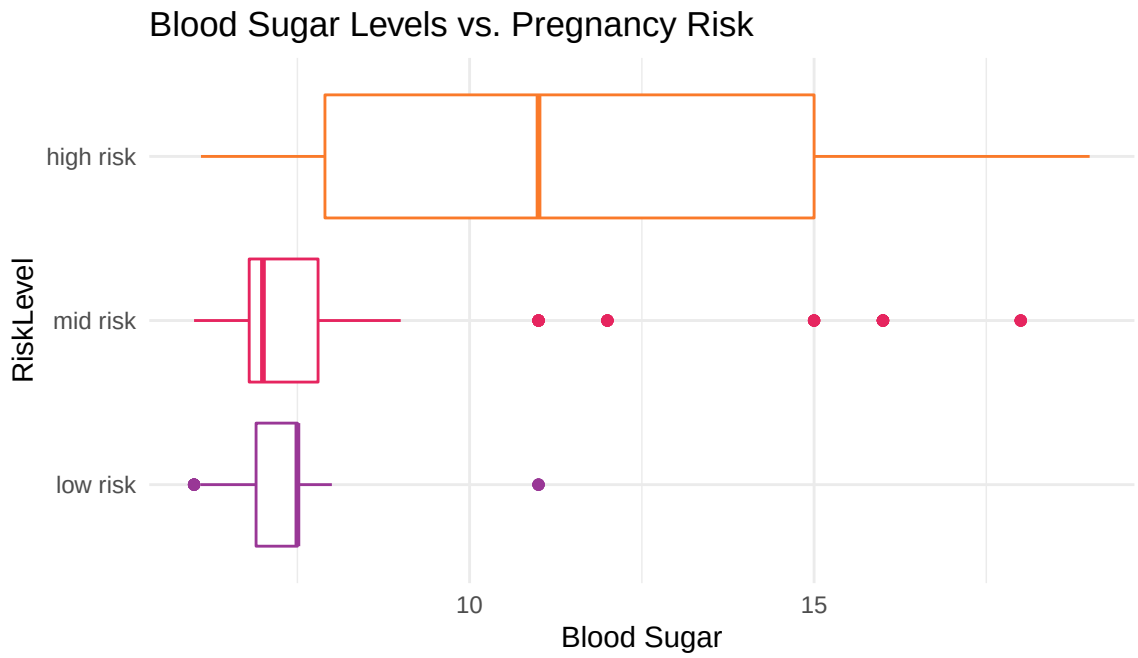
Health Risks Associated with Pregnancy

We examine how each factor is correlated in the matrix below.

```
##                    Age  SystolicBP DiastolicBP         BS    BodyTemp
## Age          1.00000000  0.41729214   0.3982341  0.4732994 -0.25663966
## SystolicBP   0.41729214  1.00000000   0.7871984  0.4254390 -0.28636626
## DiastolicBP  0.39823412  0.78719835   1.0000000  0.4238029 -0.25770201
## BS           0.47329943  0.42543897   0.4238029  1.0000000 -0.10376457
## BodyTemp    -0.25663966 -0.28636626  -0.2577020 -0.1037646  1.00000000
## HeartRate    0.06772672 -0.01832823  -0.0515417  0.1493514  0.09774947
## RiskLevel    0.26561788  0.39776788   0.3468261  0.5700965  0.16317726
##                HeartRate RiskLevel
## Age          0.06772672 0.2656179
## SystolicBP  -0.01832823 0.3977679
## DiastolicBP -0.05154170 0.3468261
## BS           0.14935140 0.5700965
## BodyTemp     0.09774947 0.1631773
## HeartRate    1.00000000 0.1903341
## RiskLevel    0.19033410 1.0000000
```

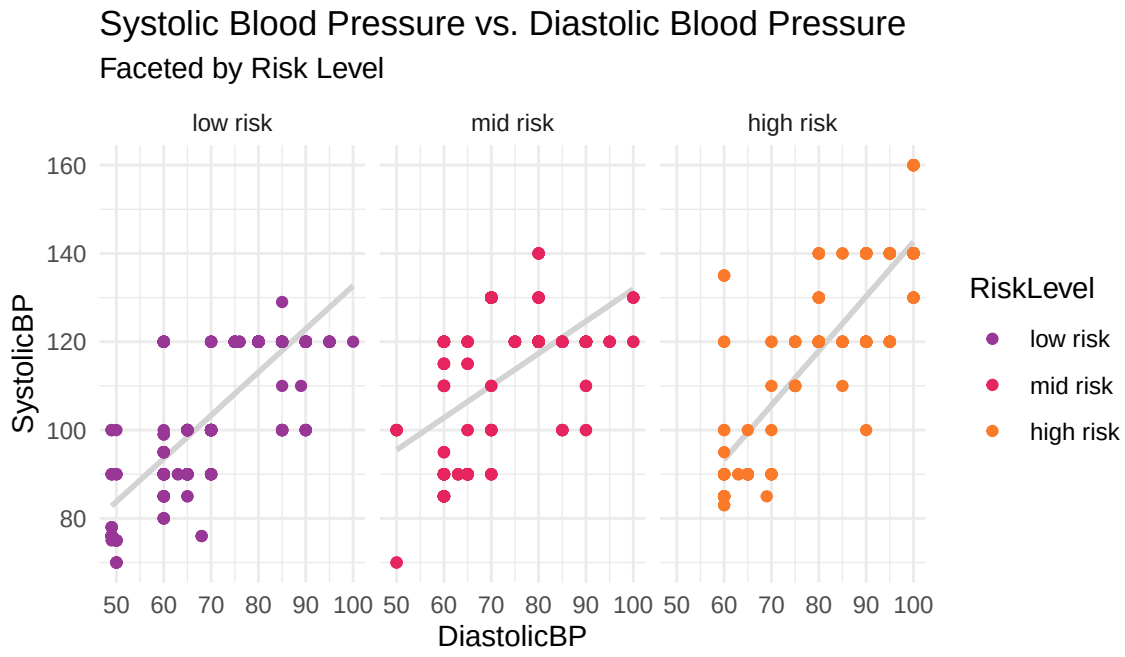
Since we are exploring what may influence maternal risk levels, we choose the three factors with the strongest relationships with risk as indicated by the correlation matrix: blood sugar, systolic and diastolic blood pressure, and age. We explore each of these relationships below.

To examine blood sugar values associated with the three levels of risk, we create a box plot.



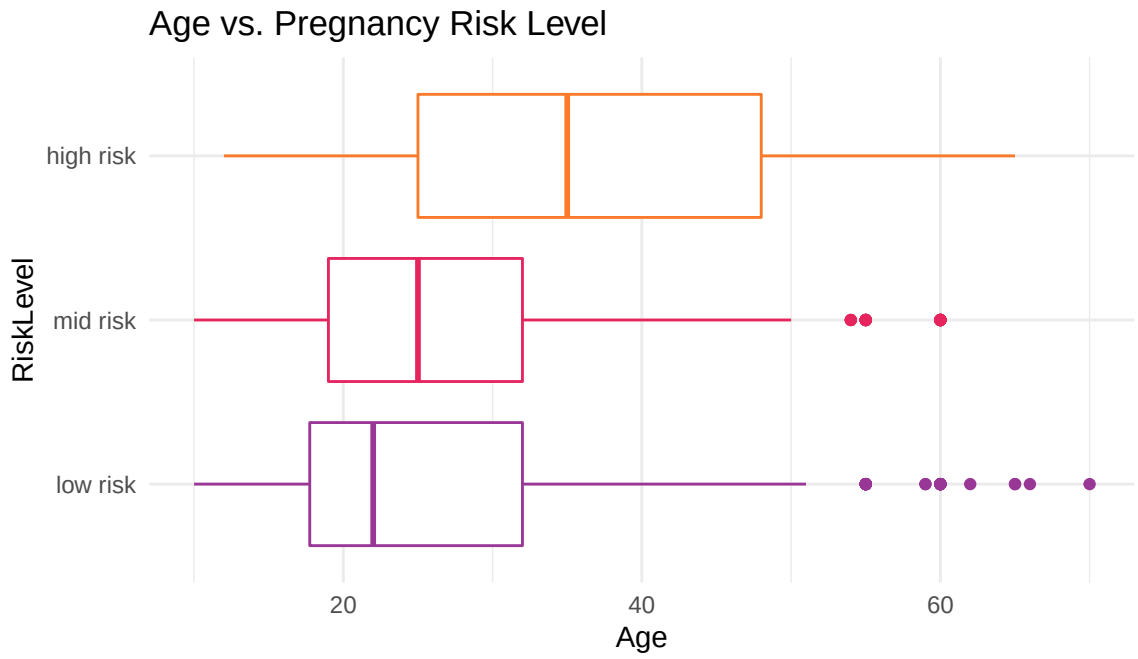
It is clear that higher blood sugar levels are correlated with higher pregnancy risk levels, as the high risk box plot has a much larger average and variance. This does not necessarily indicate cause, but does confirm the relatively large correlation value between blood sugar and risk level (0.47329943) seen in the correlation matrix.

Next, we examine blood pressure (both Systolic and Diastolic) and risk.



It is again clear that high values of these indicators correlates with increased pregnancy risk, though this correlation appears to be slightly weaker than blood sugar. This also confirms the direct relationship between Systolic and Diastolic blood pressure levels predicted in the correlation matrix, as indicated by the trend lines.

Finally, we examine age.



Age appears to be directly correlated with risk level. This is expected, as it is commonly assumed that older mothers are likely to have riskier pregnancies. There are some major outliers, however, that indicate that age is not the sole cause of increased risk. For example, there are several mothers over the age of 60 who are still classified as low risk.

It is important to consider how age might correlate with the other factors recorded in this data set, as it likely influences the other factors. In the above correlation matrix, age is positively correlated with every factor except body temperature, which we previously found to be of little influence on risk. Thus, age on its own may not be a cause of higher-risk pregnancies, but rather an older age is often linked with high values of other factors (blood sugar, blood pressure, etc.) that can increase maternal risk.

Conclusion

Overall, we saw that there were multiple aspects that relate to a woman's decision not to have a child. One major factor is accessibility to healthcare. A lot of women don't have proper access to healthcare which makes it difficult for them to seek proper medical help in relation to birth. Another major factor is the financial and societal aspects of pregnancy. Outside influences such as societal pressures and financial factors like fertility treatment and adoption costs have an impact on a woman's decision to become pregnant. Health factors are also a major influence, including high blood pressure and age, which can make pregnancy riskier and correlate with women deciding not to get pregnant and have children.

It's important to consider that there are certain limitations with out survey data, considering that its population is from New Jersey. This accounts for the specific racial distribution and employment status distribution that we see.

These visualizations can be useful aids to help women better understand the factors to consider when considering getting pregnant.

Visualizing these different factors is also a very relevant issue, considering the current discussions relating to the leaked decision to overturn Roe v. Wade. These are different aspects that can factor into a woman's decision when it comes to pregnancy and birth and our visualizations aid in understanding these influences.

If given the opportunity to develop this project, we would like to add survey data from other areas to be more representative of women in general. We would also like to consider other factors such as pregnancy and birth education for women in different areas. These visualizations can be used as an educational tool for women and considering the access that women have to other resources like this can have an affect on decisions about pregnancy and birth.

References

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