Weekly Report

**Update on Gompertz model**

A screenshot of text

Description automatically generated

After I feed the most up-to-date data to the Gompertz model, I get the best predicting parameters (a, b, c) as shown in the image above. I plug the parameters into Gompertz function and find that starting from time =4.6, the number of confirmed cases stays at 3.88. I scale my data to avoid creating infinite values. The means and standard deviations for my data are shown below (“center” refers to mean and “scale” refers to standard deviation).

A picture containing table

Description automatically generated

Then I use the inverse of the original function that I used to standardize my data to get the non- standardized values. The results indicate that about 11223 people in Maricopa County would be infected by day 226 (09/03/2020) if no action like keeping social distance is taken and the number would not change much since then.

**Update on Regression**

A screenshot of text

Description automatically generated

I run the regression again with more supply chain related data. The results show that the population density is significant in impacting the spread of this pandemic. One interesting new finding is that the number of major airports has a significant and positive impact on the spread at 90% confident level. If the number of major airports increases by 1, the number of infections is expected to increase by around 3104.