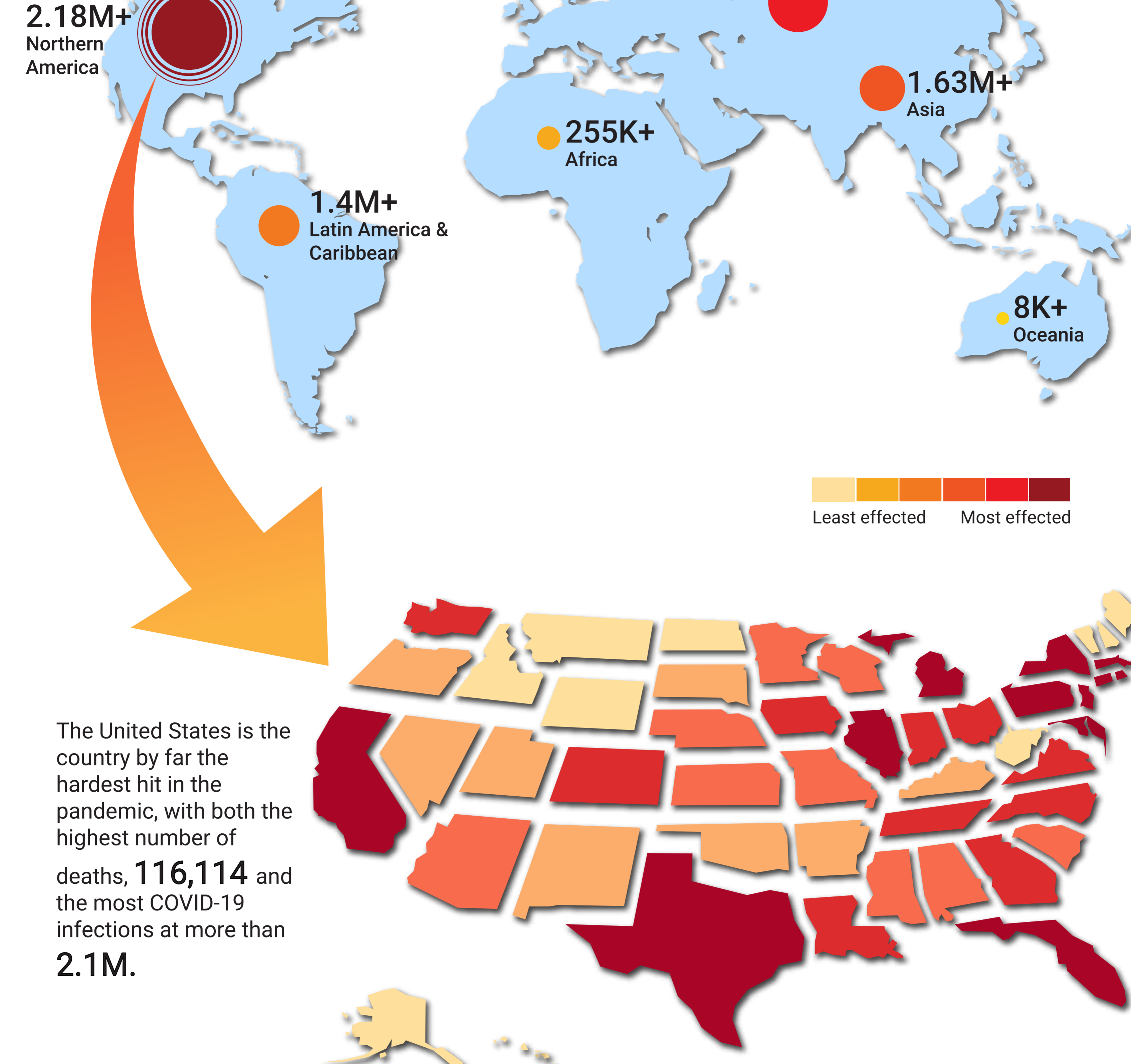


THE SPREAD OF COVID-19 IN NEW YORK CITY



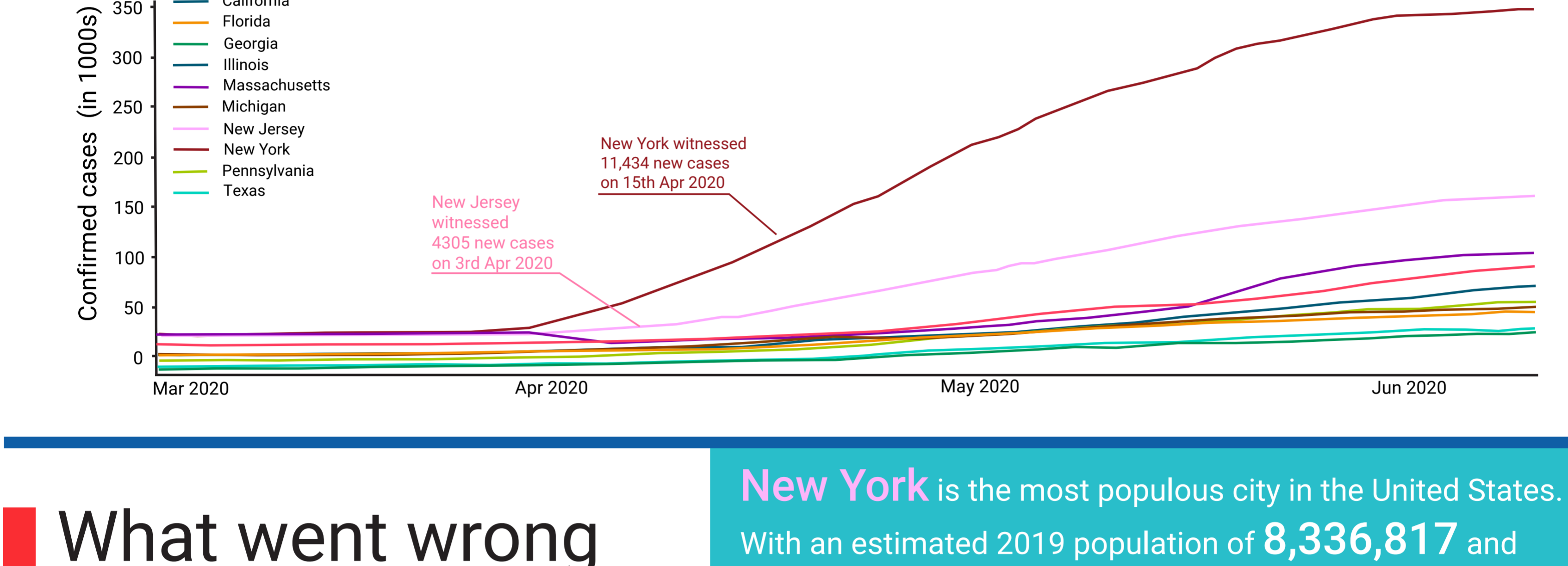
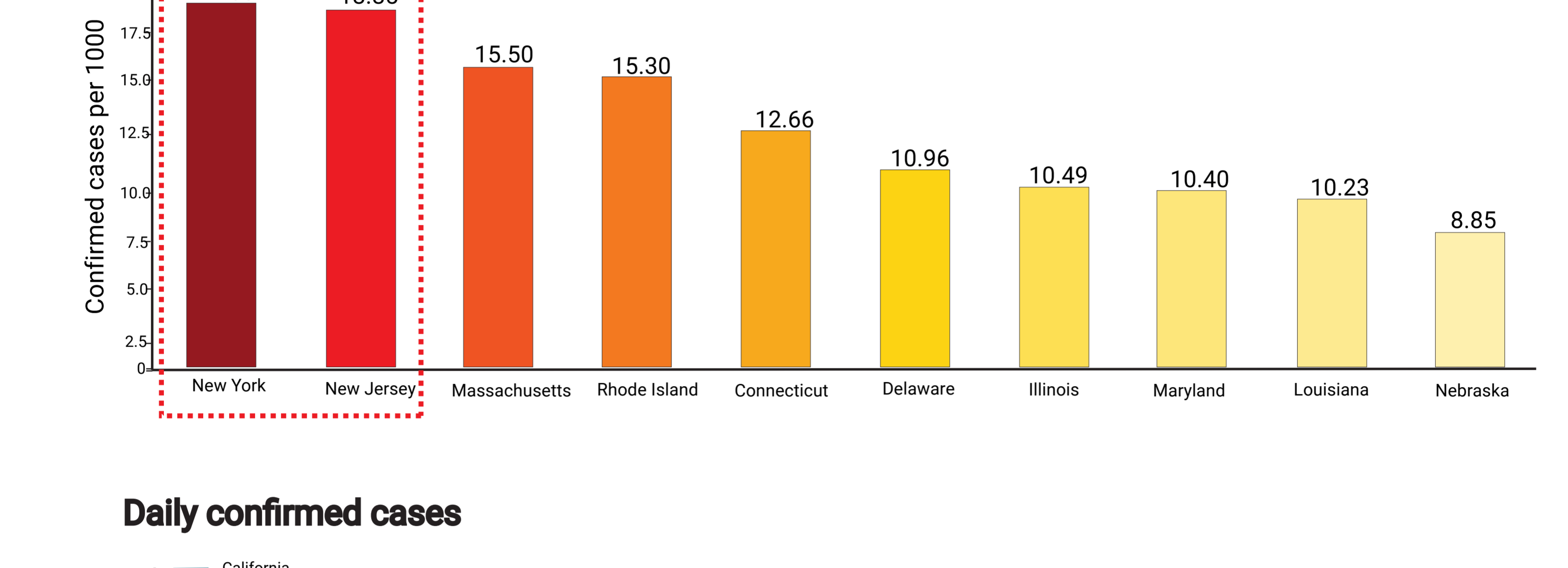
The pandemic's spread across the globe

As per the data till mid of June 2020, the leading economies of the world today were also leading on the COVID-19 cases. It remains interesting to track the reasons and drivers during the early stages of the spread.



Is there a disparity across states?

The spread has been in concentrated pockets like **New York & New Jersey** whereas, many states like **Maryland, Alaska, Louisiana & Florida** have been able to contain the spread.

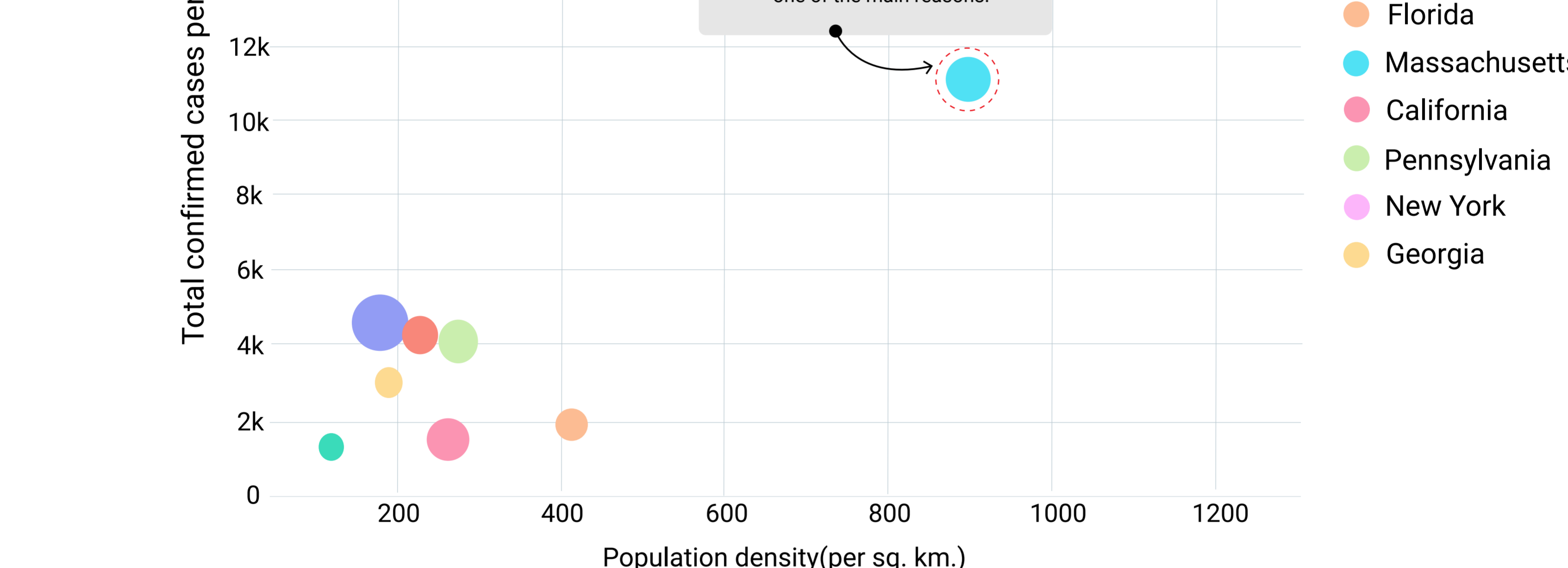


What went wrong for New York?

New York is the most populous city in the United States. With an estimated 2019 population of **8,336,817** and area of **784** sq.km. It is also one of the largest commercial, financial and trade centres in the North Americas.

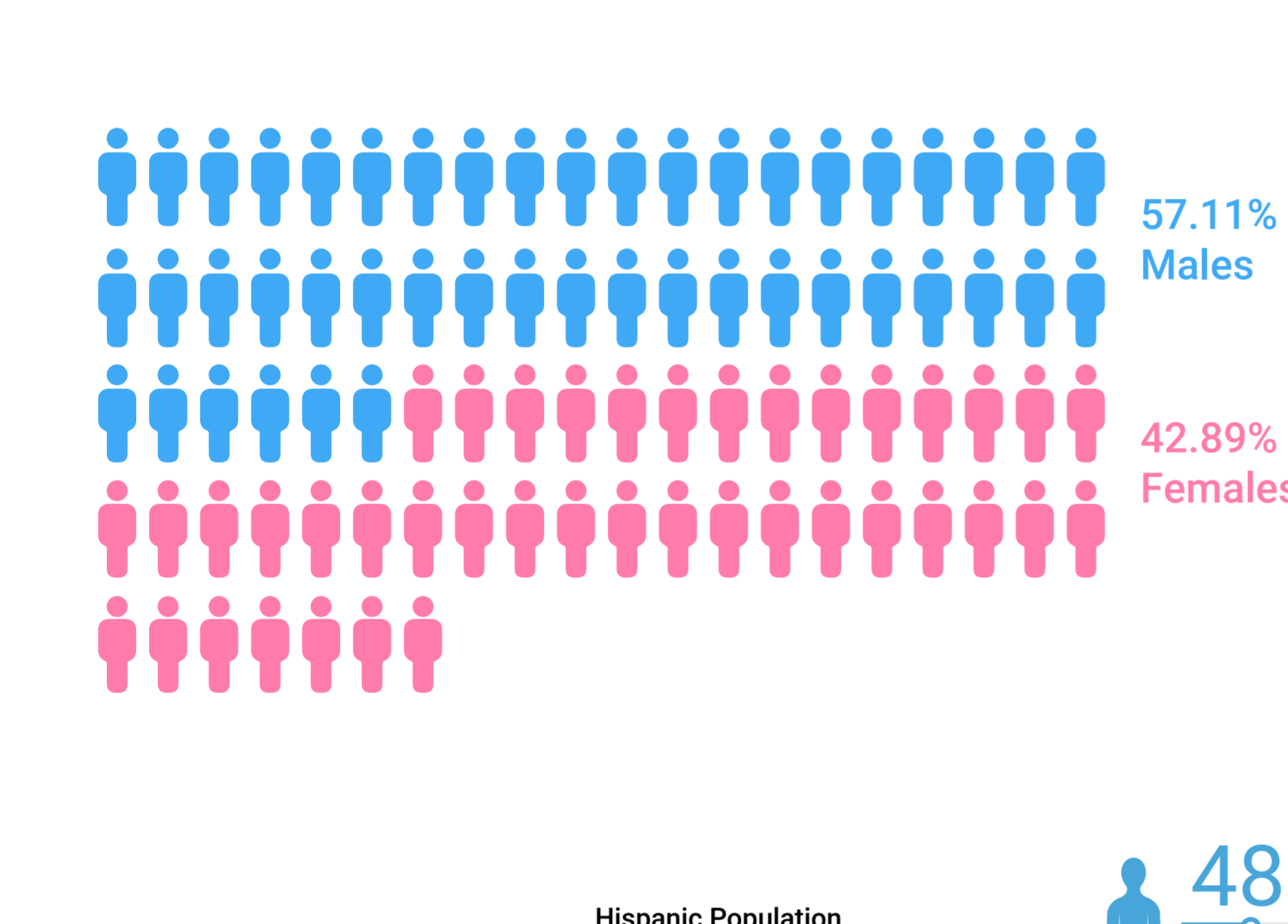
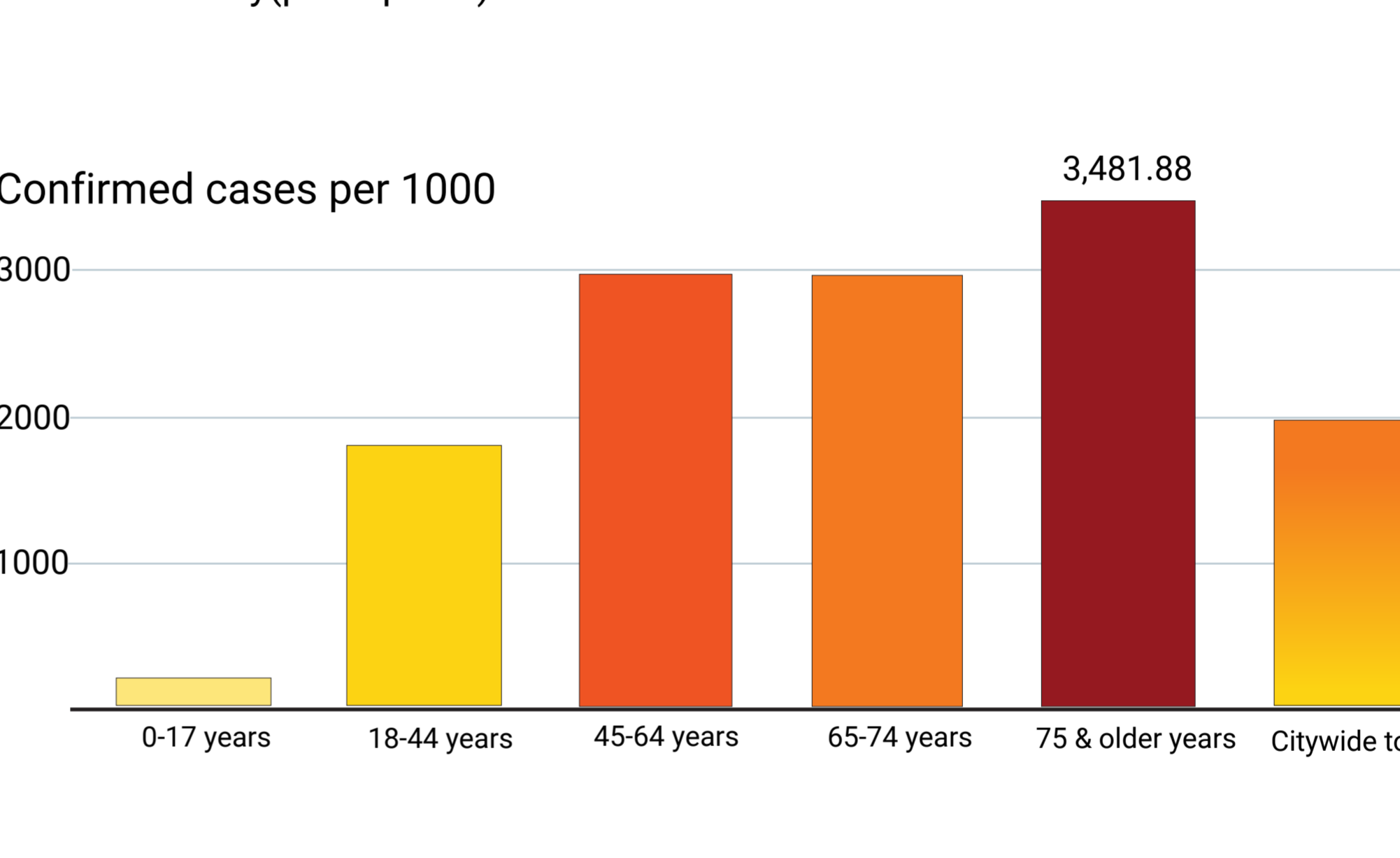
New York has reported the highest number of COVID-19 cases and deaths in the US and also accounts for **40%** of deaths in the country.

Hypothesis: Why does **New York** has such high number of cases? Is it the demographic difference, health status, mobility density or the economic composition that has led to the rampant increase?



Demographic composition

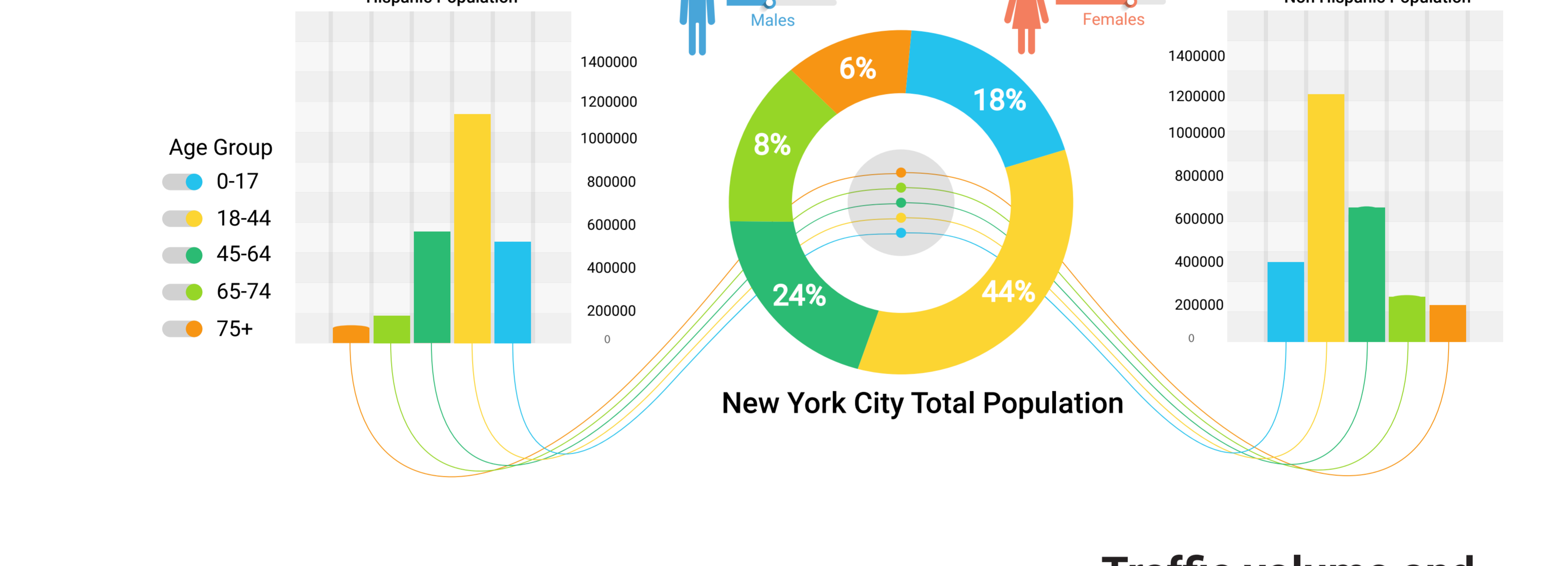
Despite New York being skewed towards the younger population, COVID-19 has impacted the old age group (60-80 years). Hence demography does not contribute to the high COVID-19 cases in New York.



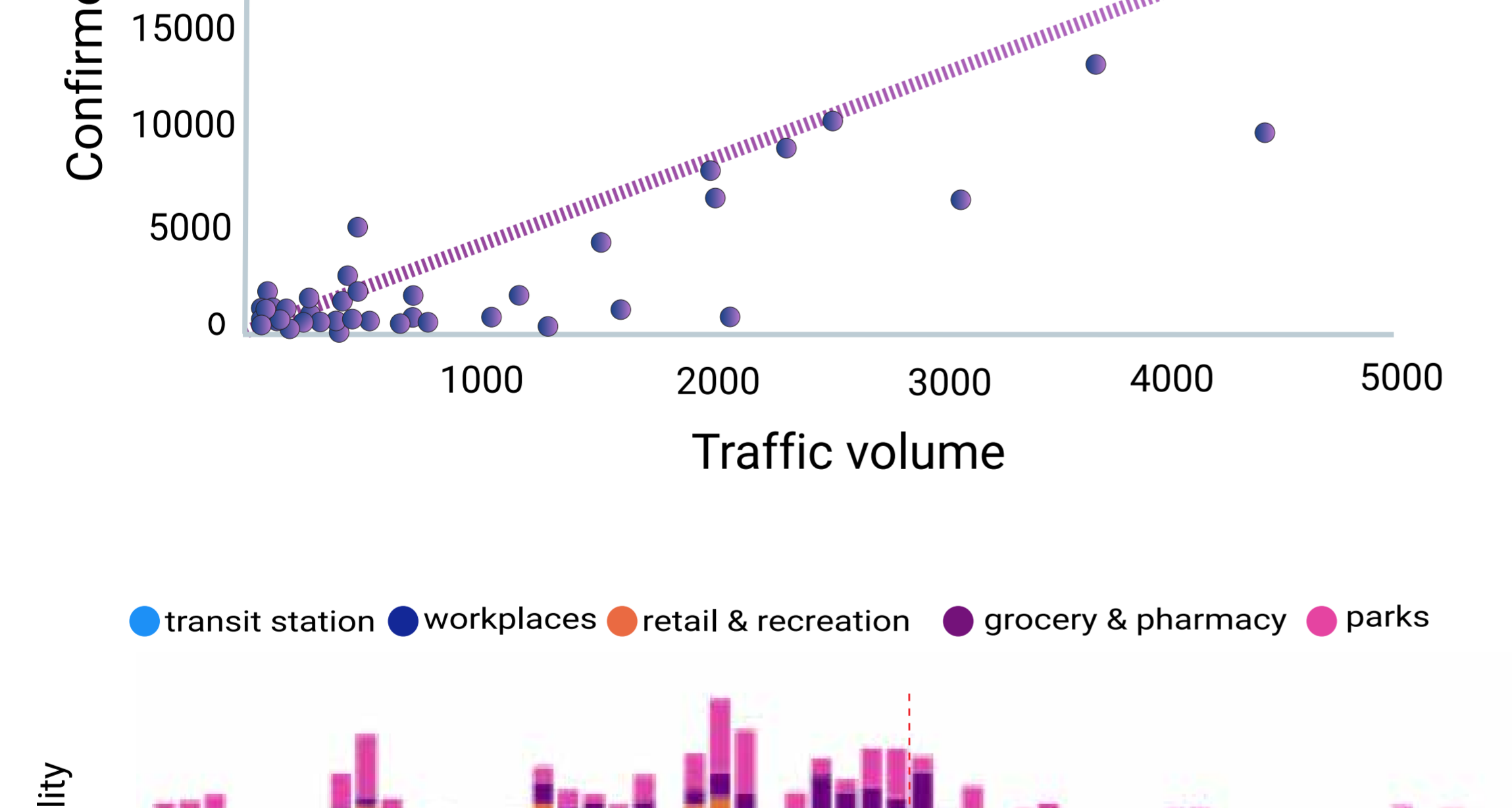
New York's mortality and population

Outdoor activity is a strong precursor for susceptibility towards the virus, as in New York male vs. female population is not much varied. In-spite of that, **Males** have a higher mortality in New York.

On the basis of the mortality and population, we cannot correlate to the confirmed cases.



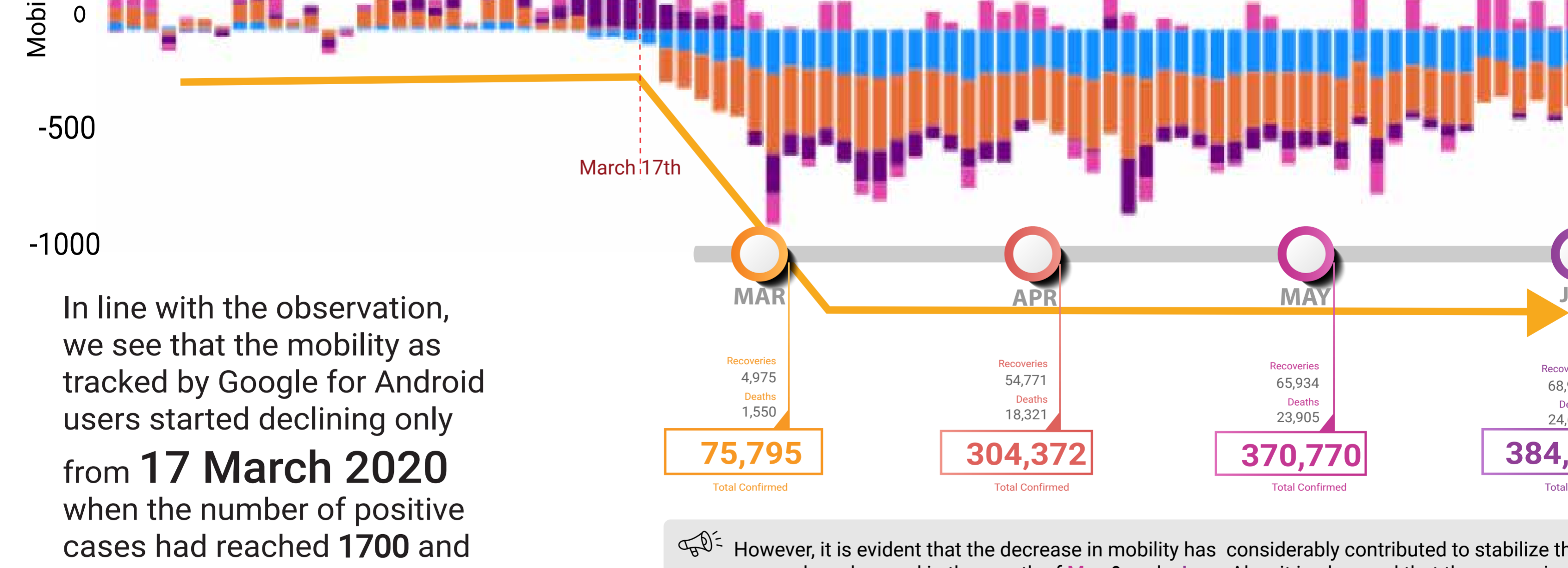
County level analysis for NYC during initial Covid-19 phase



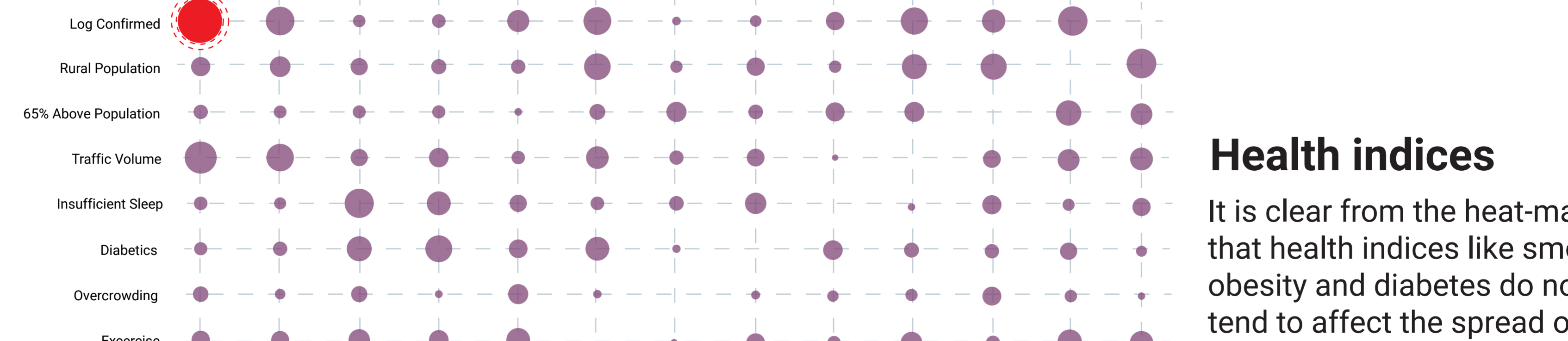
Traffic volume and COVID-19

A certain correlation is observed between the number of confirmed COVID-19 cases and the traffic volume (**78%**).

The lock-down across New York was late in comparison to states in countries like India/Korea/China/Japan. Hence asymptomatic cases that were carrying the virus might have spread leading to a rapid increase in infections in NYC.



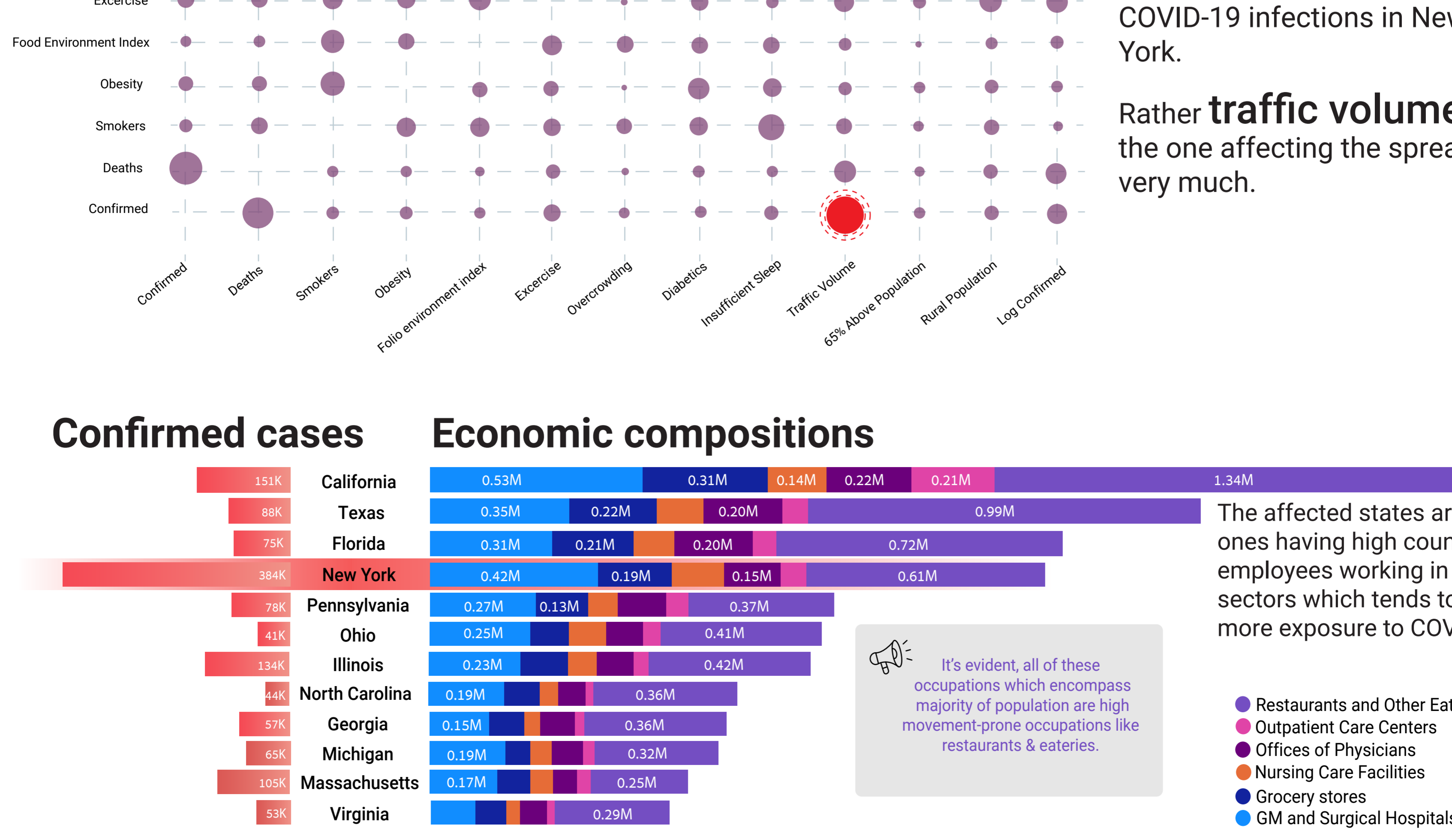
In line with the observation, we see that the mobility as tracked by Google for Android users started declining only from 17 March 2020 when the number of positive cases had reached 1700 and the state had witnessed an increased spread of the virus.



Health indices

It is clear from the heat-map that health indices like high smoking, obesity and diabetes do not tend to affect the spread of COVID-19 infections in New York.

Rather **traffic volume** is the one affecting the spread very much.



It's evident, all of these occupations which encompass majority of population are high movement-prone occupations like restaurants & eateries.

Conclusion

Learnings from the first three months of the pandemic: New York being one of the busiest and most economically active states has been highly impacted by the pandemic due to the following reasons:

- Mobility
- Population density
- Traffic volume
- Economic composition

However the demographic profile and health indices have no impact on the spread. It is a similar scenario in other states in the USA. Lower the mobility and density, slower has been the spread.