

# **Analysis of COVID-19 & Mobility During The Lockdown and The Rise of Daily Tests**

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# Why this datasets

- Mobility datasets
  - How to slow the spread of COVID-19?
  - How effective mobility reduction is at reducing the spread?
  - Decide when the restriction can be lifted
  - At what percent change in mobility the infection bounce back?

Source: <https://www.theguardian.com/science/2020/may/28/how-will-no-10-decide-to-ease-lockdown-and-reopen-schools>

# Why this dataset

- COVID-19 testing datasets
  - Contain the outbreak of covid-19
  - Isolating known cases prevents more contacts.
  - lower the overall number of cases
  - Allow governments and health authorities to understand how prevalent the disease is and how it is evolving

Source: <https://www.weforum.org/agenda/2020/03/coronavirus-covid-19-testing-disease/>

# Data questions

- Are there correlations among mobility reduction, daily positive tests, and daily total tests?
- Which mobility has decreased the most?

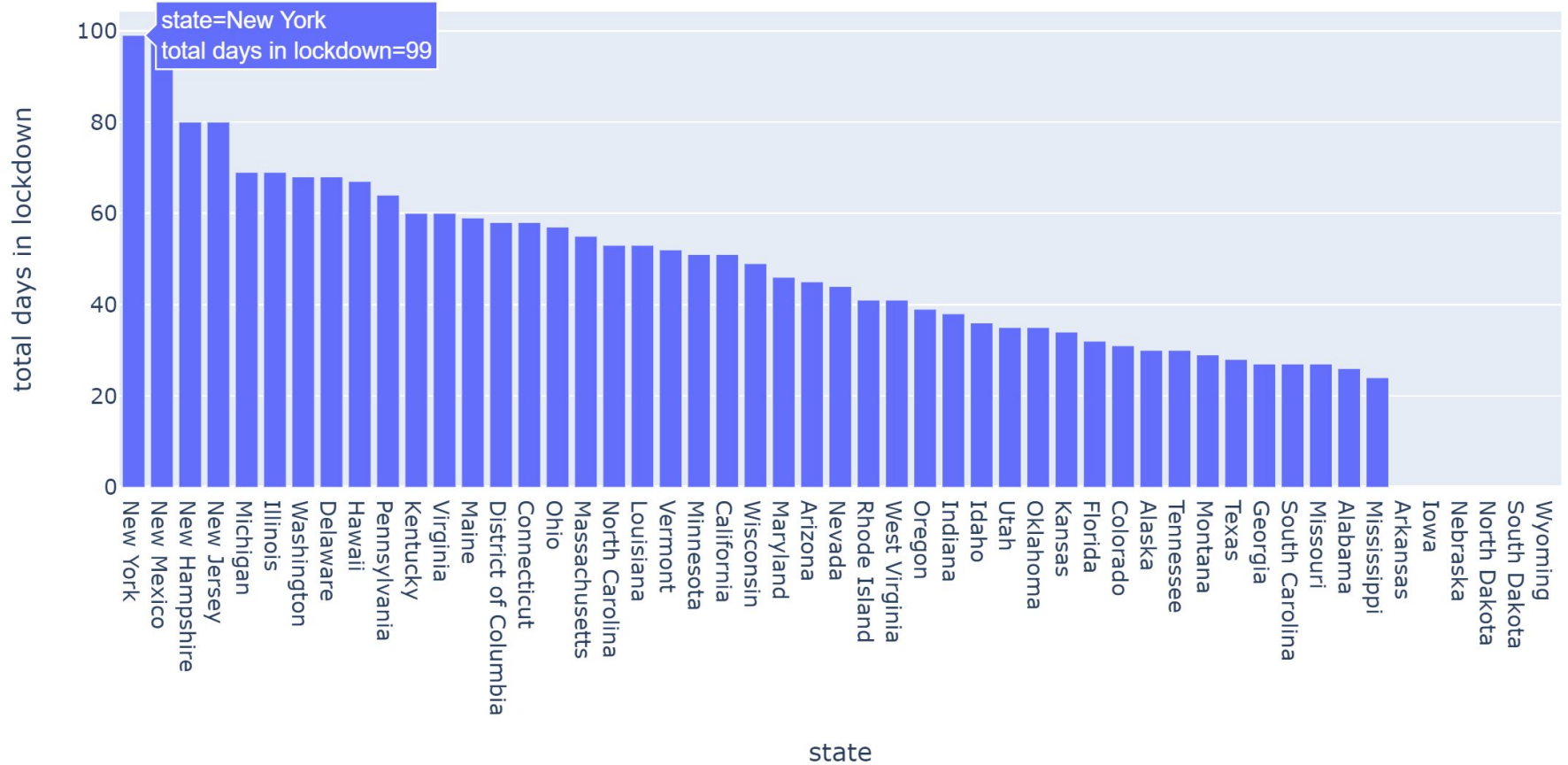
# Approach

- Import data
  - COVID-19 all states and counties tracking, Google global mobility, and lockdown datasets
- Clean and combine the datasets
  - Mobility as the left dataset in the join
  - Mobility dataset contains fewer records for counties, therefore after the joining, it created lost in counties records from the COVID-19 dataset, for example, Tennessee has 96 counties, after they join is 93
- Explore the data
- Visualization
  - Python tools to answer the questions
  - Additional power bi dashboard

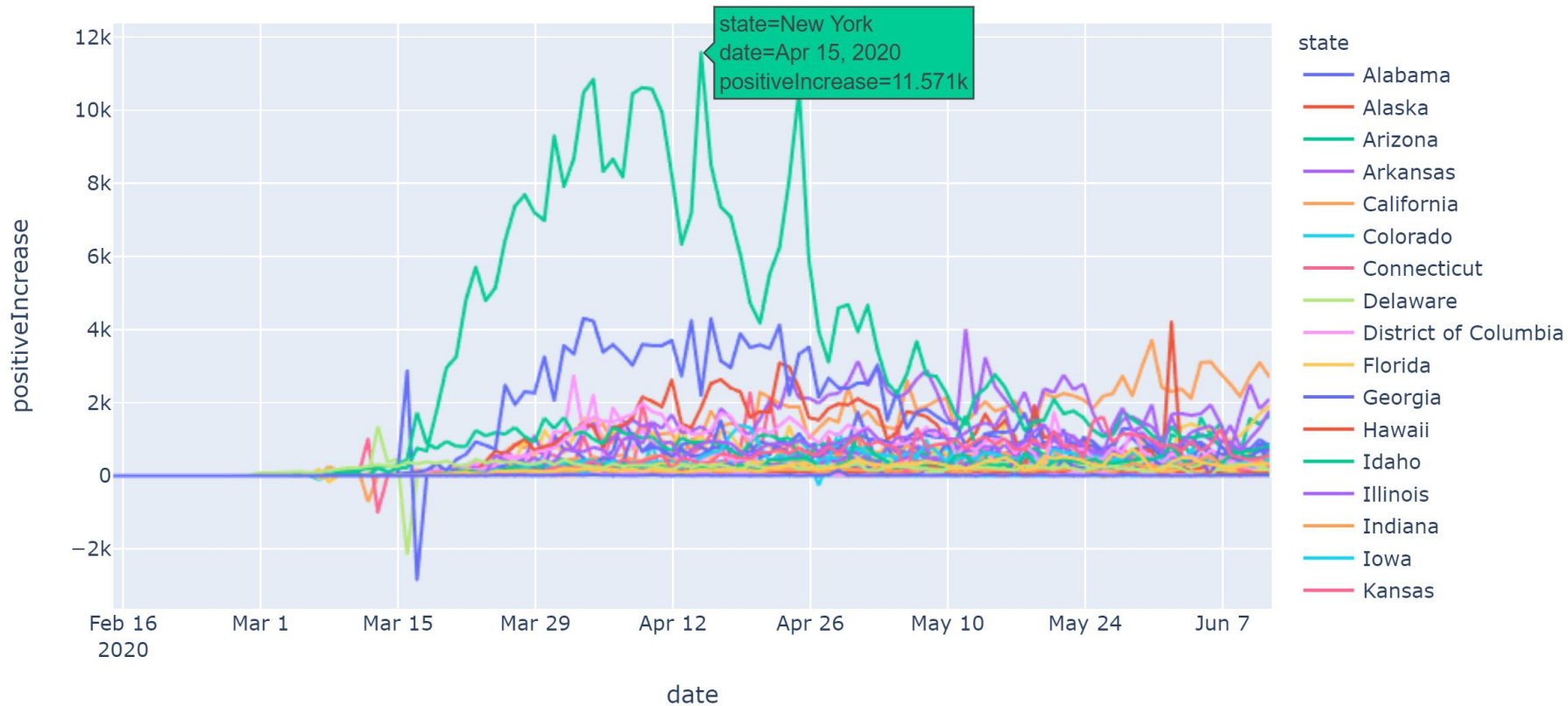
# General observation

- Total lockdown days by state
  - State had the longest or the shortest duration of lockdown
  - State did not issue stay at home order.
- Daily positive tests across all states
  - State had the highest daily positive tests
- Total tests in every state
  - State with the highest total tests

## Total lockdown days by State

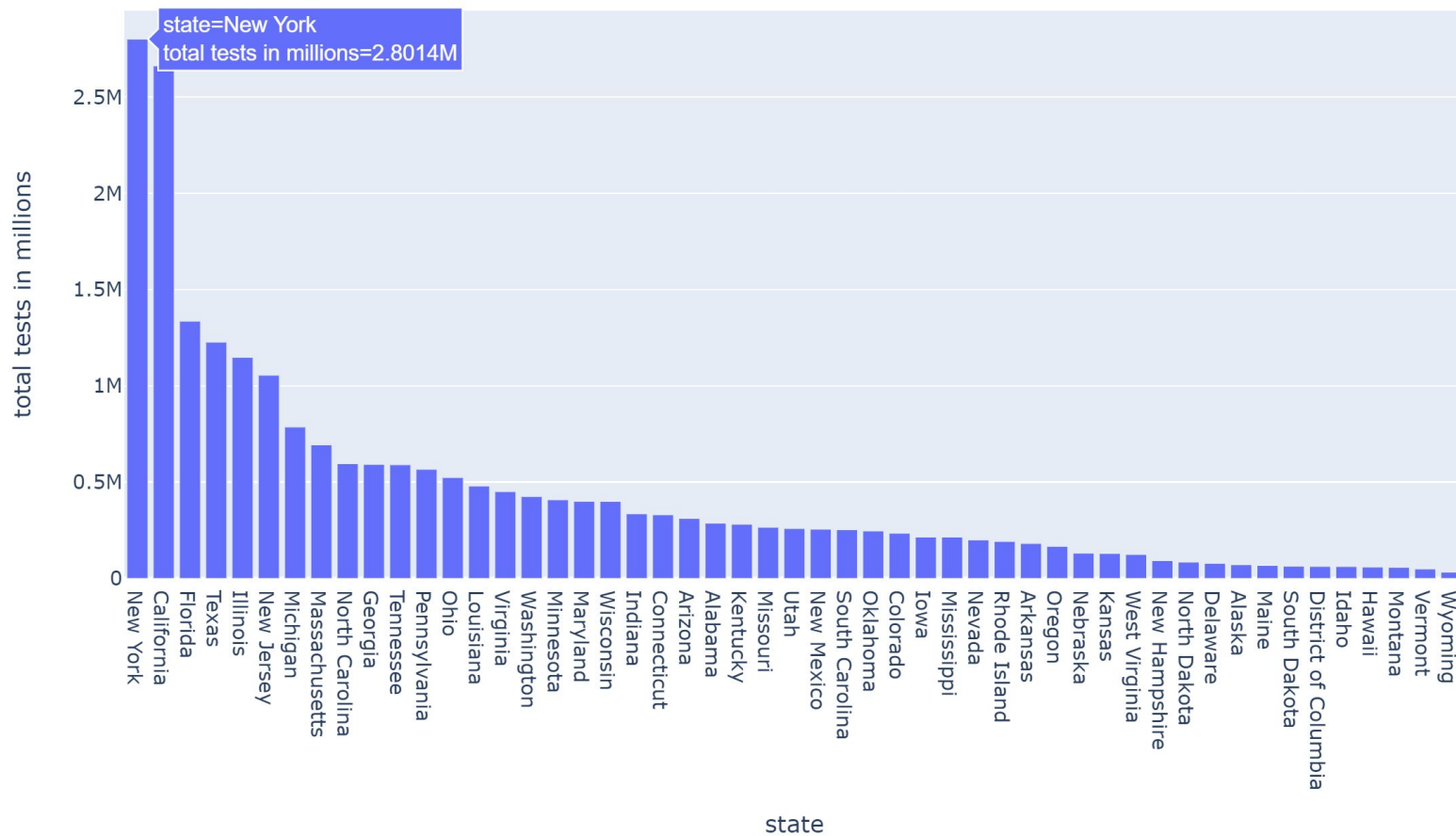


## Daily positive tests across all states





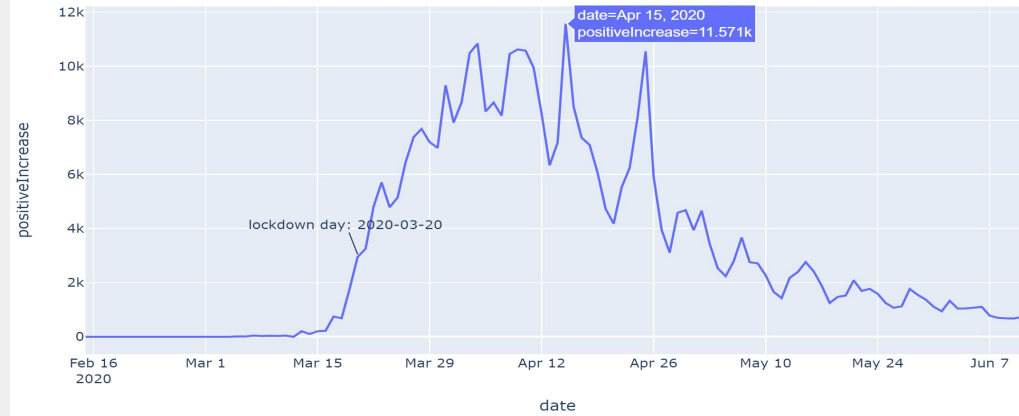
## Total Tests by State



# New York

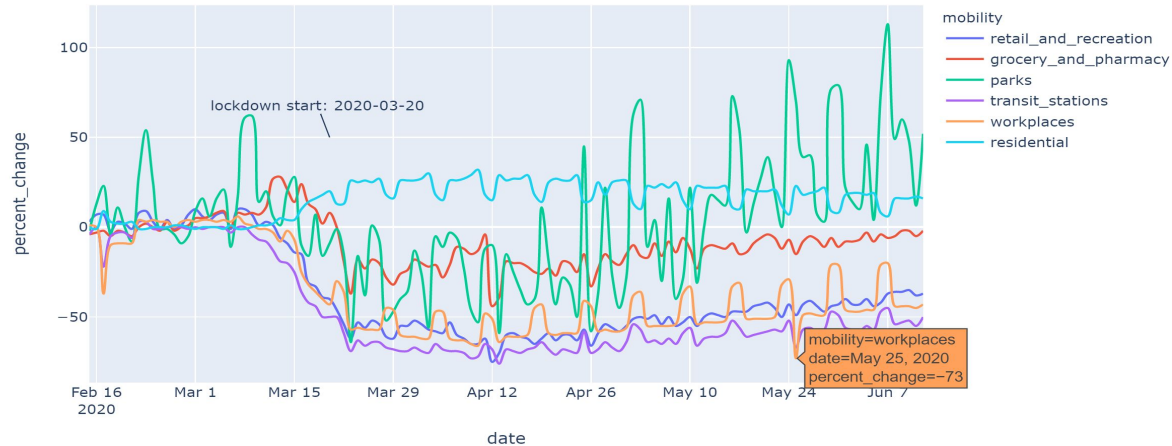
- Daily positive tests and Mobility percent change
  - Correlation after the lockdown day
  - The highest percent change in mobility
- Daily total tests vs positive tests

Daily positive test in New York state

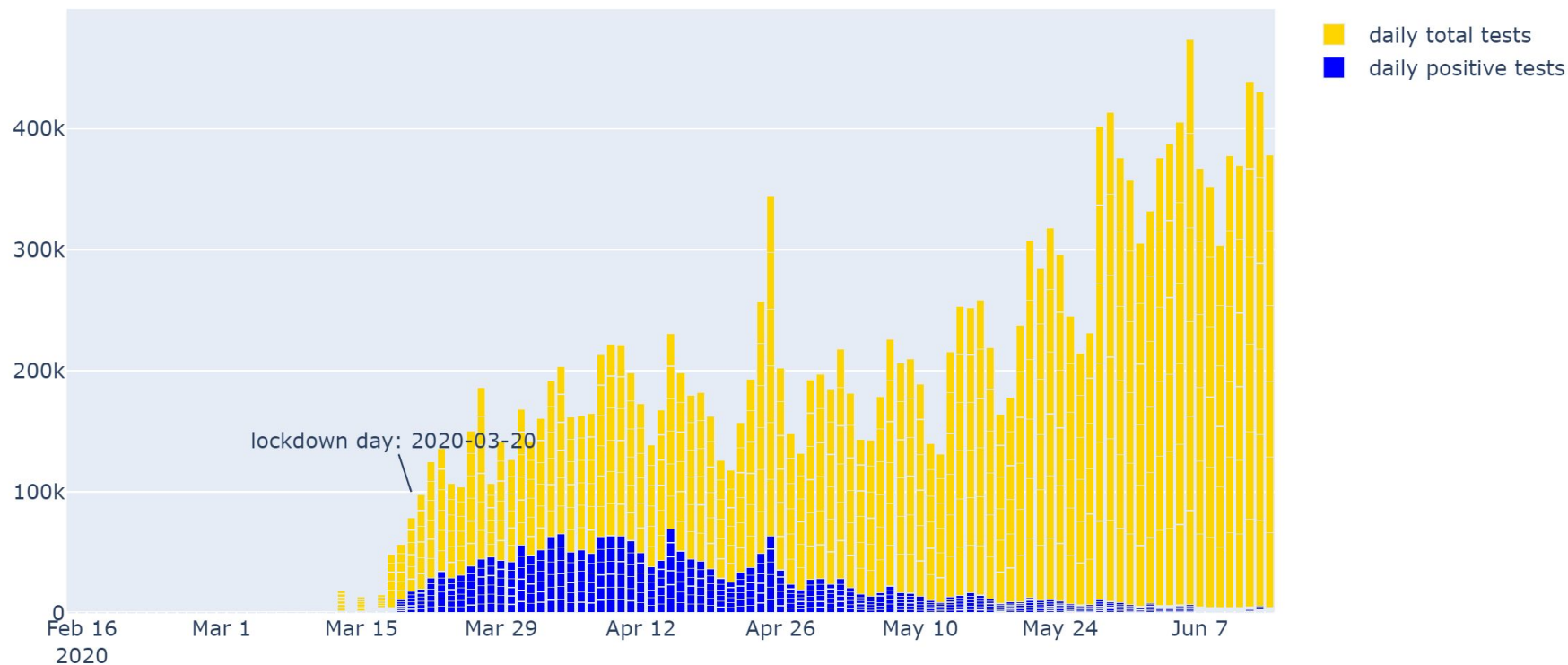


- 99 days in lockdown
- Planned to end on June-27
- Workplaces had the highest percent change

Mobility percent change in New York state



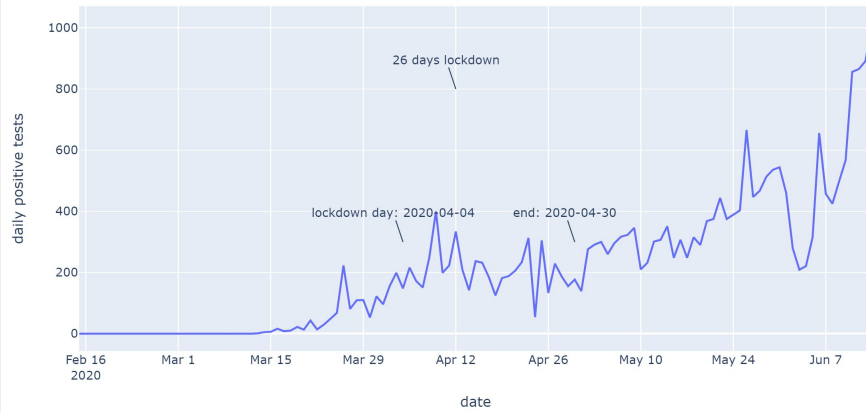
## Daily total tests vs positive tests in New York state



# Alabama

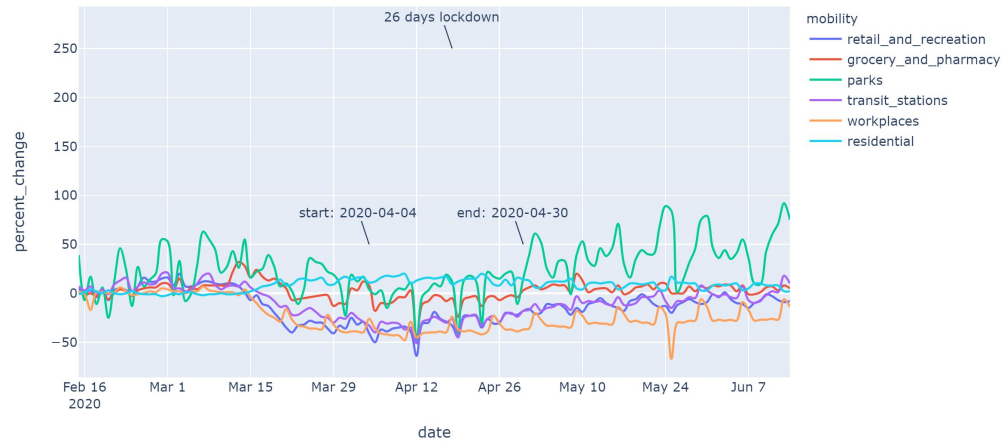
- Daily positive tests vs mobility percent change
  - Correlation after the lockdown day
  - The highest percent change in mobility
- Daily total test vs positive tests

Daily positive tests in Alabama state

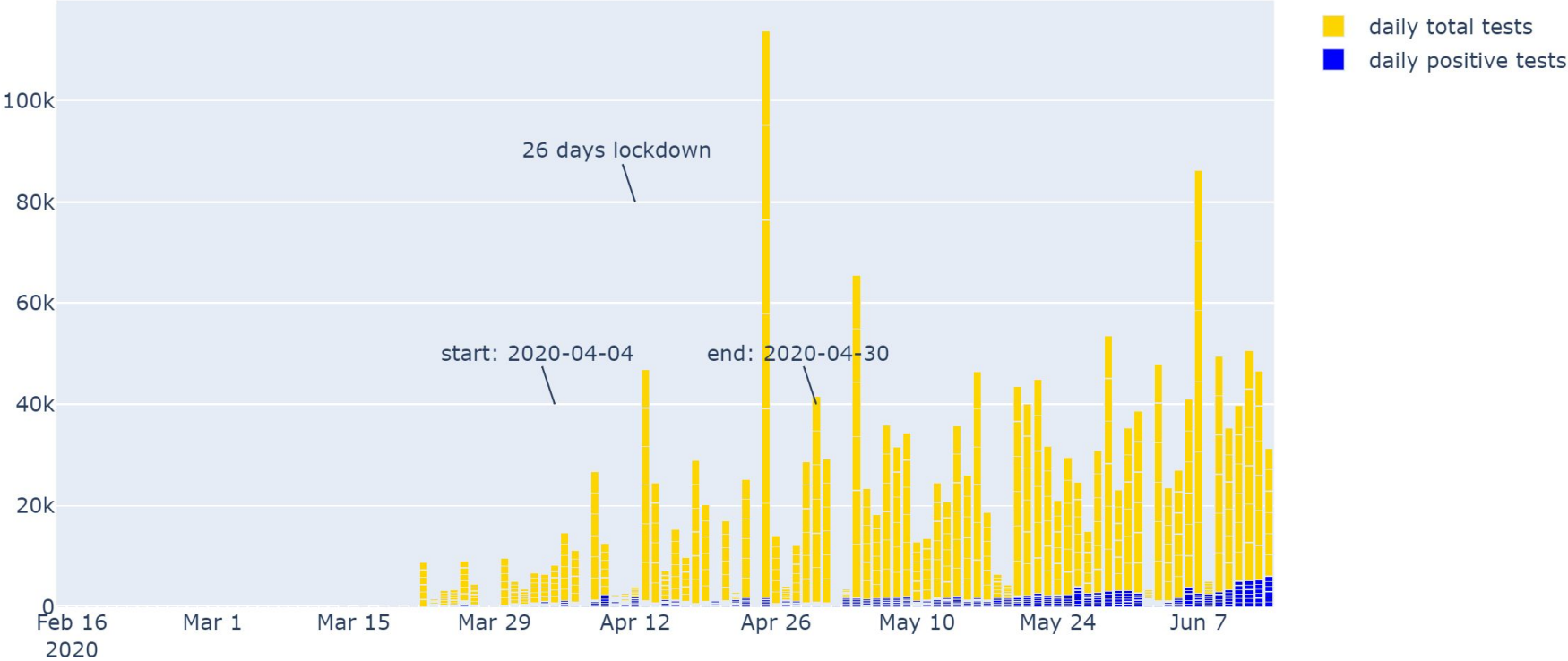


- 26 days in lockdown
- Workplaces had the highest percent change

Mobility percent change in Alabama state



Daily total tests vs positive tests in Alabama state



# SUMMARY

- Mobility change
  - Reduction in mobility shows decline in daily positive cases
- Total daily tests
  - A steady increase in daily total tests shows decrease in positive cases
- Power bi dashboard

<https://app.powerbi.com/groups/me/reports/7c04ef18-088f-49b8-9807-196229d930ad/ReportSection>



## References

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- ❖ <https://raw.githubusercontent.com/nytimes/covid-19-data/master/us-counties.csv>
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Thank you