Review of: "A Multi-factor Model of COVID-19 Epidemic in California"

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Potential competing interests: No potential competing interests to declare.

1. The paper's clear objective and novel data science approach to estimate COVID-19 spread in California are commendable. The use of time series data from 58 counties enhances the study's robustness and generalizability. Accurate estimation of cumulative cases based on multiple factors is a valuable insight.
2. The acknowledgment of limitations, particularly the inability to estimate the infection rate, adds credibility to the study. Emphasizing the practical implications for public health officials and policymakers would enhance the paper's impact.
3. Comparing and validating the model against other epidemiological models would strengthen its reliability. Addressing potential confounding variables and discussing data quality, biases, and missing data is necessary for transparency.
4. Suggesting future research directions, such as exploring additional factors and intervention measures, would further enrich the study and increase its practical relevance.
5. Provide significance levels or statistical tests in correlation analysis. More discussion on the rationale behind selecting specific independent variables is needed.
6. Consideration of generalizability beyond California and discussing potential ethical implications related to data usage and vulnerable populations would strengthen the paper's overall contribution.
7. Adequate recognition of existing literature is important for situating the study in the broader context of epidemiological research.