Effect of policy-relevant factors on COVID-19 patient survival probability: An info-metrics analysis[1]

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Abstract
The possibility of reoccurring waves of the novel coronavirus that triggered the 2020 pandemic makes it critical to identify underlying policy-relevant factors that could be leveraged to decrease future COVID-19 death rates. We examine variation in several underlying, policy-relevant, country-level factors and COVID-19 patients death rates across twenty countries. We find three such factors that significantly impact the survival probability of patients infected with COVID-19. In order of impact, these are universal TB (BCG) vaccination policies, air pollution deaths and health-related expenditure. We quantify each probability change by age and sex. To deal with our small sample size, high correlations, and inference at the tails of the distribution, we use an information-theoretic inferential method that also allows us to introduce prior information. These priors are constructed from independent SARS data.