PRESENTER:
Marlin Lee

FULL TITLE:

Data Precision During the Pandemic: Evaluating
Normalization Approaches for Reliable COVID-19 Quantification in Wastewater

BACKGROUND:

The intrinsic complexity and variability of wastewater surveillance data necessitates the use of normalization approaches.

METHODS

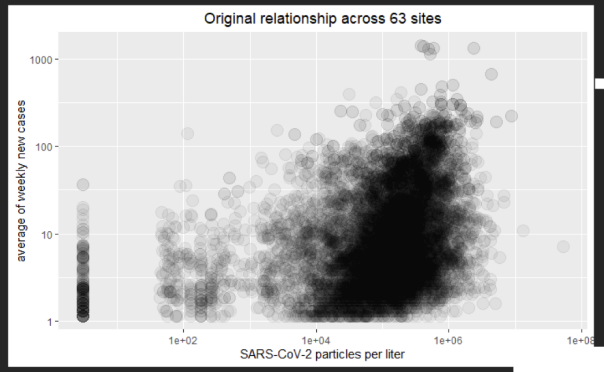
In this study, we investigated various characteristics of the collected samples:

- Human fecal marker (PMMoV) concentration
- Reported measurement LOD (limit of detection)
- Laboratory viral recovery control (BCoV)
- Population size
- Geographic location
- Dominant SARS-CoV-2 variant

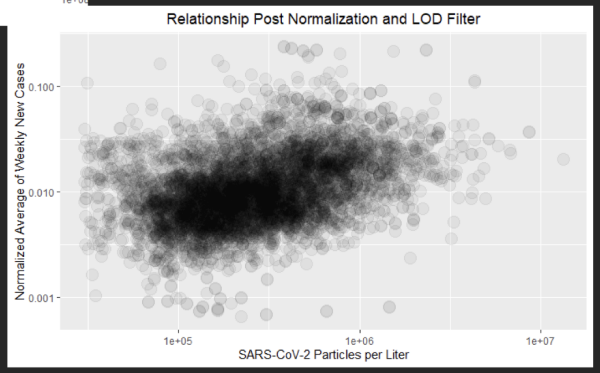
FINDINGS:

Our findings revealed that the linear relationship between the log of sewage concentration of SARS-CoV-2 and the log of reported cases was significantly improved when controlling for the site's population and LOD.

Evaluating Normalizers for Better COVID-19 Wastewater Quantification and Prediction



Normalizing!



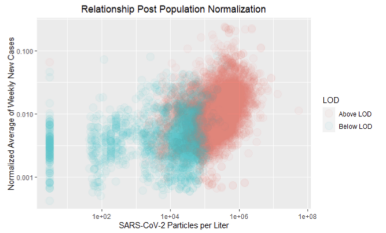
After Normalization:

- Reduced variance
- Reduced non uniform variance
- Reduced model error

Take a picture to view the full paper

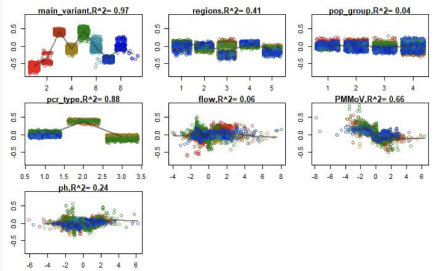
Take a picture to view the GitHub repo

ADDITIONAL ANALYSIS:



	adjusted R^2	mse	num_param
All categorical interaction model	0.771	0.383	145
All categorical indirect model	0.756	0.413	49
Sub data all interaction model	0.767	0.386	73
Sub data indirect interaction model	0.755	0.410	24
Base relationship	0.139	1.464	3

RANDOM FOREST PLOTS:



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