# Influence of Chinese city's hygiene on the SARS-CoV2 transmission

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## Conclusions

- Lockdown of Wuhan effectively cut-down its move-out.
- Top 10% move-out cities from Jan are all in Hubei province
- National hygienic city may not have a significant better control of the epidemic
- The outliers with weak epidemic control, are more likely to be non- national hygienic city

## Background

- Transmission dynamics of this emerging infectious disease haven't been fully understanded
- Previous research shows the air quality may influence the disease transmission

## Methods

**National hygienic city**

- Ninety three reconfirm national hygienic cities in China in 2018, this is the newested list of national hygienic city.

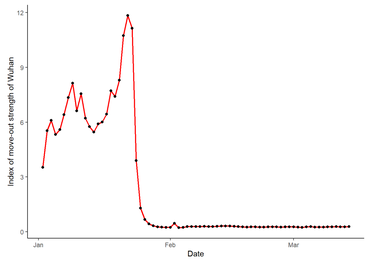
**Total confirmed cases**

- nCov2019 packages
- Excluding infected arrivals from abroad

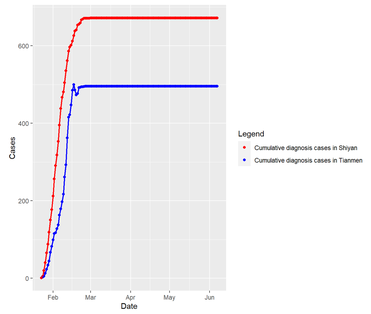
**Move-out data before lockdown**

- Baidu Qianxi
- Inspect elements
- 16 days (Jan 10,2020 - Jan 25,2020)
- Each city's move-out strength is presented as percentage
- Total move-out strength were adjusted by each day's move-out strength.

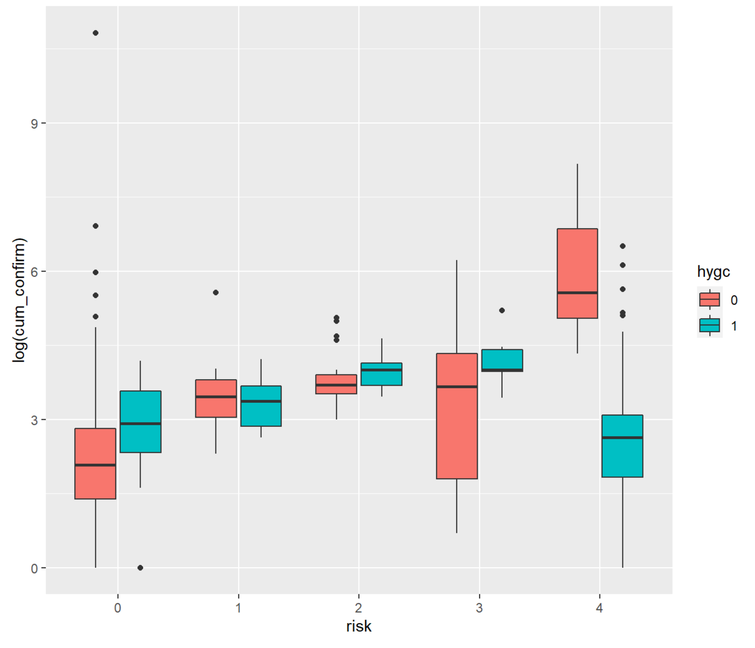
## Results




Move out trend from Wuhan




A comparision of Tianmen and Shiyan




A comparision of all cities outside Wuhan

## Future work

- Multi-way ANOVA
- Case-control match of cities
- Multiple linear regression
- Mortality & Inhospital time
- Detailed hygiene condition

## Value and impact

**Theorical implication**: how does hygiene impact the disease transmission, which will help to understand the transimission dynamics of the virus.

**Practical implication**: to evaluate the effectiveness of national hygienic cities, which will promote the city hygiene in China and beyond.

## Contact

Scan the QR code for this project's website.

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## Acknowledgements

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## References

Li H, Xu XL, Dai DW, Huang ZY, Ma Z, Guan YJ. Air Pollution and temperature are associated with increased COVID-19 incidence: a time series study [published online ahead of print, 2020 Jun 2]. Int J Infect Dis. 2020;S1201-9712(20)30383-0. <doi:10.1016/j.ijid.2020.05.076>