

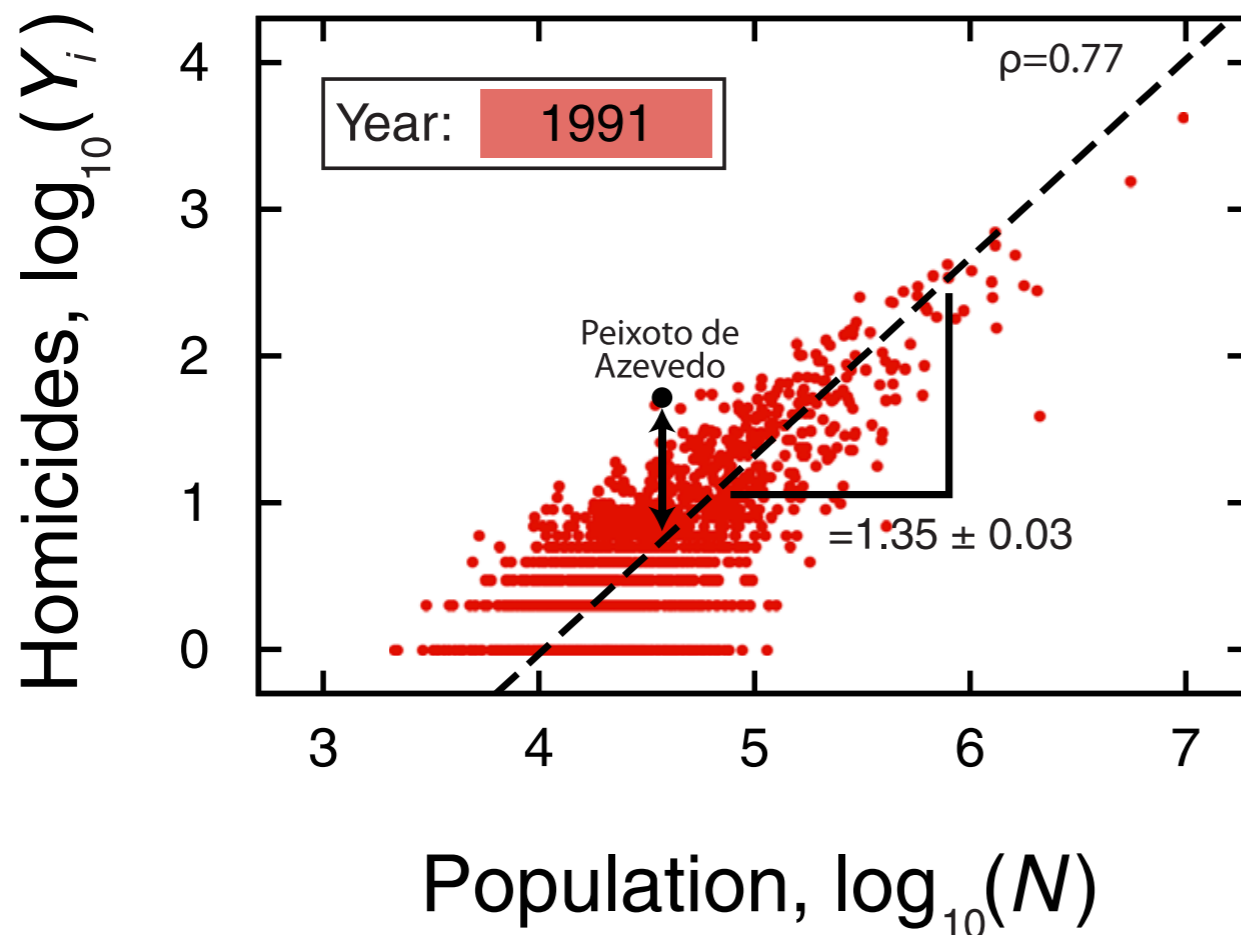
Física estatística do crime: leis de escala e redes complexas

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Escalas alométricas urbanas e métrica ajustada a escala

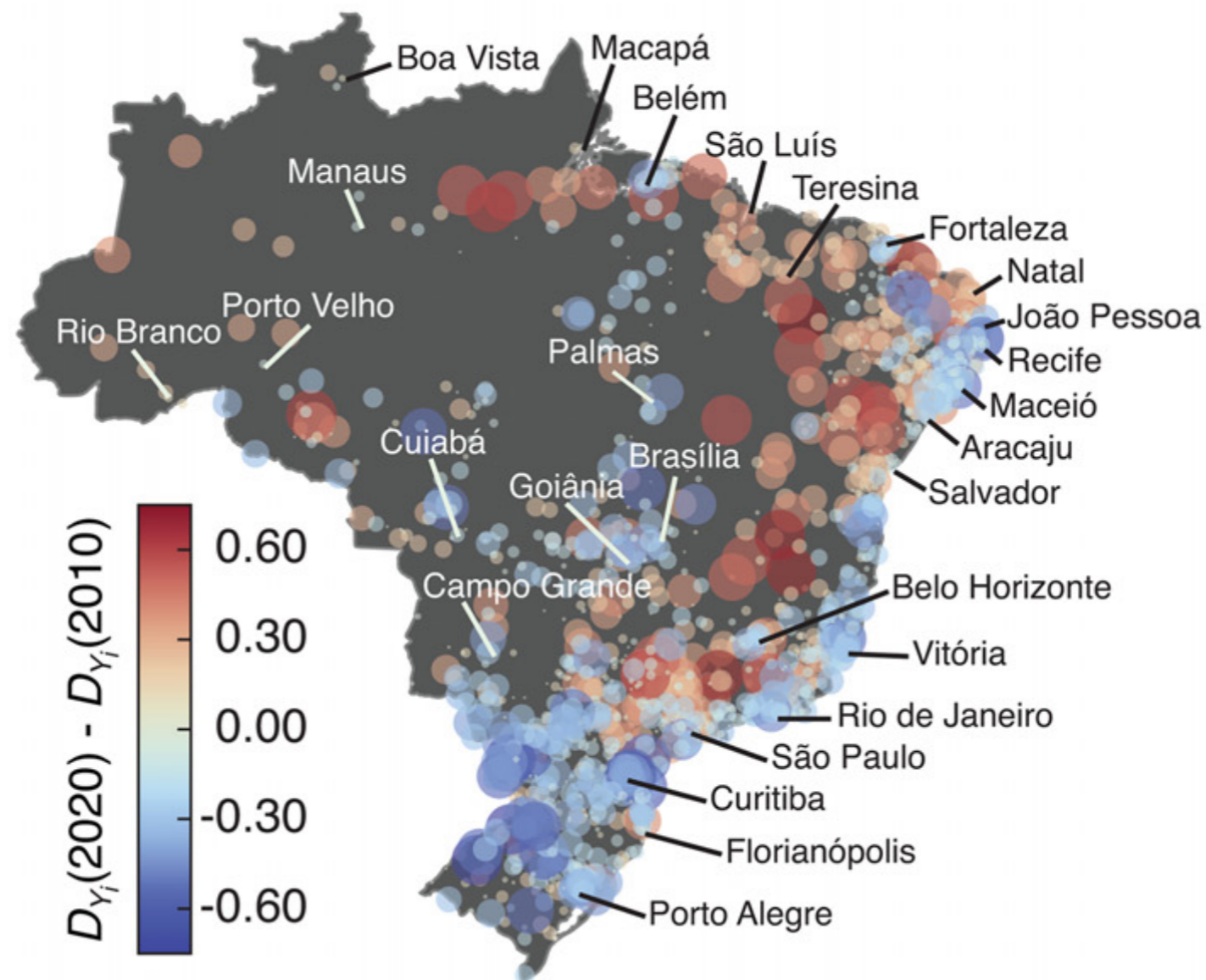


As redes complexas das cidades fazem cidades maiores mais eficientes.

Modelo linear

Adjusted-R² =
39%

$$D_{Y_i}(t + \Delta t) = C_0 + \sum_{k=1}^8 C_k D_{Y_k}(t) + \eta_i(t)$$



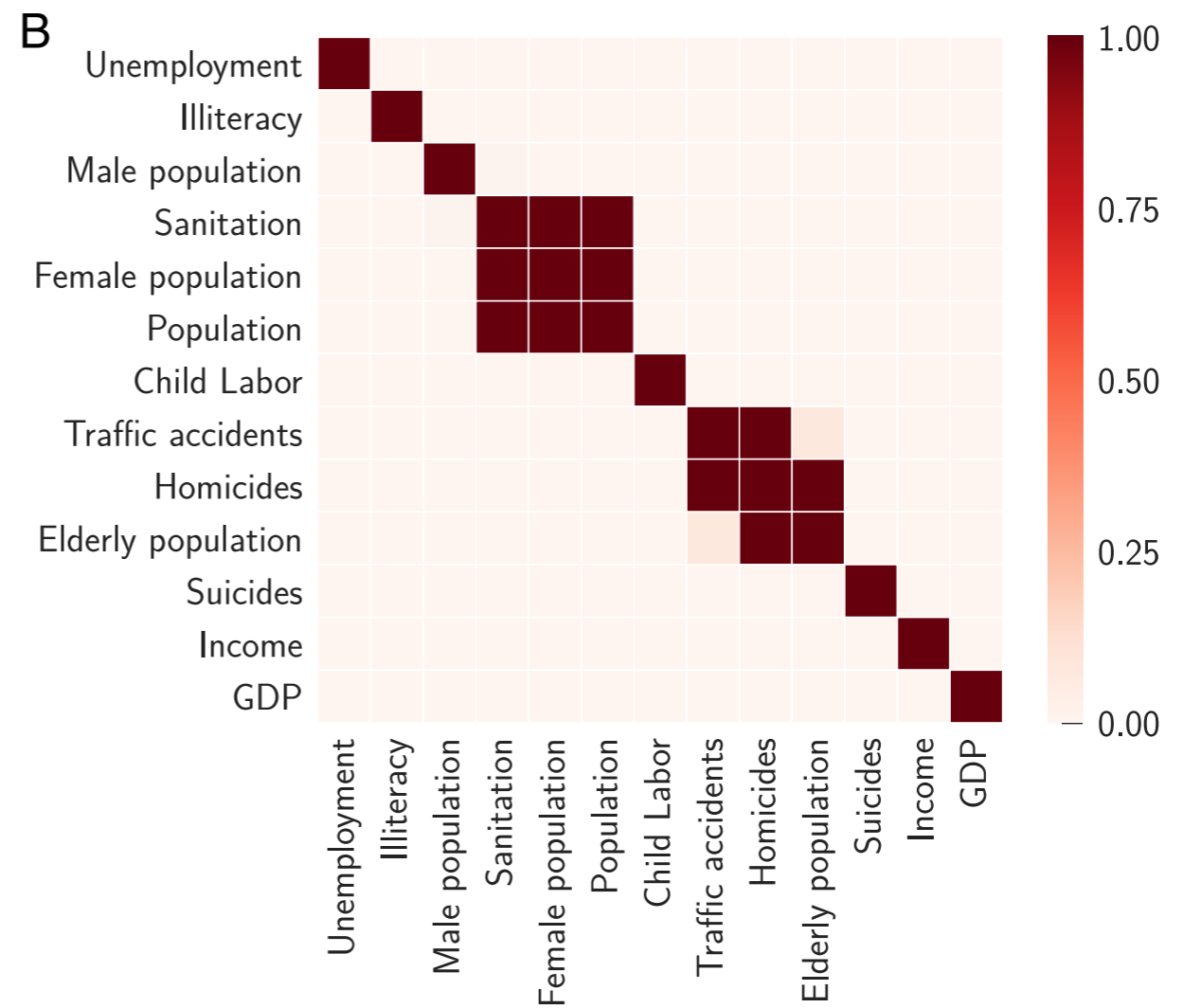
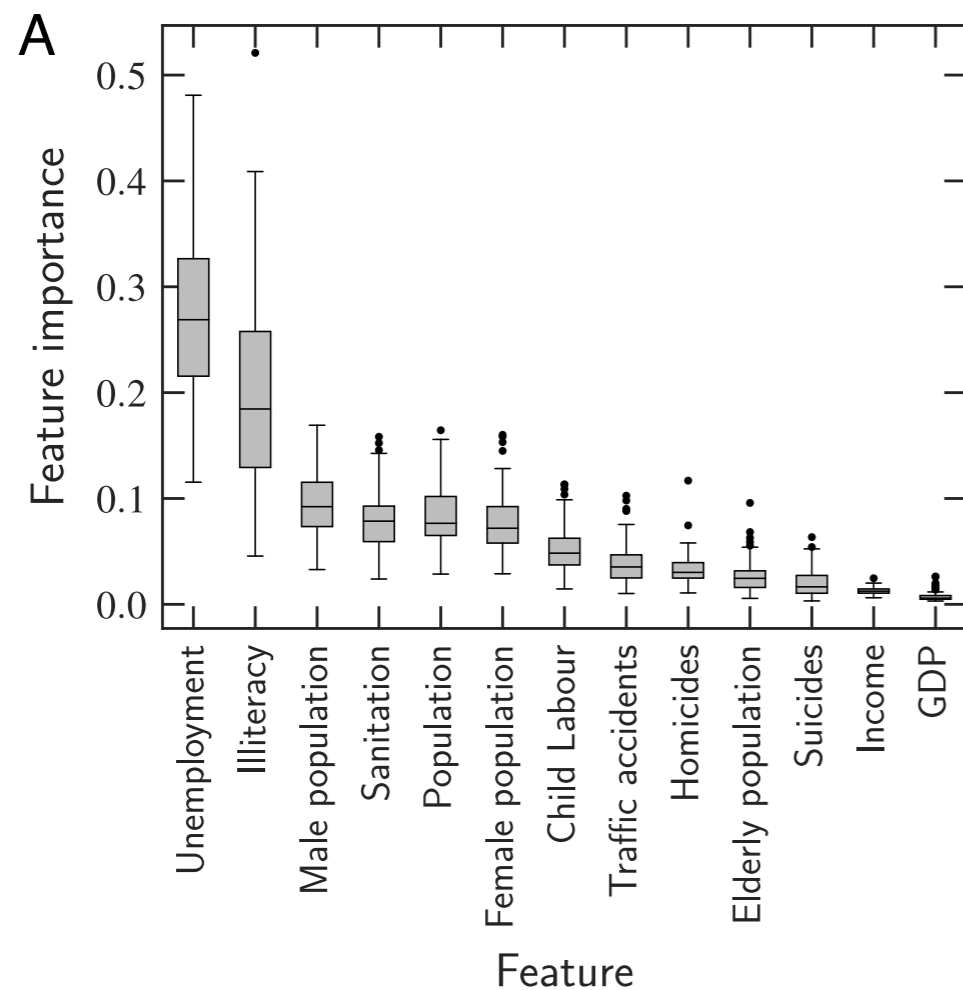
- Child labor
- Elderly pop.
- Female pop.
- Homicides
- Illiteracy
- Income
- Male pop.

Floresta aleatória

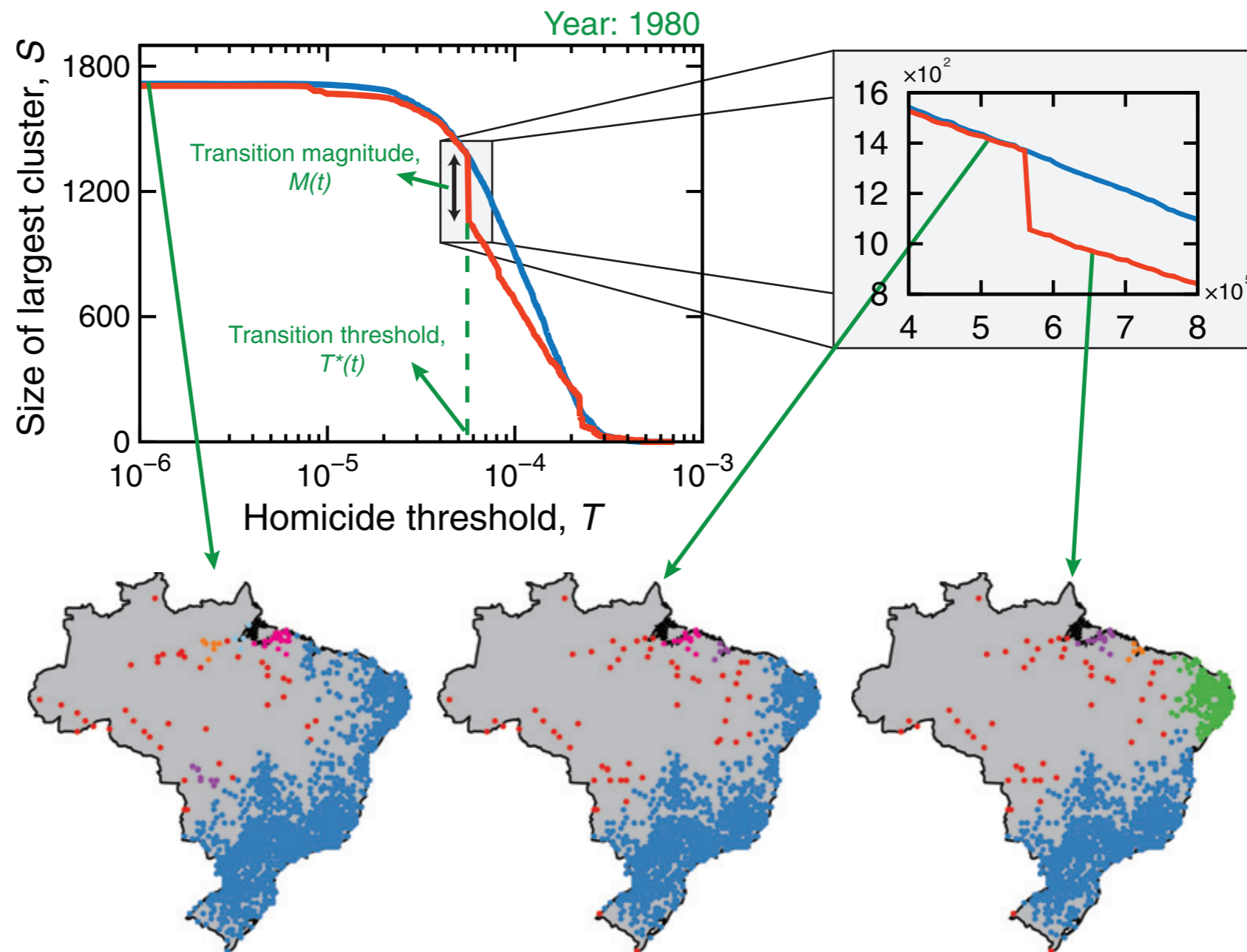
$$H(t + \Delta t) = \hat{f}_{rf}^B(H(t), X_1(t), \dots, X_n(t)),$$

$$= \frac{1}{B} \sum_{b=1}^B T(H(t), X_1(t), \dots, X_n(t); \Theta_b),$$

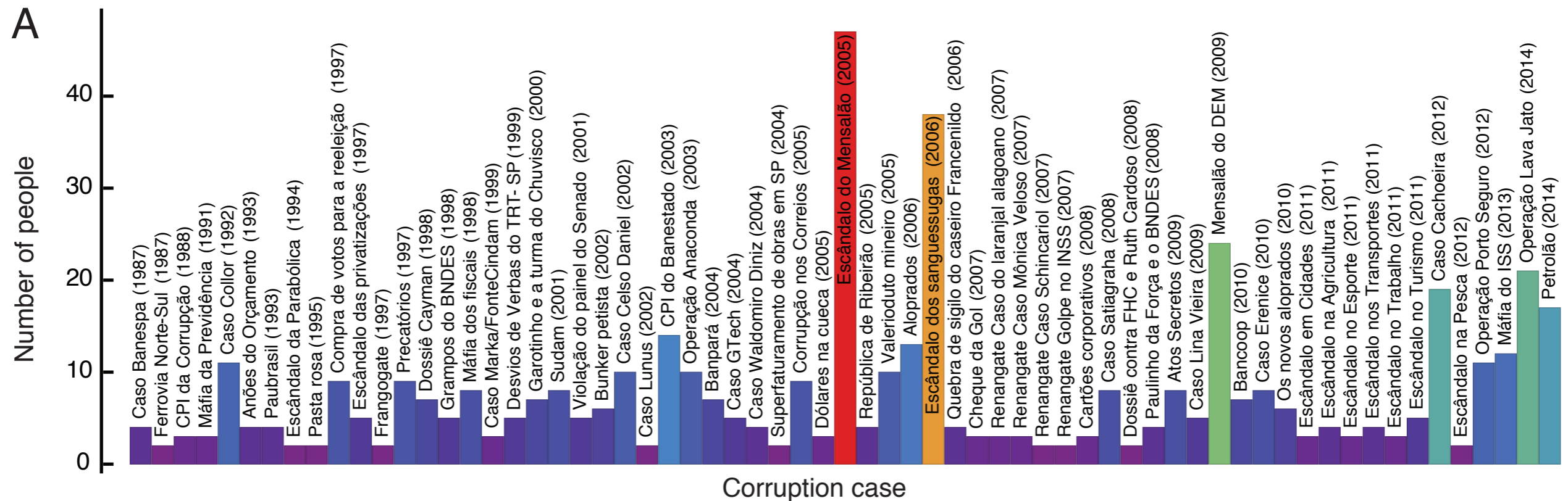
Adjusted-R²
up to 95%



Clustering

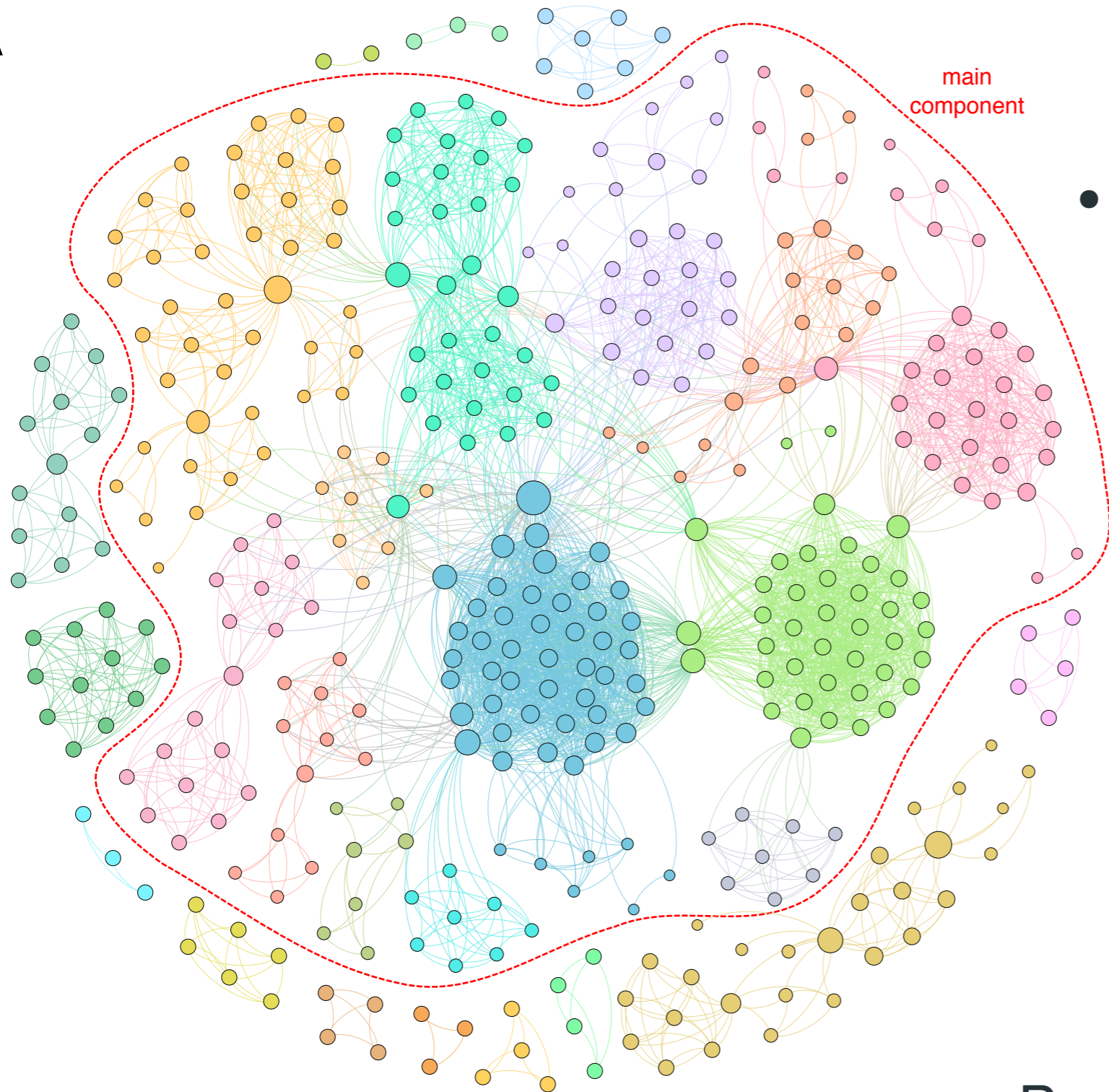


Escândalos de corrupção



- Ciclo de 4 anos e eleições;
- 8 pessoas por escândalo;

A



- Comunidades e hierarquia;

- Pessoas chaves;

- Predição de futuras interações.

Obrigado



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<https://lgaalves.github.io/>