

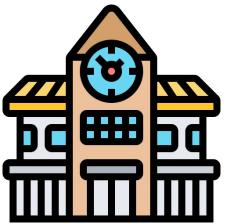
Mercados Educativos en México



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¿Qué es un mercado?



El problema a resolver es encontrar los mercados educativos a nivel secundaria en México.



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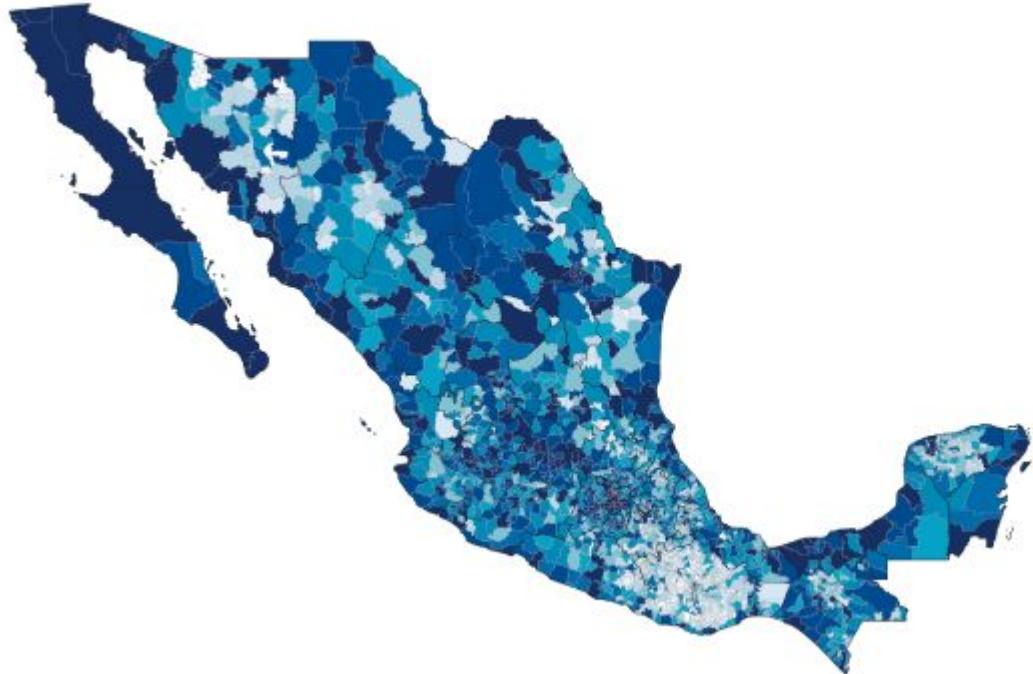
¿Por qué es un problema?



Geografía



Preferencias



Una alternativa: Municipios

0.76

Modularidad Baseline



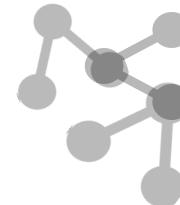
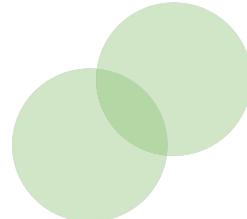
¿Qué se está haciendo actualmente?



Neilson (2013)



Posso and Mejía (2020)



— ¿Qué hicimos nosotros?

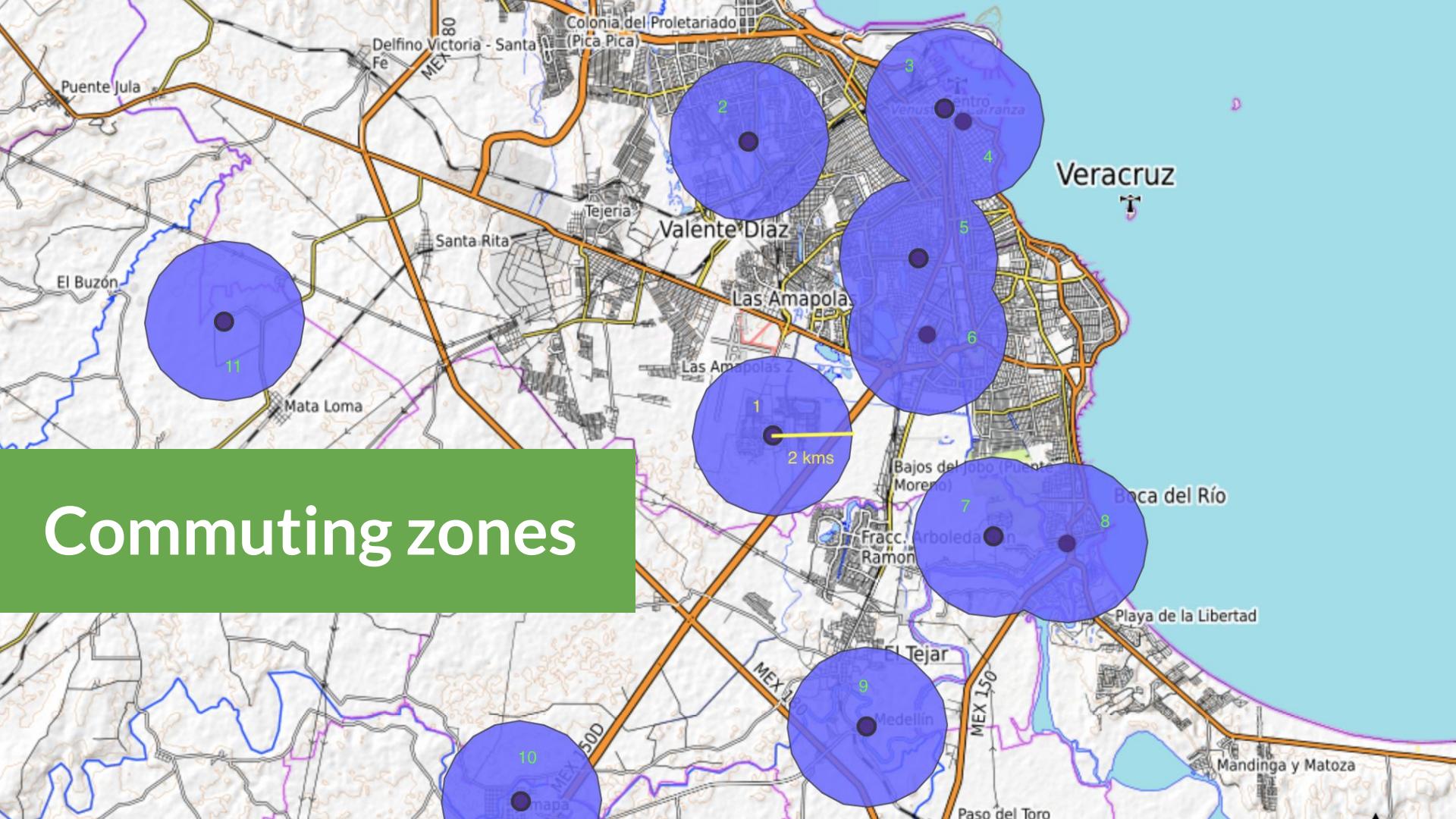


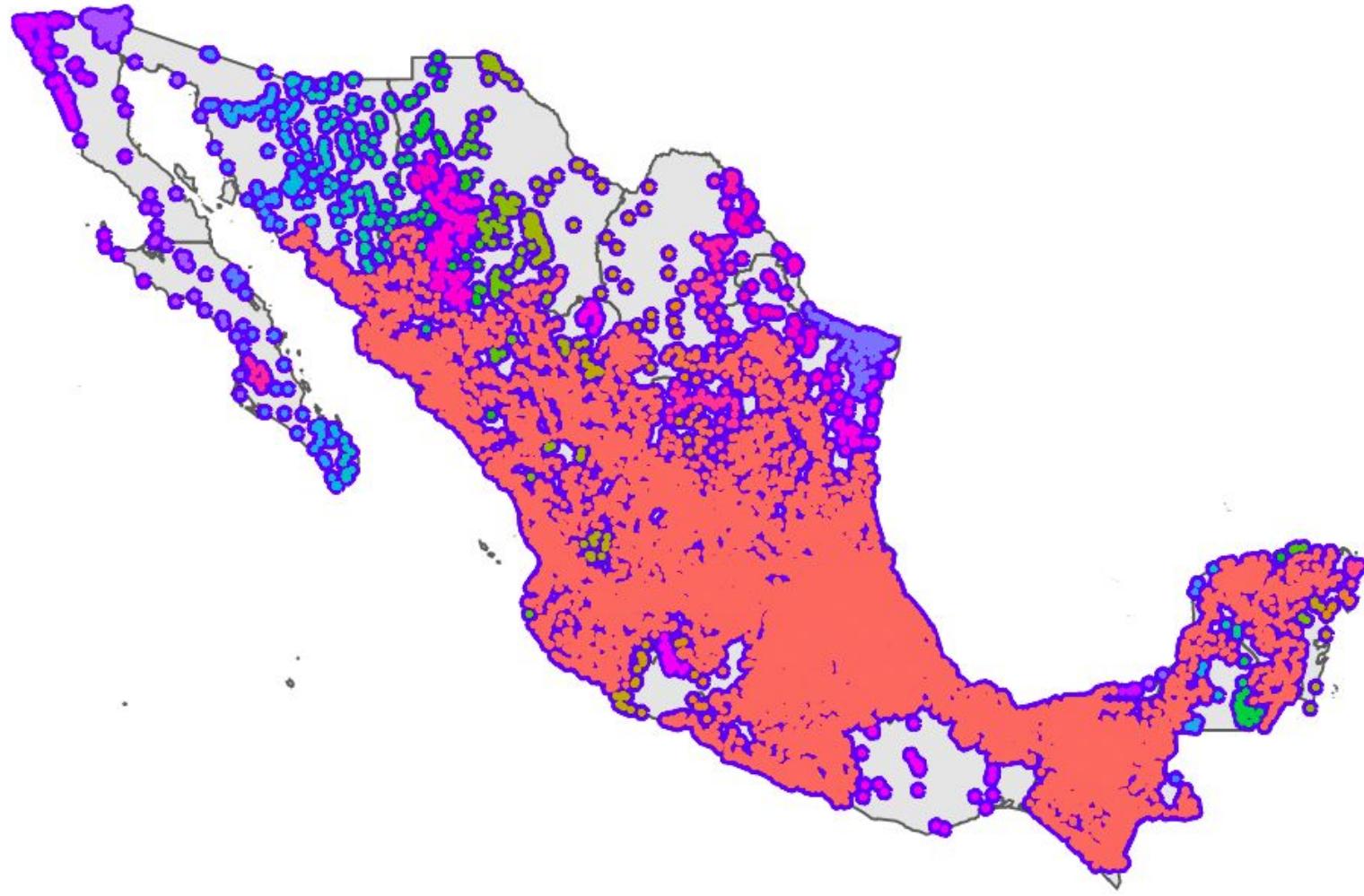
Commuting zones



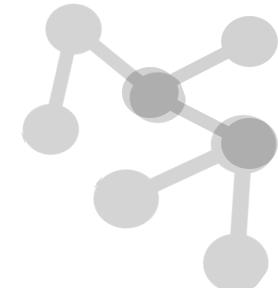
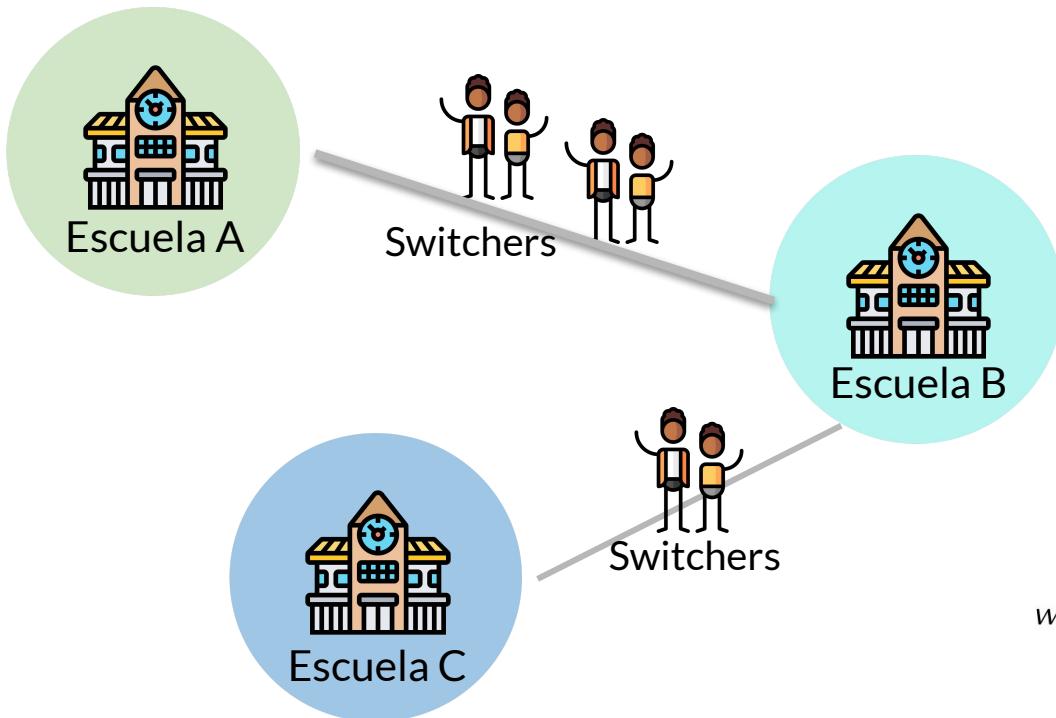
Community detection

Commuting zones



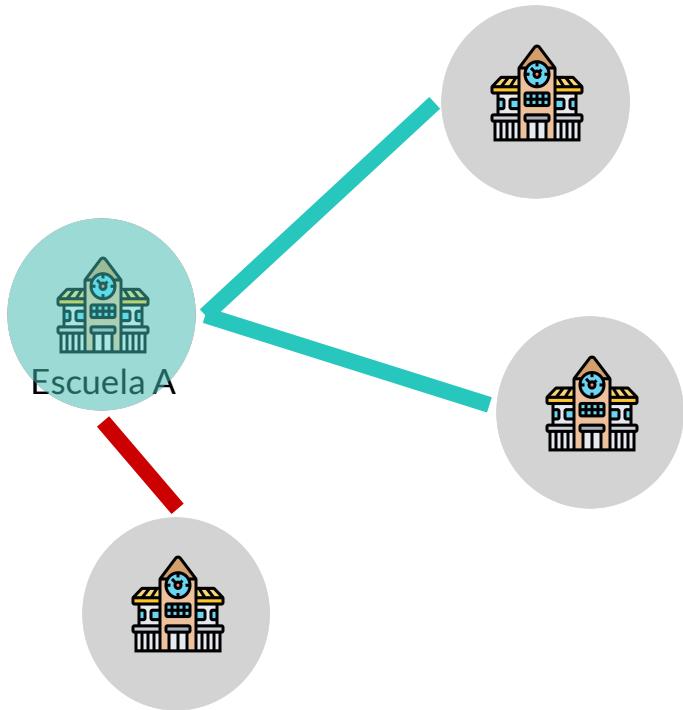


Community detection



$$weight = \frac{\text{cambio de A a B} + \text{cambio de B a A}}{\text{cambios fuera de A} + \text{cambios fuera de B}}$$

Por aristas



Modularidad municipios (baseline): 0.76

Por aristas

Modularidad:
0.31

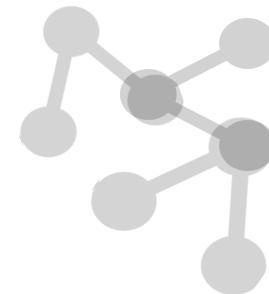


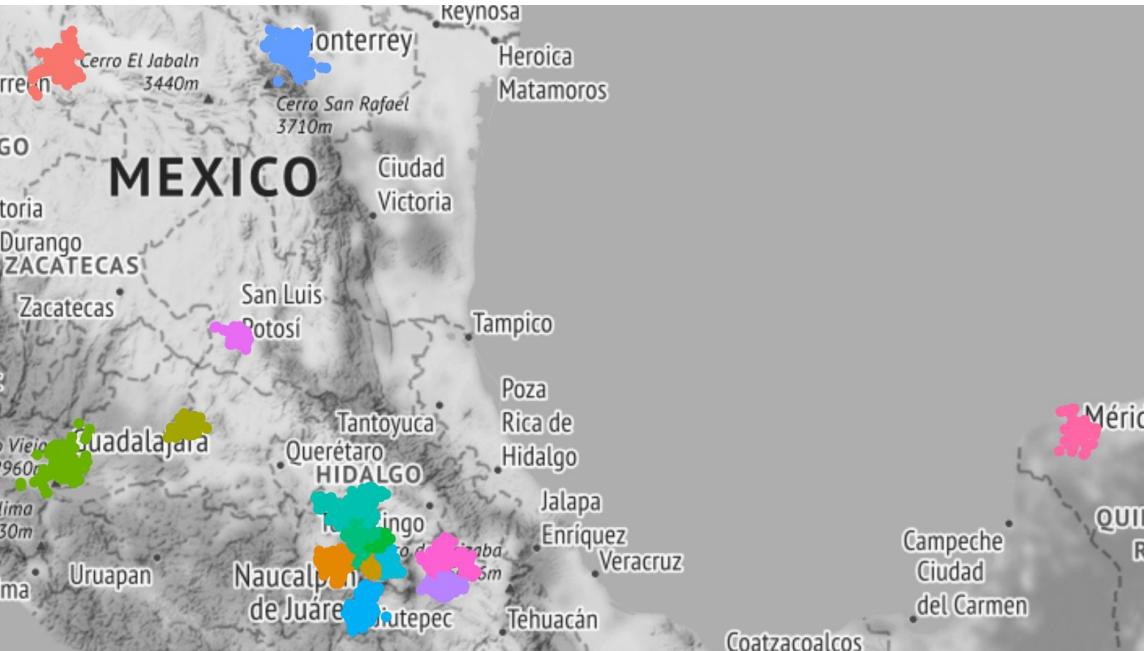
Se encuentran muchos grupos, con pocos miembros
(mapa con 10 comunidades más grandes)

Modularidad municipios (baseline): 0.76

Por nodos

algoritmo	wins
fast greedy	27
multi level	14
walktrap	14
label propagation	6
leading eigenvector	3



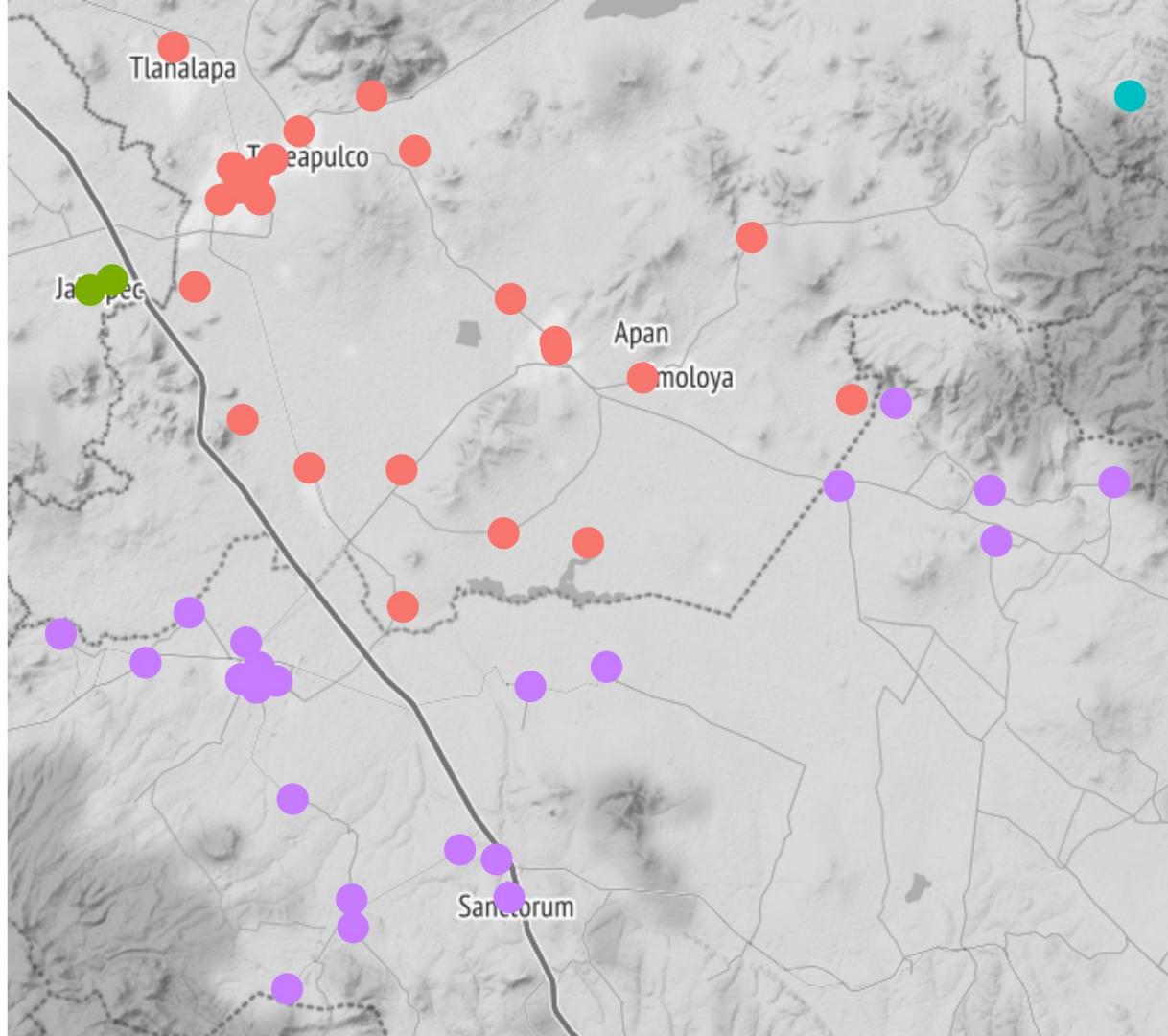


0.91

Nuestra modularidad

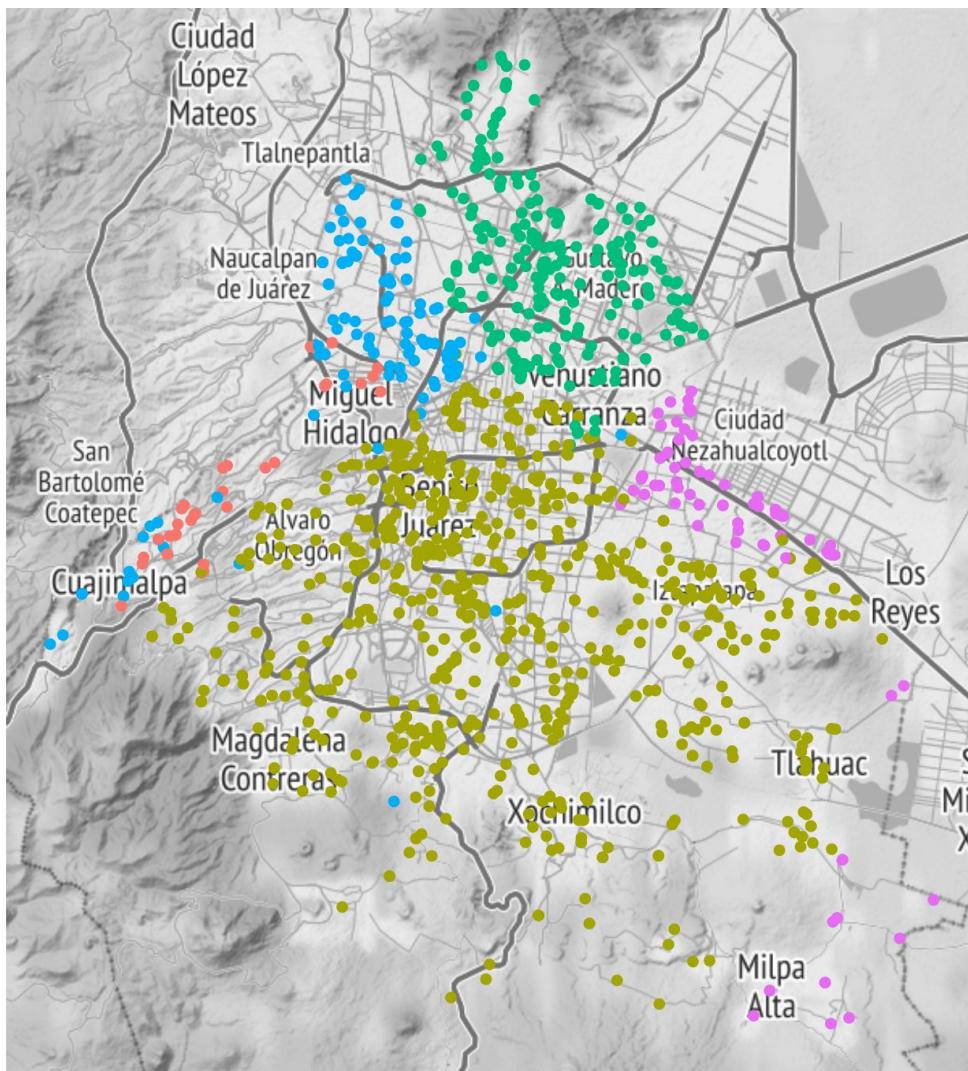


Modularidad municipios (baseline): 0.76



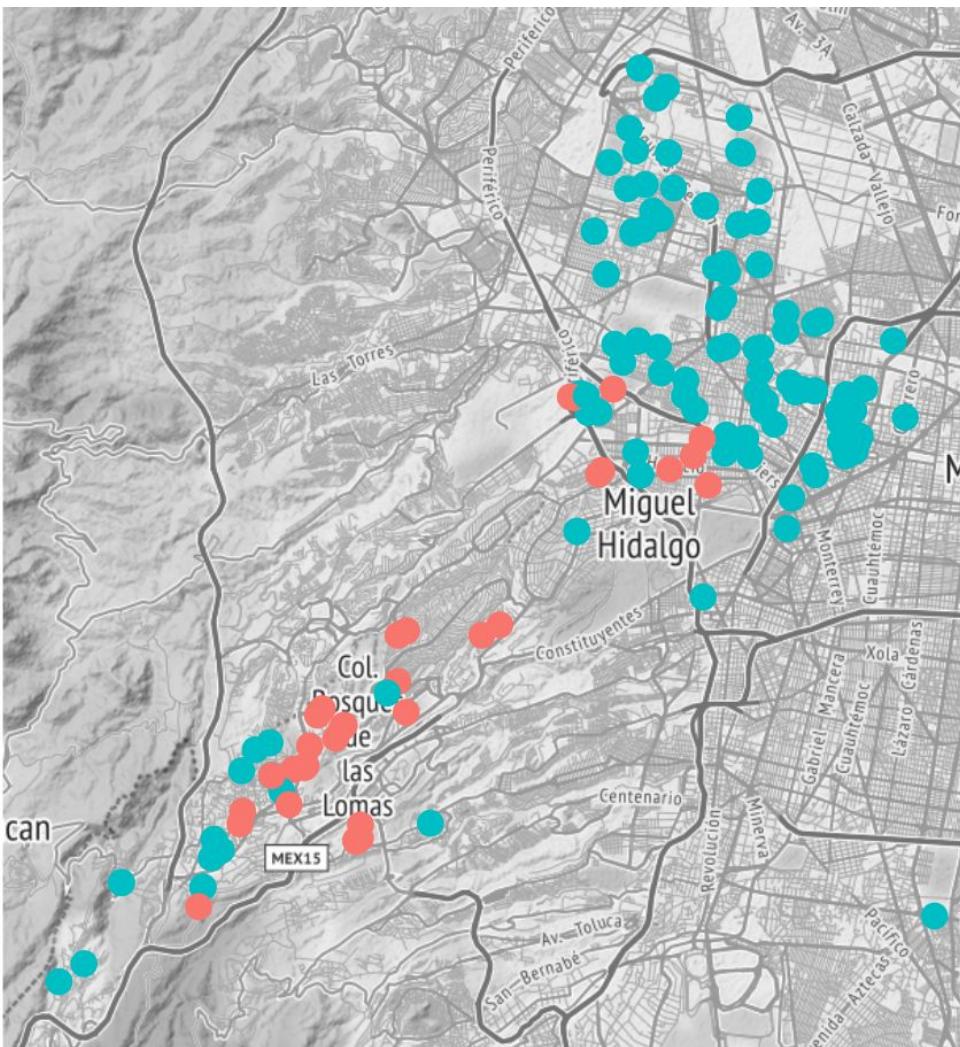
as.factor(estado)

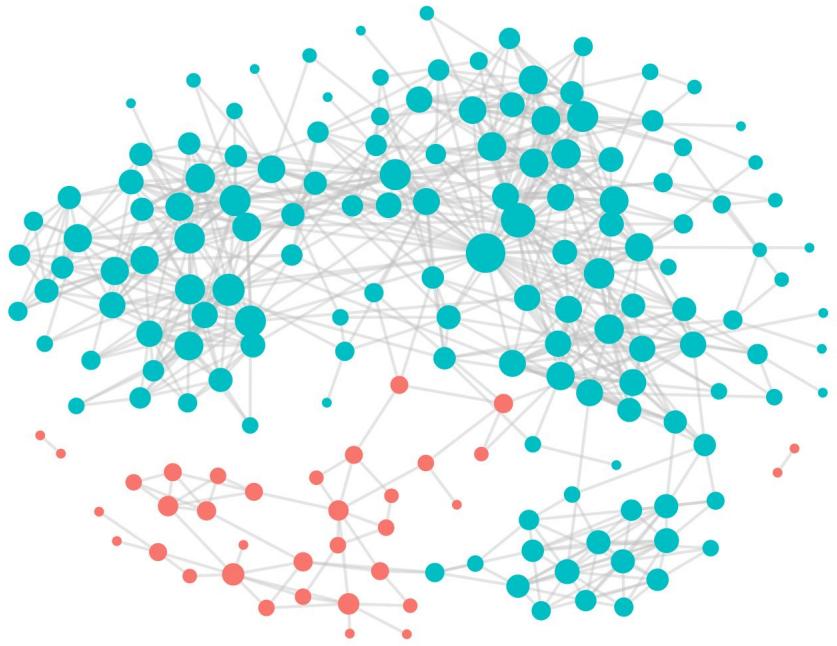
- 13
- 15
- 21
- 29



as.factor(id_community)

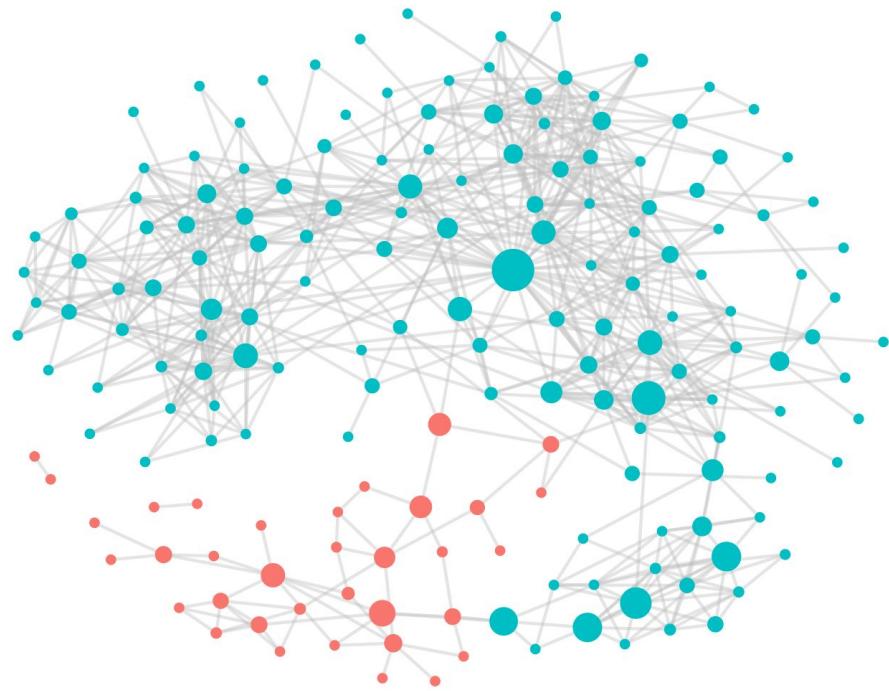
- 0010028
- 0010234
- 0010953
- 0010956
- 0010970





central_grado

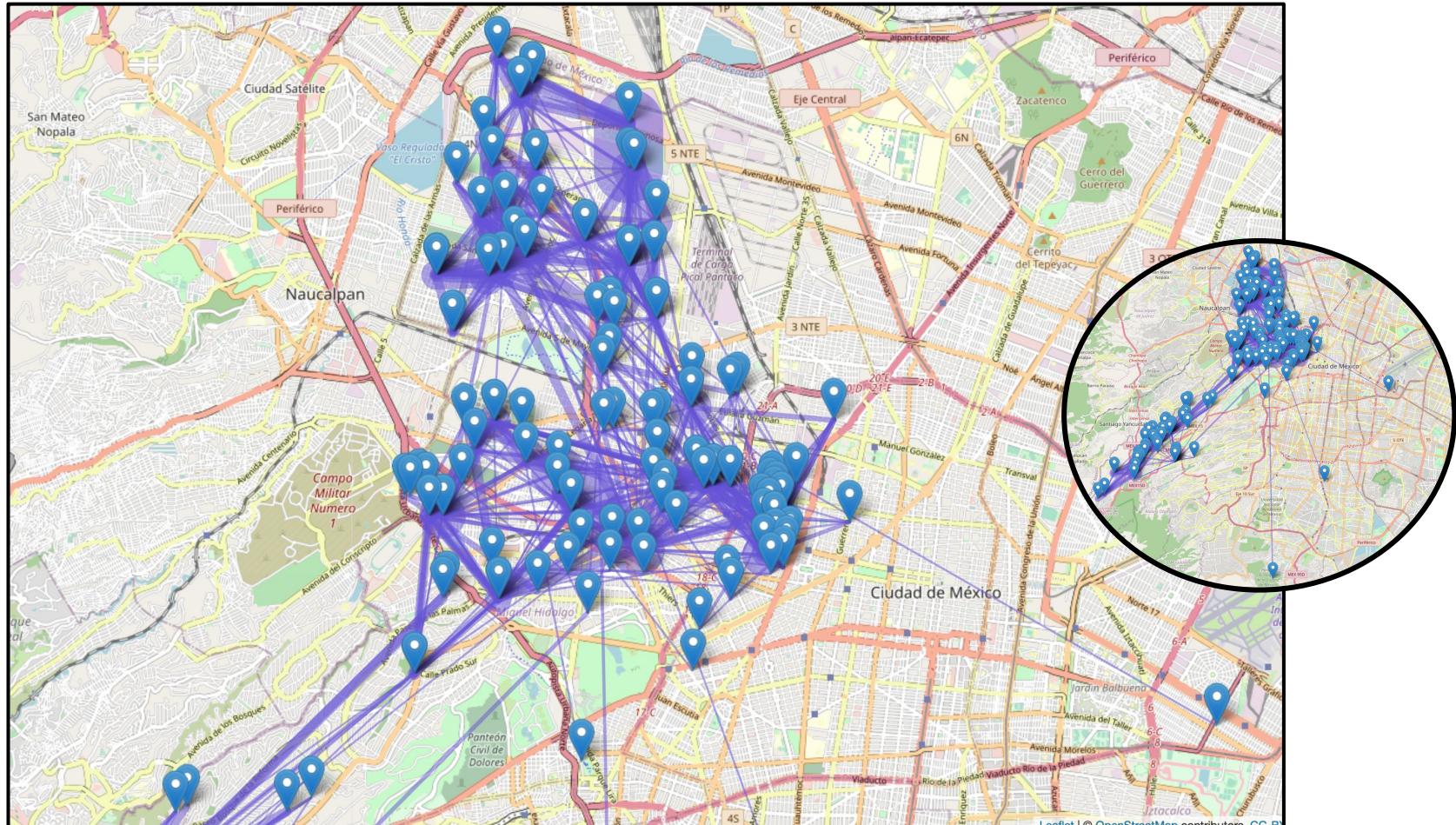
- 10
- 20
- 30
- 40



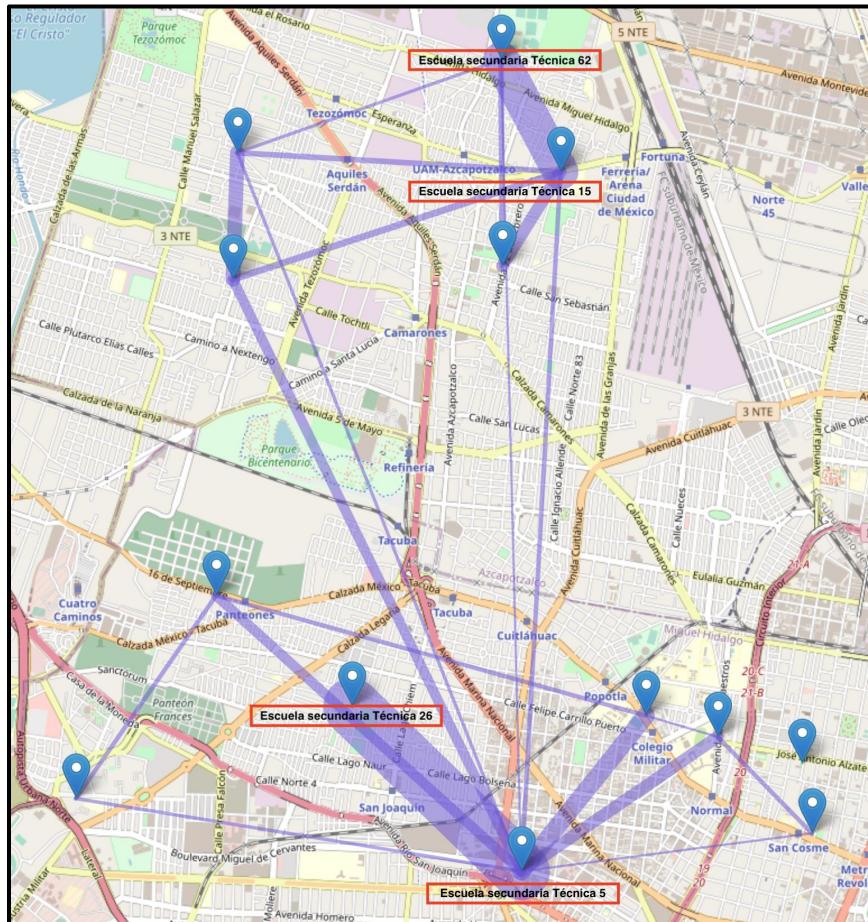
central_between

- 0
- 2000
- 4000
- 6000

Grafo “pequeño” en la CDMX



Reducción del ejemplo anterior: Top 10 escuelas con más transacciones de salidas



Conclusiones y Preguntas

