

Koncept 'public transport deserts' – aplikácia na územie Slovenska

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Operační program Výzkum, vývoj a vzdělávání



Kde sa vzal koncept *public transport deserts*?

- Public transport deserts/transit deserts (Jiao 2017) = územia s vysokým dopytom po verejnej doprave, ale s nedostatočnou ponukou verejnej dopravy („... transit demand is significantly greater than the supply...“, Jiao 2017, s. 529)
- Vychádza zo staršieho konceptu 'food deserts' (Cummins & Macintyre 2002, Wrigley 2009, Križan et al. 2015, etc) – územia s nedostatočným prístupom ku kvalitným zdrojom potravín

Dallas

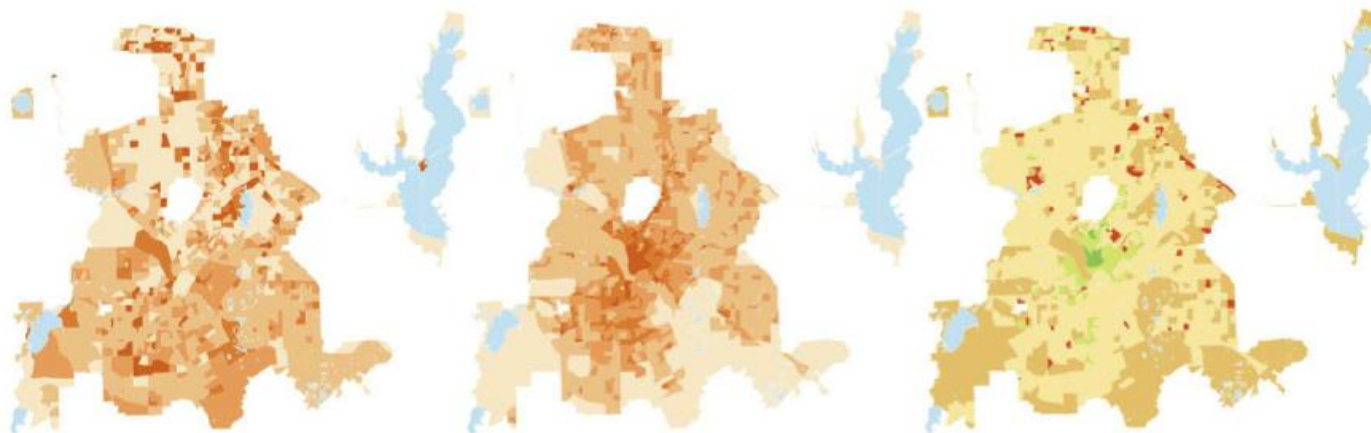
0 10 Miles



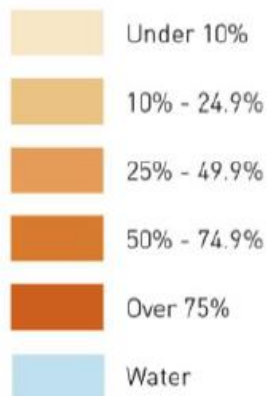
Demand

Supply

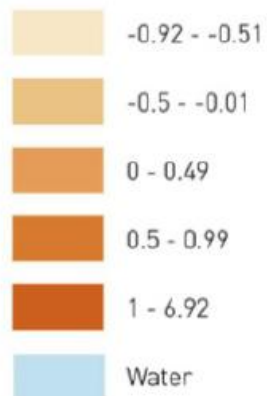
Gap



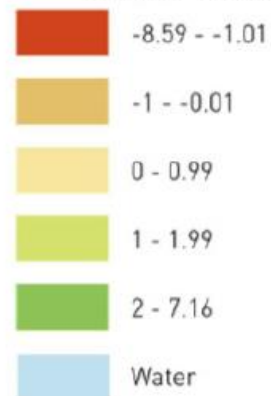
Transit Dependent Population



Transit Supply



Gap
(Supply) - (Demand)



Source: Jiao (2017)

Ako definovať dopyt po (verejnej) doprave?

Ekonomický pohľad: dôraz na zisťovanie elasticity dopytu (napr. vplyv ceny, rýchlosti, vyťaženia, (ne)zamestnanosti, ... Paulley et al. 2006, Gnap et al. 2006, Fitzová et al. 2021...)

Jiao (2017) – adaptované na databázové zdroje v prostredí USA:

Household drivers = (population age 16 and over) – (persons living in group quarters) (1)

Transit-dependent household population = (household drivers) – (vehicles available) * national level carpooling ratio (2)

Transit-dependent population = (transit-dependent household population) + (population ages 12–15) + (non-institutionalized population living in group quarters) (3)

group quarters: napr. ubytovanie študentov, seniorské domy, atď.

Ako definovať ponuku verejnej dopravy?

Jiao (2013, 2017, Jiao&Dillivan 2013, upr.)

1. Number of transit stops within each block group
2. Frequency of transit service within each block group (based on weekday service)
3. Number of transit routes within each block group
4. Total length of sidewalks (miles) in each block group
5. Intersection density in each block group

Equity Indicators	Income and Social Class							Mobility Need and Ability					
	Income	Car ownership	Unemployed	Housing rent	Emigration status	Job level	Education	Youth	Seniors	Socially isolated	Distance from CBD	Disabled	Transit users
Frequency	7	4	3	2	3	3	2	3	5	1	1	2	2
Nazari Adli et al. 2019													
Chen et al. 2019													
Currie 2010													
Delbosc and Currie 2011													
Foth et al. 2013													
Manaugh and Ahmed El-Geneidy 2012													
Ricciardi et al. 2015													
Junfeng Jiao 2017													
Aman and Smith-Colin (2020)													

Source: Aman and Smith-Colin (2020)

- Aman&Smith-Colin (2020): transit dependency estimation

Good transit factors and indicators.

Factor	Indicator
Connectivity to the network	Bus stop service coverage area
	Density of bus stops
	Route coverage
	ADA accessibility
Connectivity to destinations	Number of accessible jobs in one hour
	Number of accessible medical facilities in one hour
Service frequency	Bus arrivals during weekdays between 6:00 am - 10:00 am
	Bus arrivals during weekends between 9:00 am - 4:00 pm
	Bus arrivals during weekdays overnight between 12:00 am - 5:00 am
Flexibility and time efficiency	Number of routes
	Number of accessible jobs in 30 min
	Number of accessible medical facilities in 30 min
	Number of accessible grocery stores in 30 min

Čo vieme odhadnúť?

- Dopyt?

- Počet automobilov/1000 obyv.
- Podiel ekonomicky aktívnych vs ekonomicky závislých
- Štruktúra zamestnanosti (nezamestnanosť)

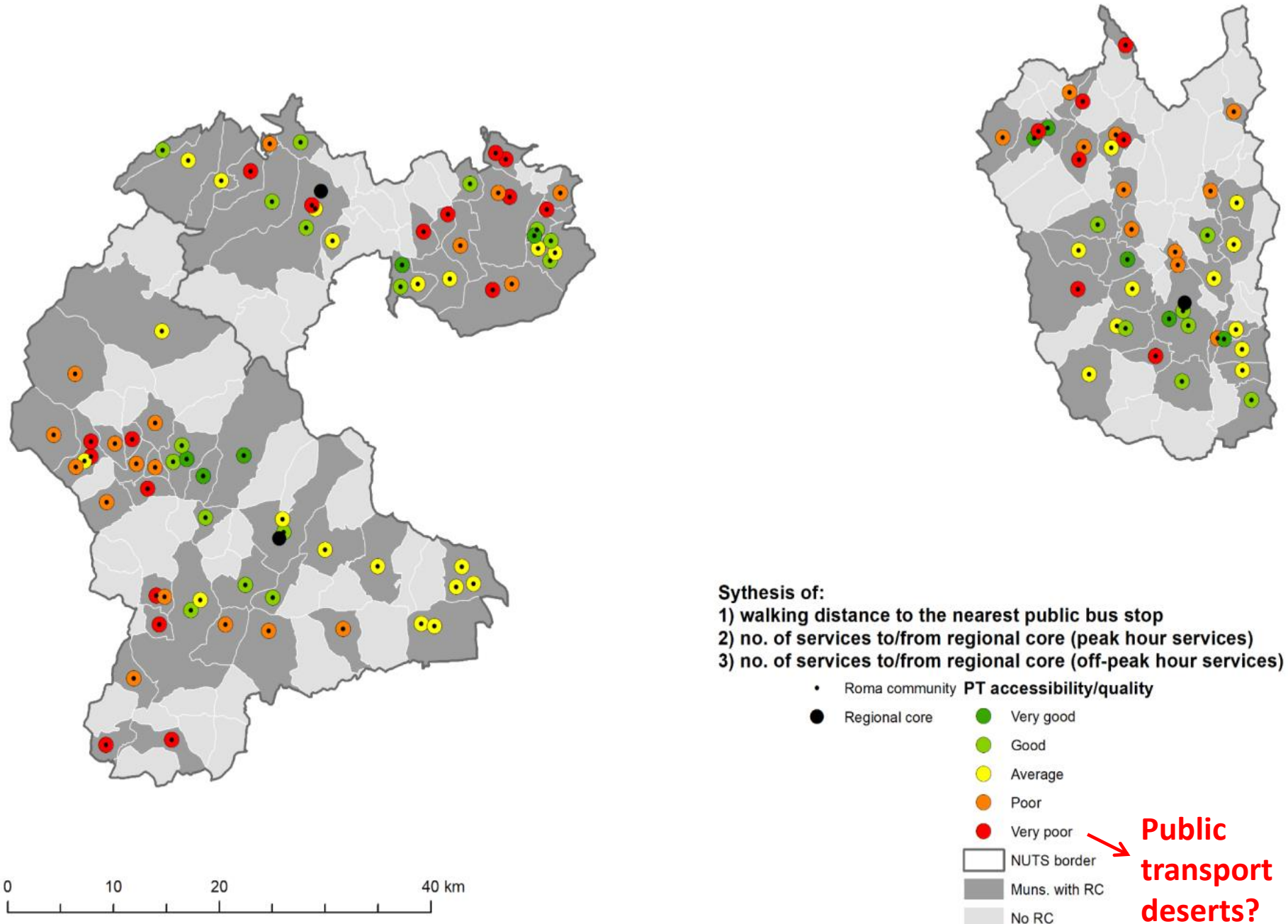
- Ponuka?

- Hustota zastávok VD (na plochu, 1000 obyv. ...)
- dostupnosť zastávok VD (hustota chodníkov, vzdialenosť k zastávke...)
- Kvalita obslužnosti zastávok VD/v sedle, špičke (databáza INPROP)

Čo nevieme odhadnúť?

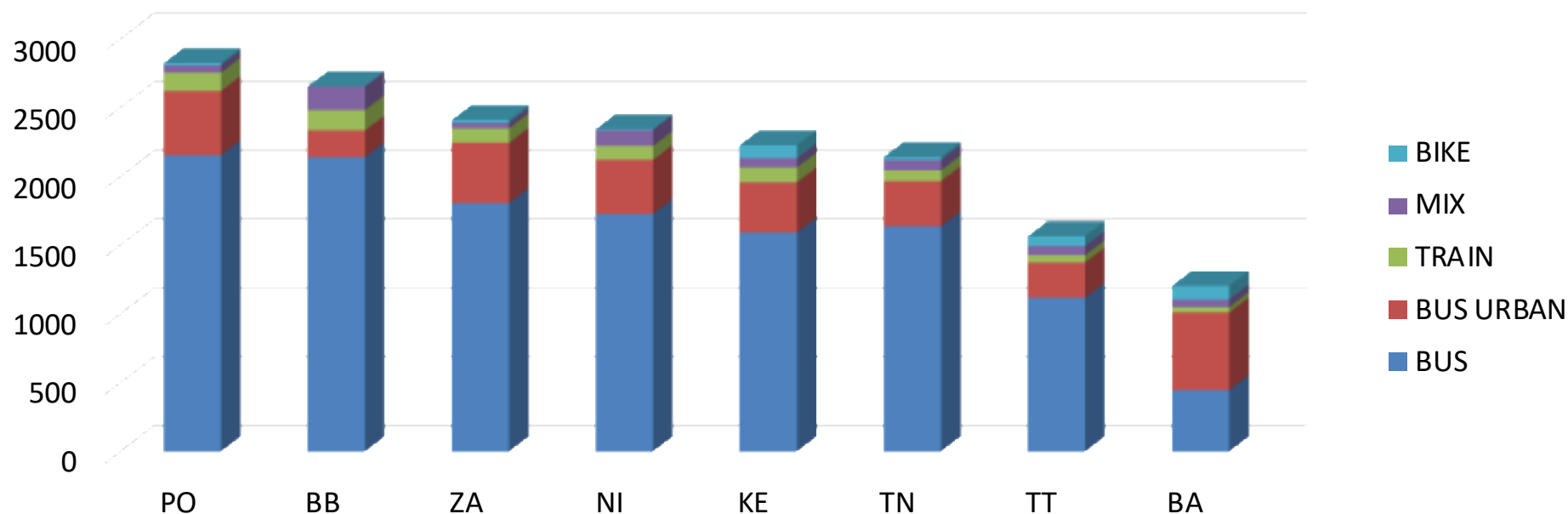
- Kde sú prechodne bývajúci zamestnanci? Ako sa prepravujú?
- Podobne: študenti? Seniori?
- Flotila služobných vozidiel?

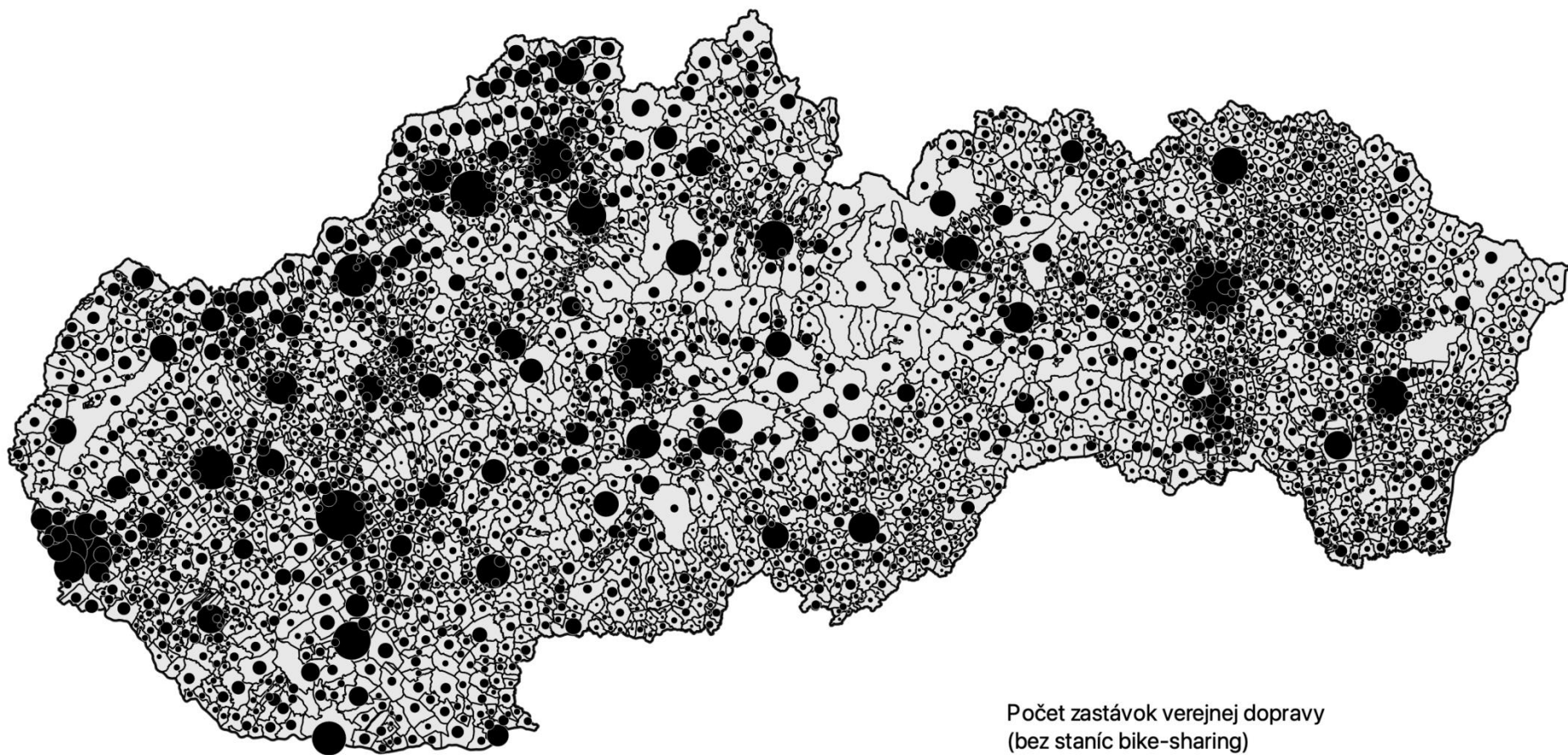
A typology of PT accessibility&quality in Roma communities (one of the variants)



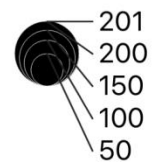
Databáza zastávok VD na SR

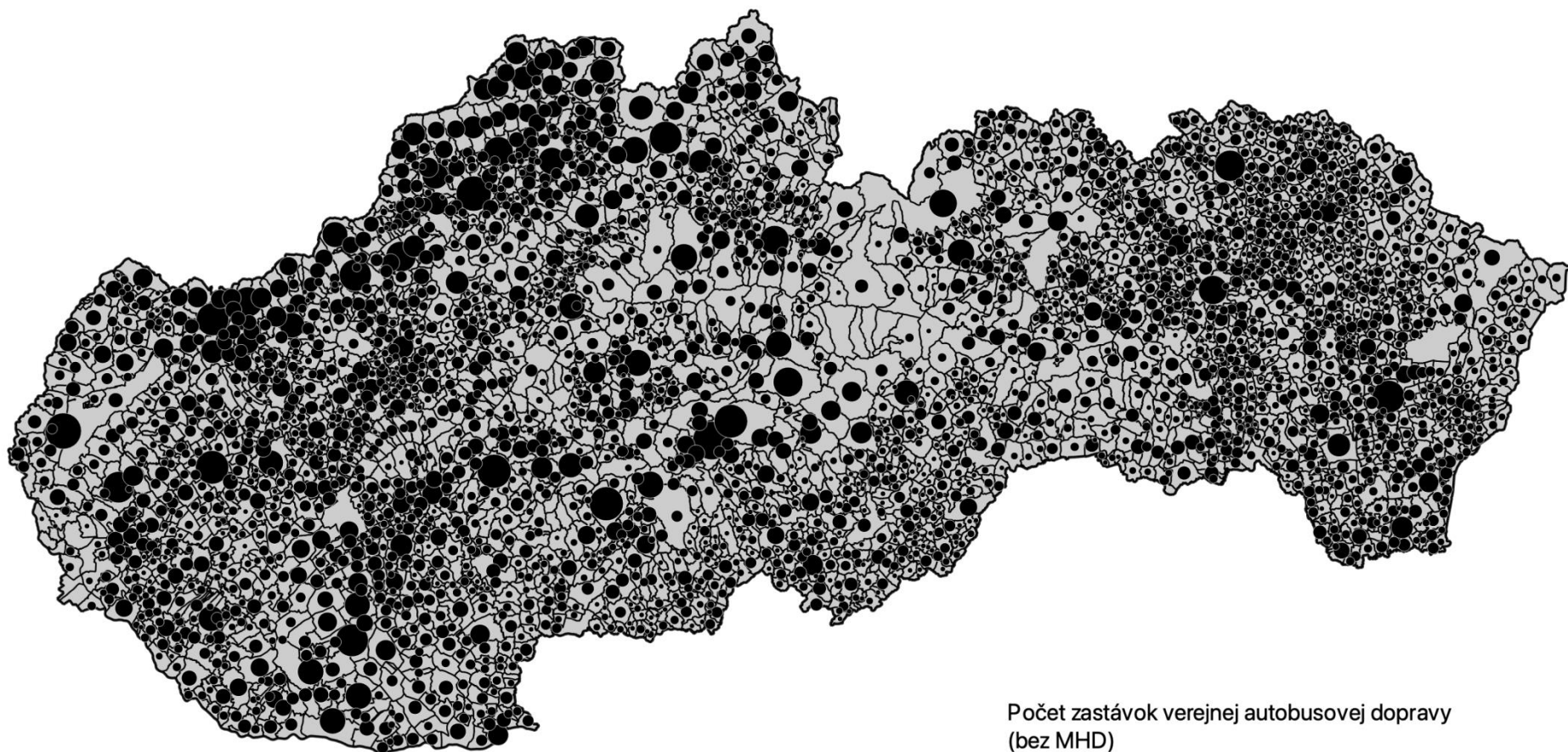
- ubian.sk -> TransData (Žilina)
- HW a SW vo verejnej doprave (pre prepravcov)
- Pracovná verzia databázy (17,5 tis. lokalizačných bodov)



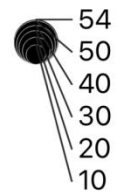


Počet zastávok verejnej dopravy
(bez staníc bike-sharing)

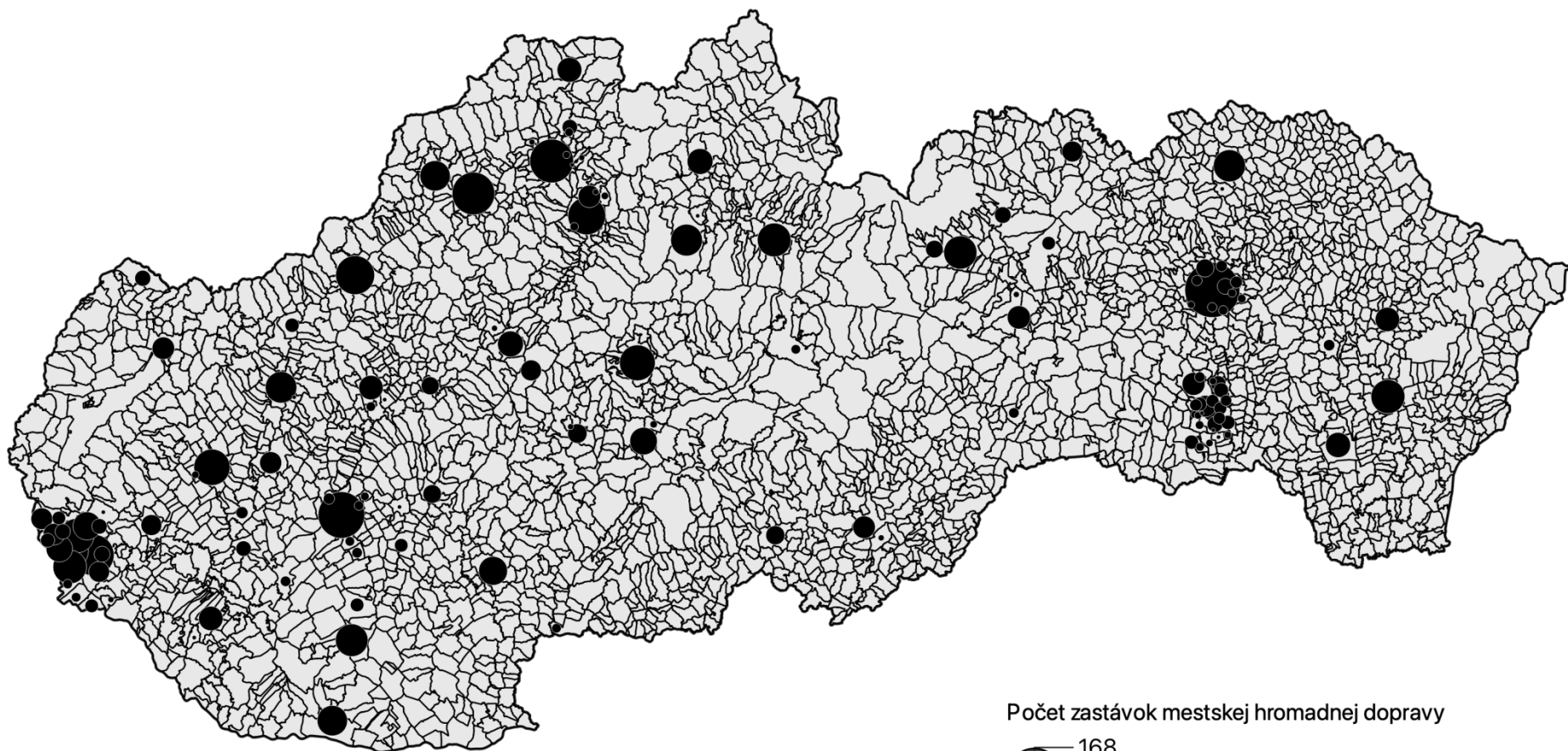




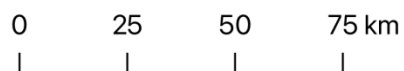
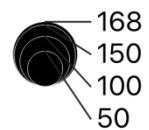
Počet zastávok verejnej autobusovej dopravy
(bez MHD)

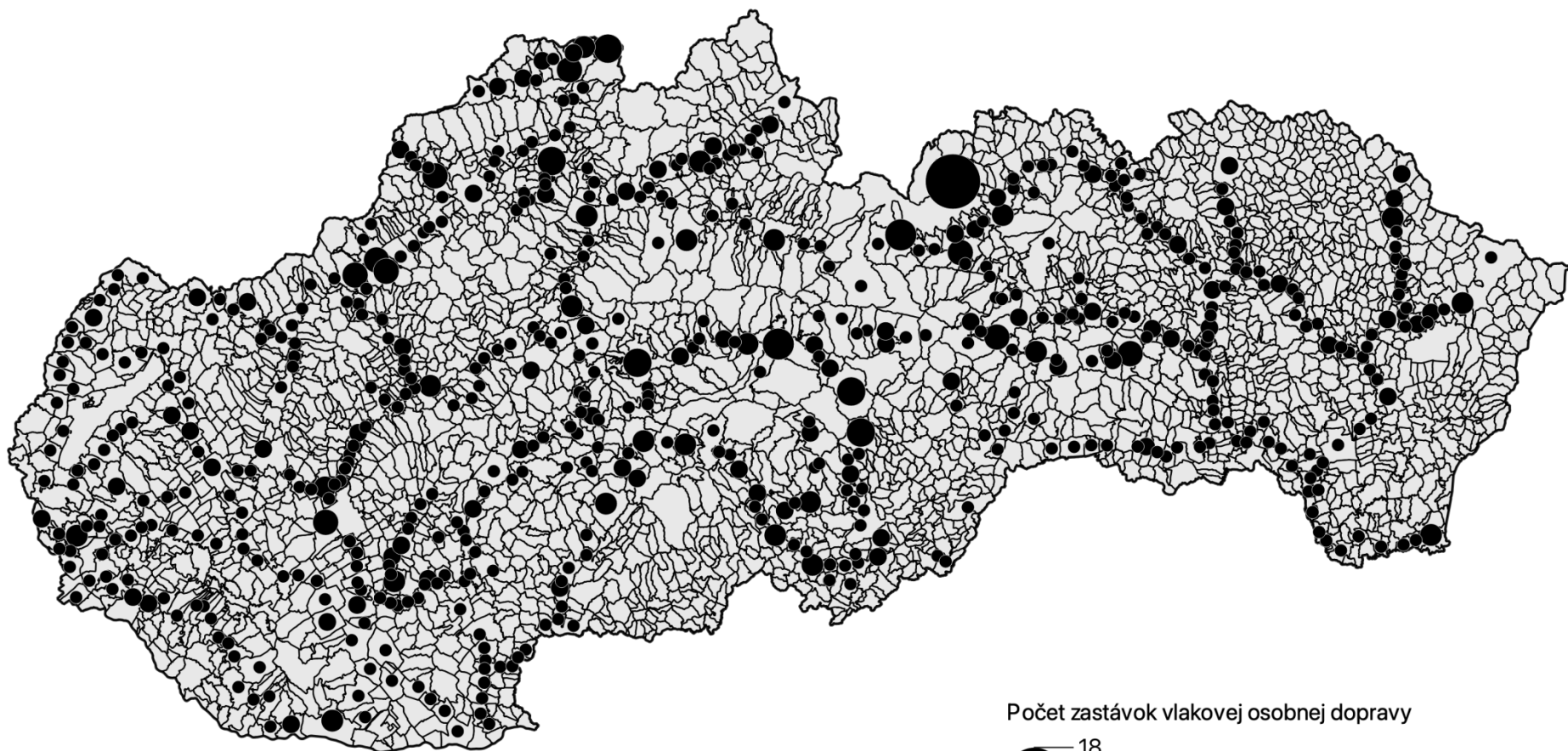


0 25 50 75 km

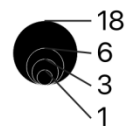


Počet zastávok mestskej hromadnej dopravy



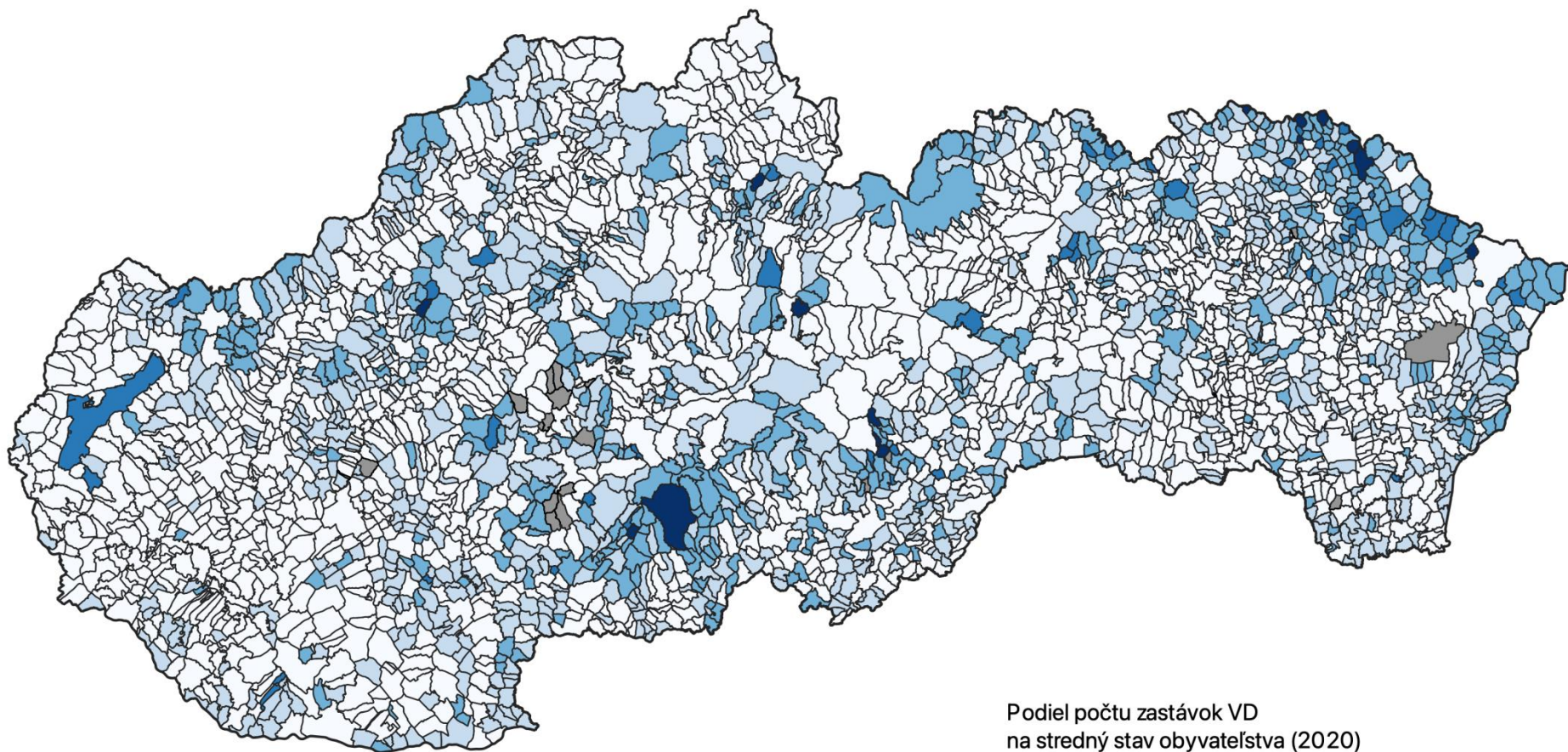


Počet zastávok vlakovej osobnej dopravy

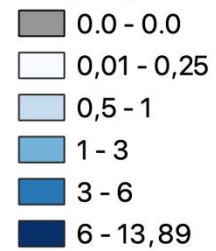


0 25 50 75 km

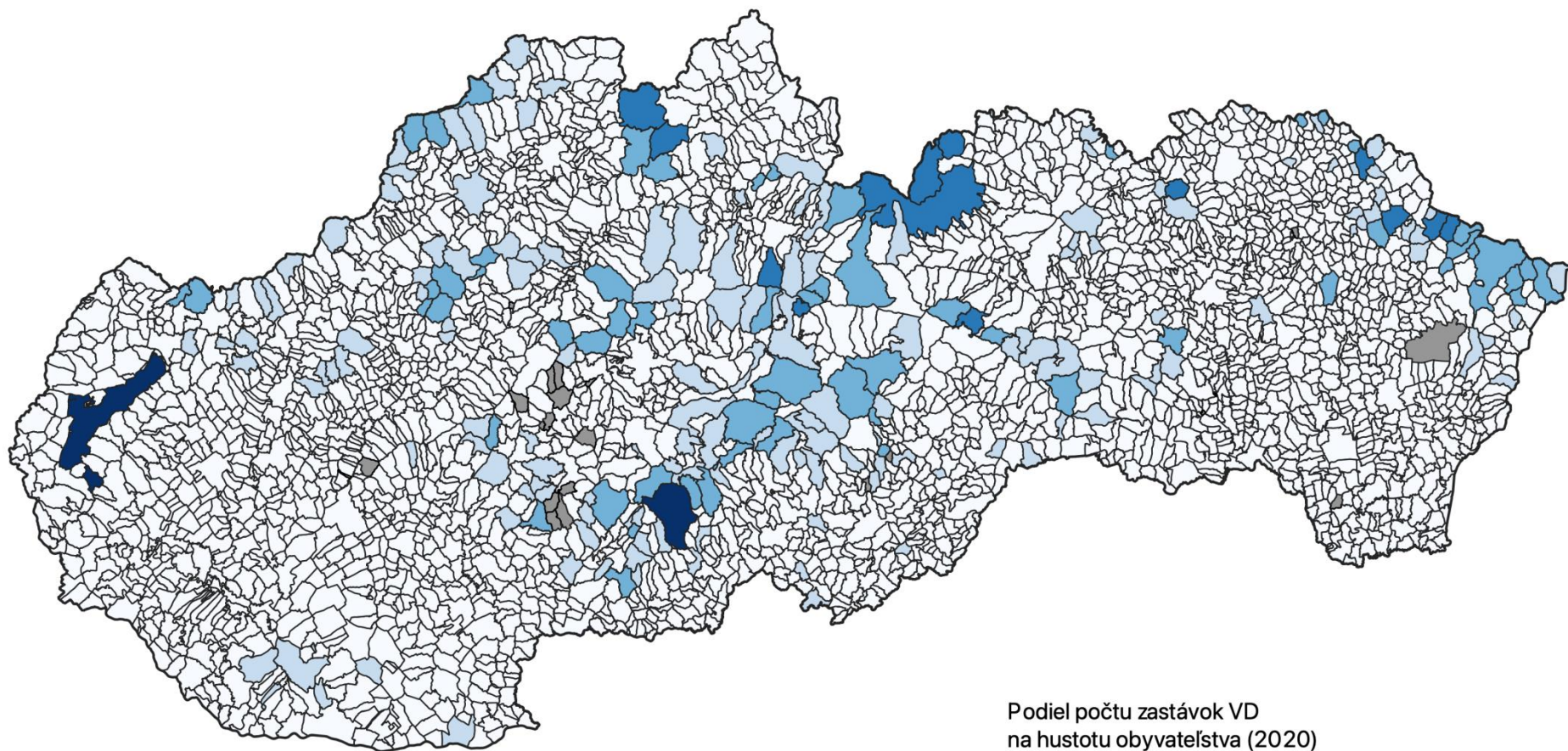
A horizontal scale bar with four segments, marked with the values 0, 25, 50, and 75 km.



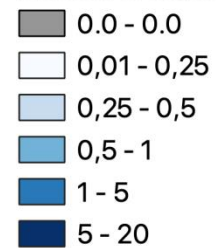
Podiel počtu zastávok VD
na stredný stav obyvateľstva (2020)



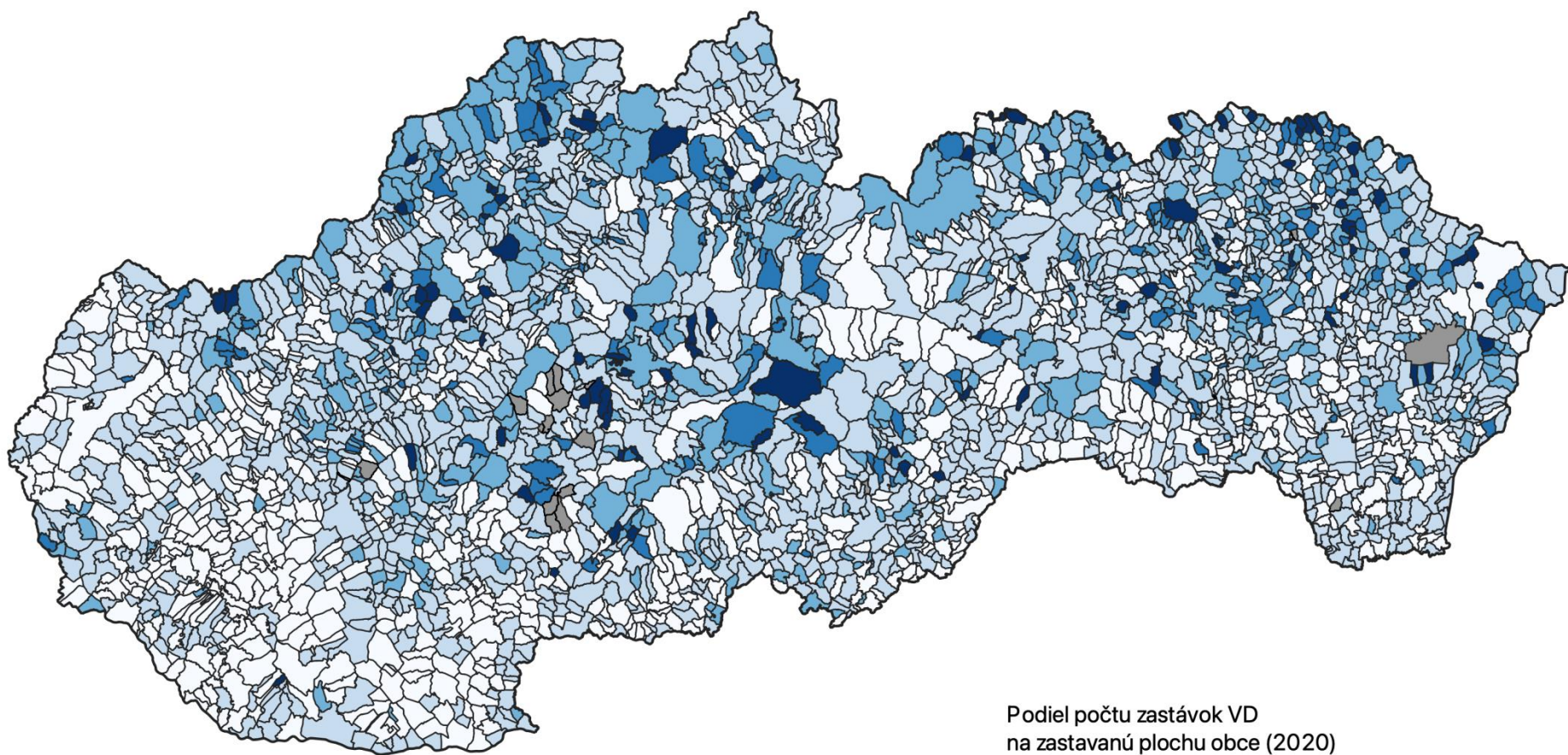
0 25 50 75 km



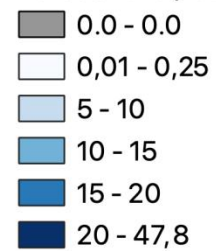
Podiel počtu zastávok VD
na hustotu obyvateľstva (2020)



0 25 50 75 km



Podiel počtu zastávok VD
na zastavanú plochu obce (2020)



0 25 50 75 km

Ďakujeme za pozornost a
hlavne za trpezlivosť!



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MLÁDEŽE A TĚLOVÝCHOVY