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Commuting and functional region

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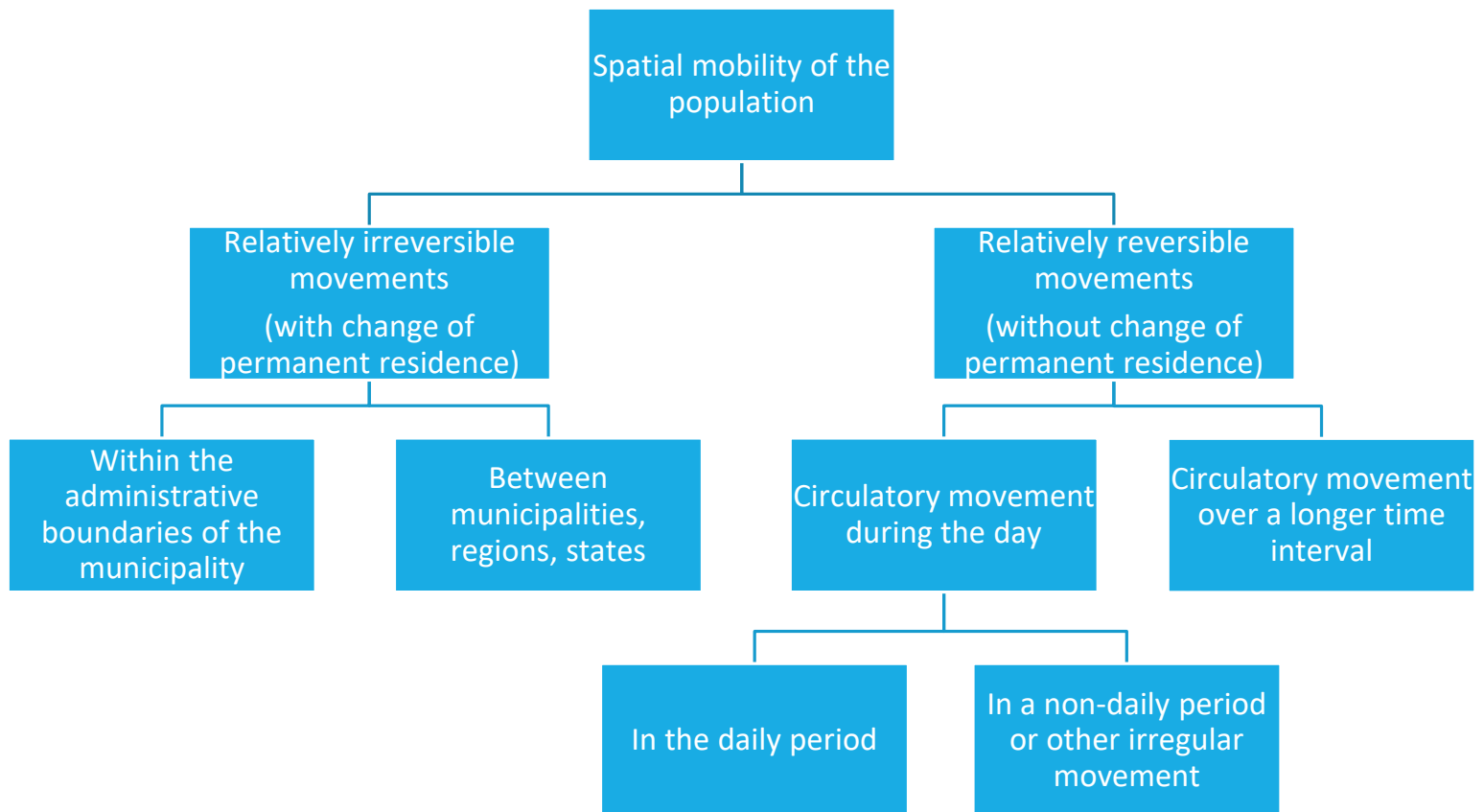


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BASIC FORMS OF SPATIAL MOBILITY



COMMUTE

Commuting to work and school

- A significant component of spatial mobility of residents
- Caused by a mismatch between the deployment
 - Economically active population/population groups attending schools and job opportunities/schools
 - Job opportunities and schools are usually very concentrated

COMMUTE

- A topic for approximately the last 100 years
- The rise of commuting with the rise of large-scale industrial production
 - Prussia in the 1st half of the 20th century – survey of work commutes in cities with more than 100 thousand inhabitants
 - Switzerland, England from 1921, Netherlands and Belgium 1947, France 1954, USA 1960
 - Czech Republic since the 1921 census, but analysis of the workplace-residence relationship only since 1961
- Growing volume of commuting, changing character – the importance of social, economic, technological or environmental dimensions is also growing
- The importance of commuting analysis?

COMMUTE

□ Essential information about:

- The extent (volume) of the commute
- Commuting direction
- Commuting frequency
- + characteristics of commuters, means of transport, routes

COMMUTE – DATA SOURCES

☐ Direct

- SLDB
- Labour force sample survey
- Questionnaire surveys

☐ Indirect

- Employer data
- Company database
- Carrier database
- Mobile operator data

☐ Exhaustive

☐ Selection

COMMUTE 2021

Territory	Total Employed	At Usual Residence abs.	At Usual Residence %	Commute Within CR abs.	Commute Within CR %	Commute Abroad abs.	Commute Abroad %	No Fixed Workplace abs.	No Fixed Workplace %	Unspecified abs.	Unspecified %
Czech Republic	5,290,071	1,011,538	19.1	3,568,446	67.5	74,198	1.4	493,756	9.3	142,133	2.7
Capital City Prague	733,840	141,946	19.3	492,345	67.1	4,076	0.6	82,173	11.2	13,300	1.8
Central Bohemian	726,887	129,193	17.8	502,551	69.1	3,382	0.5	71,851	9.9	19,910	2.7
South Bohemian	314,154	67,611	21.5	199,043	63.4	9,255	2.9	29,025	9.2	9,220	2.9
Plzeň	295,810	54,151	18.3	197,492	66.8	10,630	3.6	24,448	8.3	9,089	3.1
Karlovy Vary	130,956	29,633	22.6	75,549	57.7	11,108	8.5	10,113	7.7	4,553	3.5
Ústí nad Labem	369,950	76,638	20.7	237,159	64.1	10,610	2.9	31,717	8.6	13,826	3.7
Liberec	213,877	44,983	21.0	140,180	65.5	1,879	0.9	19,108	8.9	7,727	3.6
Hradec Králové	266,948	55,371	20.7	177,944	66.7	1,349	0.5	24,107	9.0	8,177	3.1
Pardubice	255,984	49,736	19.4	175,012	68.4	1,375	0.5	23,067	9.0	6,794	2.7
Vysočina	246,077	48,735	19.8	166,914	67.8	1,803	0.7	22,756	9.2	5,869	2.4
South Moravian	603,968	106,082	17.6	417,914	69.2	9,379	1.6	57,571	9.5	13,022	2.2
Olomouc	301,779	56,930	18.9	207,742	68.8	2,029	0.7	27,013	9.0	8,065	2.7
Zlín	278,753	52,932	19.0	192,159	68.9	2,325	0.8	24,987	9.0	6,350	2.3
Moravian-Silesian	551,088	97,597	17.7	386,442	70.1	4,998	0.9	45,820	8.3	16,231	2.9

COMMUTE 2021

Territory	Total	Same Muni Abs.	%	Diff Muni Abs.	%	Diff Dist Abs.	%	Diff Reg Abs.	%
Czech Republic	3,568,446	1,539,021	43.1	1,110,573	31.1	486,879	13.6	431,973	12.1
Capital City Prague	492,345	447,273	90.8	x	x	x	x	45,072	9.2
Central Bohemian	502,551	95,086	18.9	159,920	31.8	60,712	12.1	186,833	37.2
South Bohemian	199,043	73,895	37.1	88,006	44.2	24,216	12.2	12,926	6.5
Plzeň	197,492	79,032	40.0	55,458	28.1	52,307	26.5	10,695	5.4
Karlovy Vary	75,549	28,077	37.2	32,258	42.7	9,737	12.9	5,477	7.2
Ústí nad Labem	237,159	84,536	35.6	93,894	39.6	31,584	13.3	27,145	11.4
Liberec	140,180	57,122	40.7	47,590	33.9	16,917	12.1	18,551	13.2
Hradec Králové	177,944	64,705	36.4	75,941	42.7	18,925	10.6	18,373	10.3
Pardubice	175,012	61,411	35.1	73,041	41.7	18,447	10.5	22,113	12.6
Vysočina	166,914	57,784	34.6	75,819	45.4	14,942	9.0	18,369	11.0
South Moravian	417,914	185,188	44.3	104,127	24.9	110,125	26.4	18,474	4.4
Olomouc	207,742	75,863	36.5	92,602	44.6	21,869	10.5	17,408	8.4
Zlín	192,159	64,895	33.8	92,373	48.1	19,386	10.1	15,505	8.1
Moravian-Silesian	386,442	164,154	42.5	119,544	30.9	87,712	22.7	15,032	3.9

COMMUTE 2021

Major commuting centers

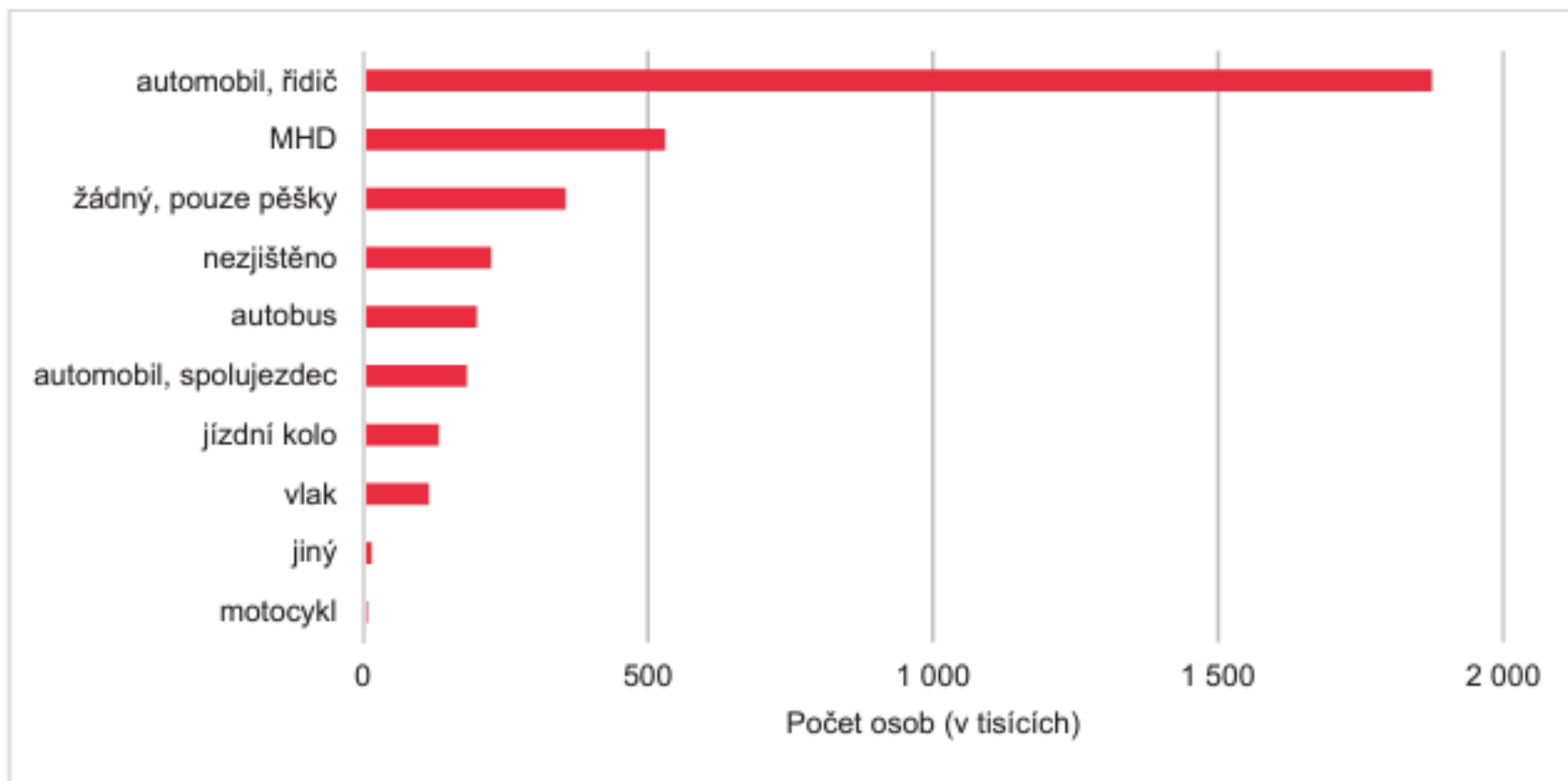
Municipality Name	Commuters to Employment Total	Municipality Name	Commuters to Employment Total
Praha	225,320	Pardubice	23,074
Brno	91,069	Liberec	18,015
Ostrava	60,351	Jihlava	17,849
Plzeň	37,639	Zlín	17,770
Olomouc	31,479	Opava	14,456
Mladá Boleslav	31,225	Ústí nad Labem	13,264
České Budějovice	28,877	Kladno	12,308
Hradec Králové	25,675		

School commuting centers

Municipality Name	School Commuters	Municipality Name	School Commuters
Praha	54,564	Liberec	6,258
Brno	32,992	Zlín	6,009
Plzeň	14,387	Ústí nad Labem	5,191
Olomouc	14,017	Mladá Boleslav	4,934
Ostrava	13,223	Jihlava	4,868
České Budějovice	12,372	Kladno	4,763
Hradec Králové	10,128	Opava	4,441
Pardubice	8,350		

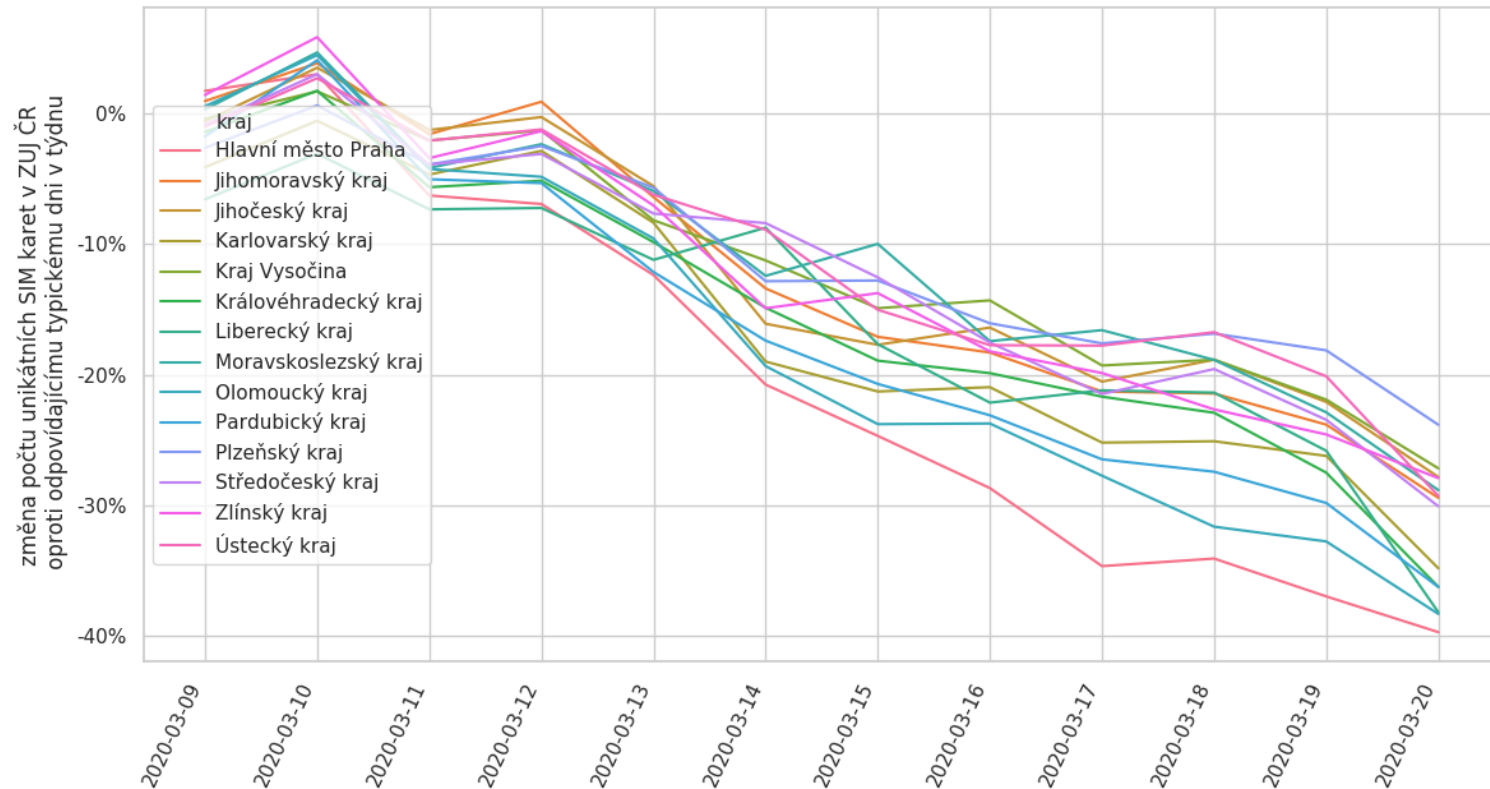
COMMUTE 2021

Graf 12.1 Vyjíždějící do zaměstnání podle hlavního dopravního prostředku



EXAMPLE OF USING MOBILE OPERATORS' DATA

Pokles mobility obyvatelstva v krajích ČR (průměr za ZUJ v krajích)



<https://data.gov.cz/%C4%8DI%C3%A1nky/geoloka%C4%8Dn%C3%AD-data-mobiln%C3%ADch-oper%C3%A1tor%C5%AF-principy-p%C5%99%C3%ADklady-ot%C3%A1zky>

EXAMPLES OF DATA PRESENTATION

<https://scitani.gov.cz/cesty-do-zamestnani-a-skol-6493-6005>

<https://geodata.csu.gov.cz/as/dojizdka/>

<https://app.iprpraha.cz/apl/app/casoprostorove-chovani-uzivatelu/>

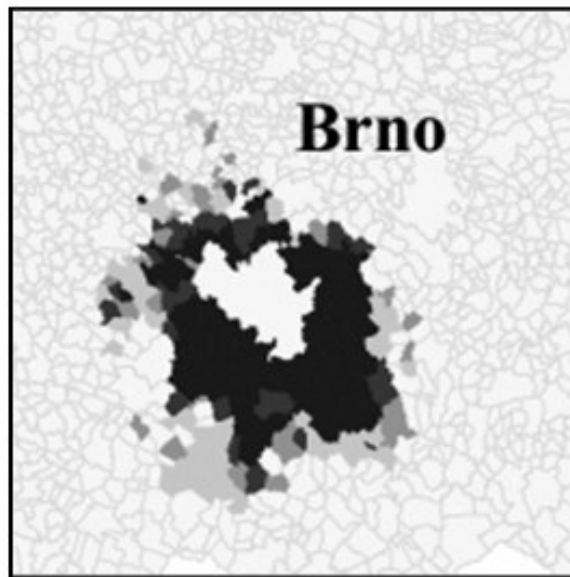
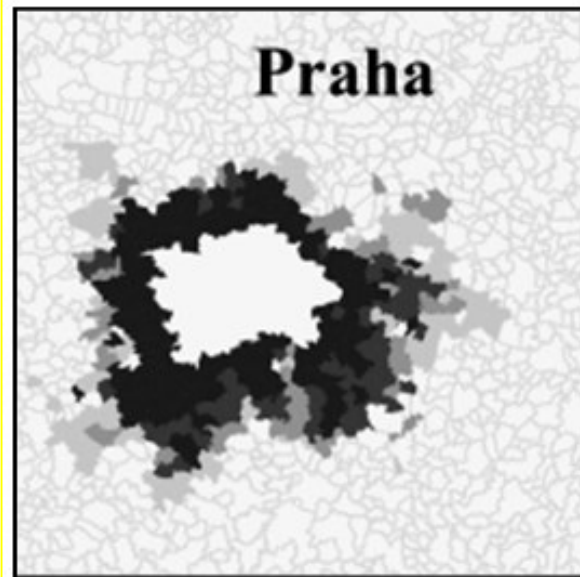
INDICATORS

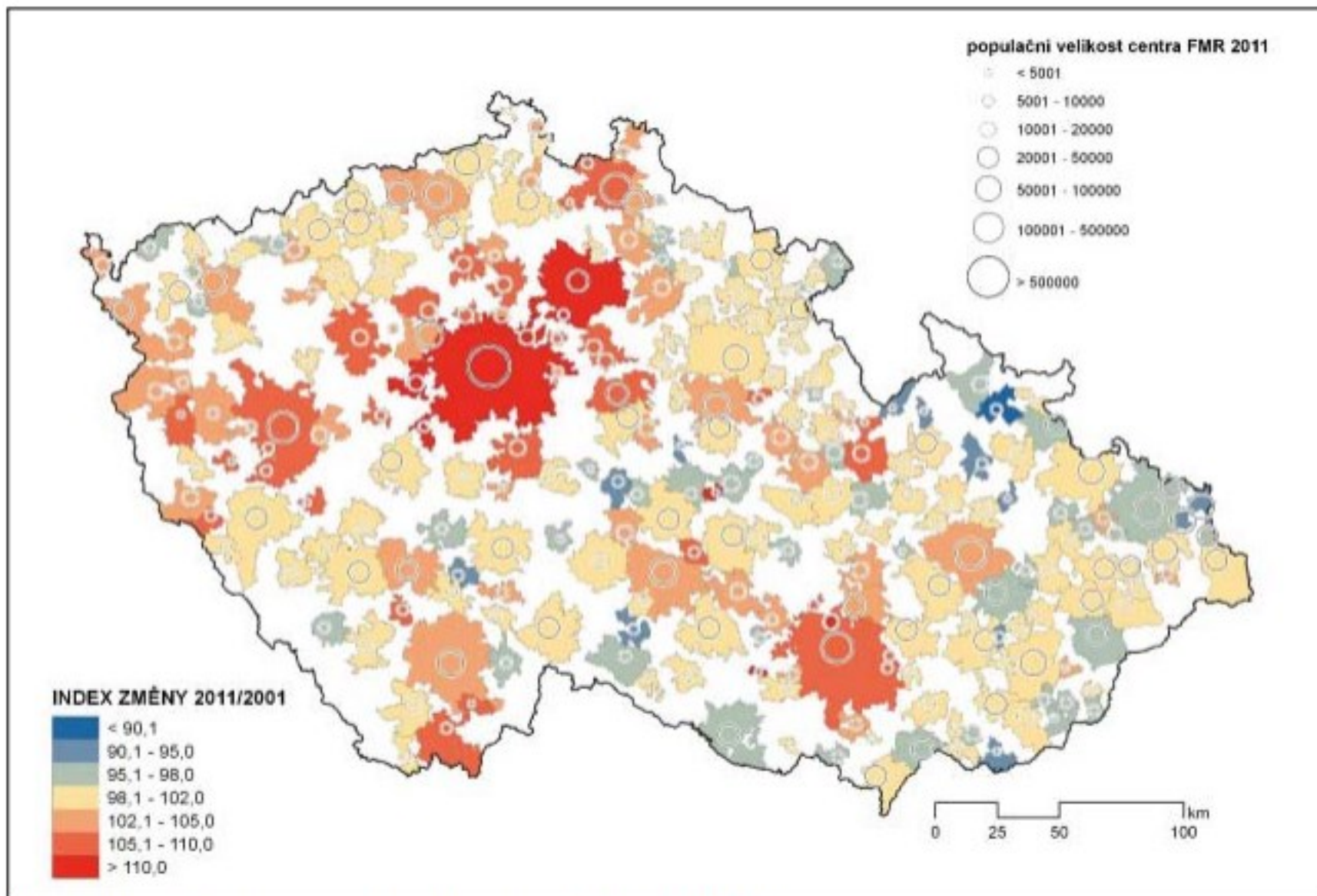
- absolute numbers of commuters/departures,
- commuting/outgoing balance
 - commuter - outgoing, or outgoing - commuter,
- Commuting intensity / commuting intensity (the share of commuting out of the total economically active population of a given settlement),
- number of occupied jobs in a given municipality (occupied jobs = economically active + commuters – outbound workers, can also be converted to 100 or 1000 economically active),
- commuting / departure regions (region, area from where people commute to a certain center)
 - First, it is necessary to define the centers (e.g. by the number of occupied jobs, by the number of economically active people, the prevalence of commuting over commuting, etc.)
 - in the second step, the commuting region is defined – the municipality is assigned to the relevant center based on the prevailing gradient

REGIONALIZATION

- functional (nodal) region
 - Based on internal cohesion – spatial relations maximally realized within the region and movement across its borders minimized – “closedness” of the region
 - Temporal and spatial stability of the delimitation

FUNCTIONAL URBAN REGION





Obr. 6: Vývoj počtu obyvatel v městských regionech Česka 2001–2011

SÝKORA, Luděk and Ondřej MULÍČEK. Urbanization and suburbanization in the Czech Republic at the beginning of the 21st century. *Urbanism and territorial development*. 2012, 15(5): 27-38.