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OVERLAPPING COMMUTING IN THE REGION OF SOUTH MORAVIA

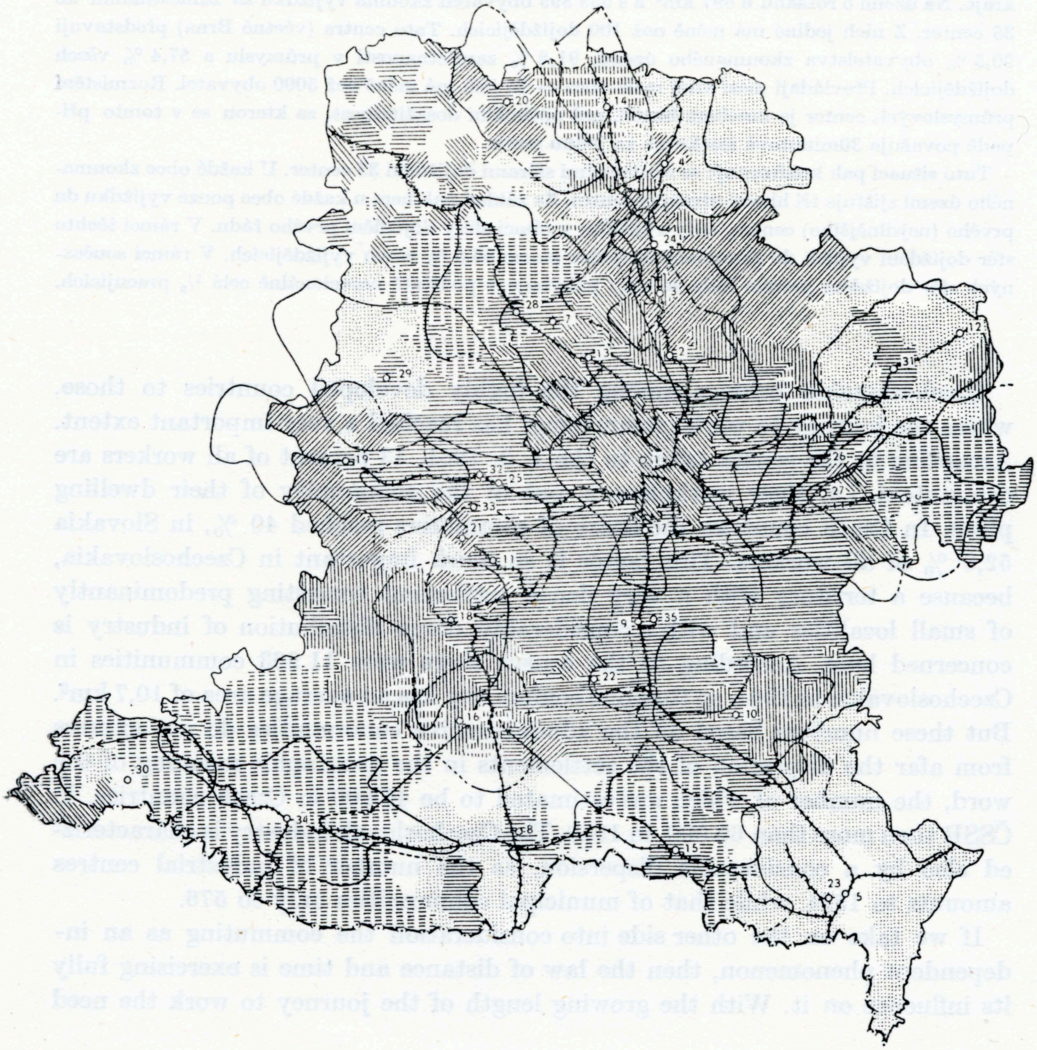
Překrývající se dojížďka v Jihomoravském kraji. — Autor se zabývá problematikou dojíždění s ohledem na stav rozmístění center průmyslu a míst bydliště na části území Jihomoravského kraje. Na území o rozsahu 6 597 km² a s 953 899 obyvateli zkoumá vyjížďku za zaměstnáním do 35 center. Z nich jediné má méně než 100 dojíždějících. Tato centra (včetně Brna) představují 50,5 % obyvatelstva zkoumaného území, 91,8 % zaměstnanosti v průmyslu a 87,4 % všech dojíždějících. Převládají mezi nimi malé obce — 25 jich má méně než 5000 obyvatel. Rozmístění průmyslových center je mnohem hustší, než optimální dosažitelnost, za kterou se v tomto případě považuje 30minutová isochrona za jednu cestu.

Tuto situaci pak konfrontuje se skutečnými sférami dojíždění 35 center. U každé obce zkoumaného území zjišťuje tři hlavní atrakční centra. Za základ pak bere u každé obce pouze vyjížďku do prvého (nejsilnějšího) centra, tedy vyjížďku v rámci sféry dojíždění prvého řádu. V rámci těchto sfér dojíždění vyjíždí do zkoumaných center pouze 66,5 % všech vyjíždějících. V rámci současných sfér dojíždění prvého řádu se tedy pohybuje v podstatě neracionálně celá $^1/_3$ pracujících.

Czechoslovakia belongs among the highly developed countries to those, where the journey to work (commuting) has reached a very important extent. According to the census taken to the 1. 3. 1961, 43 percent of all workers are commuters, i.e. their workplace is out of the community of their dwelling place. In Czech countries the share of commuters reached 40 %, in Slovakia 52,8 % of all workers. This factor is so much important in Czechoslovakia, because a territory with a very dense settlement consisting predominantly of small localities and with a considerably dense distribution of industry is concerned here. According to the census there were 11 963 communities in Czechoslovakia in 1961, so that one community has an average area of 10,7 km². But these numbers based on the administrative communities do not express from afar the dispersion of the settlements in the geographic meaning of the word, the number of which was estimated to be 45 000 in Czech countries, in ČSSR then more than 60 000, in 1950. The Czechoslovak industry is characterized also by a considerable dispersion, as the number of industrial centres amounts to 1524, while that of municipal communities only to 576.

If we take on the other side into consideration the commuting as an independent phenomenon, then the law of distance and time is exercising fully its influence on it. With the growing length of the journey to work the need

of time is increasing obviously to a certain limit, behind which the commuting becomes unremunerative. The problematics is more complicated, as the present stage of the dislocation of industry shows often the results of the preceeding development, which is much denser than the certain tolerable attainability. The most favourable conditions are created by this for many industrial centres to be able to recruit the labor forces mutually of their backlands. The too dense distribution of industry is just an important geographically conditioned reason for the origin and development of the disadvantageous crossing commuting, which does then cause the strong endosmosis and the overlapping of the spheres of commuting, the competition of many industrial centres and the weakening of the effective utilization of their backlands.



The situation sketched generally in the specific conditions of Czechoslovakia, is shown concretely on the example of the commuting on the territory of the former administrative region of Brno (Moravia), with the exception of the two most northern districts. Our analysis concernes the area of 6597,8 km², on which 953 899 inhabitants were living to the 1. 3. 1961. Brno, which is the centre of this territory, is the third largest industrial centre and the second largest centre of the machine industry in Czechoslovakia. Besides Brno 34 further industrial centres of this region having (with the one exception of Vranov

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Explanations to the cartogram:

1. List of the centres: 1. Brno, 2. Adamov, 3. Blansko, 4. Boskovice, 5. Břeclav, 6. Bučovice, 7. Drásov, 8. Hrušovany n. J., 9. Hrušovany u B., 10. Hustopeče, 11. Ivančice, 12. Ivanovice n. H., 13. Kuřim, 14. Letovice, 15. Mikulov, 16. Miroslav, 17. Modřice, 18. Moravský Krumlov, 19 Náměšť n. O., 20. Olešnice, 21. Oslavany, 22. Pohořelice, 23. Poštorná.,24. Rájec n. Sv., 25. Rosice, 26. Rousínov, 27. Slavkov, 28. Tišnov, 29. Velká Bíteš, 30. Vranov n. Dyjí, 31. Vyškov, 32. Zastávka, 33. Zbýšov, 34. Znojmo, 35. Židlochovice.

2. State frontier.

3. Boundaries of the former region of Brno and of the investigated area.

4. Boundaries of the territory of the town Brno.

5. Railway.

6. 30 min. isochrone (at Brno the 60 min. one).

7. 15 min. isochrone.

8. The isochrone for the respective centre left out.

9. Spheres of commuting of the first order:

a) Brno.

b) Adamov, Ivanovice n. H., Hustopeče, Mor. Krumlov.

c) Kuřim, Pohořelice, Slavkov (Austerlitz), Vranov n. Dyjí, Zbýšov.

d) Blansko, Ivančice, Náměšť n. O., Olešnice, Židlochovice.

e) Boskovice, Břeclav, Hrušovany n. J., Oslavany, Velká Bíteš, Vyškov.

f) Bučovice, Mikulov, Znojmo, Tišnov.

g) Letovice, Miroslav, Rájec n. S., Rousínov.

10. 0 9 km.

n. Dyjí) more than 100 in-commuters, were taken into consideration. As for the number of inhabitants, three of them have less than 2000 inhabitants, 22 belong to the group 2000—5000 inhabitants, 6 to the group 5000—10 000 inhabitants, 3 to the group 10 000—25 000 inhabitants, and the last one, Brno, has 320 000 inhabitants. It is evident, that the prevailing part of the workplaces and of the in-commuting centres are small communities. The investigated 35 centres represent 50,5 % of the population of the studied territory, 91,8 % of the employment in industry and the proportion of all in-commuters reaches in them 87,4 %. The investigation of the commuting was carried out by the planning commission for the region of Brno in 1957. There were established on the whole 71 595 out-commuters on the investigated territory.

The development of the dislocation of industry reached such an extent on the investigated territory, that it is predominantly much denser, than the certain optimum attainability, which has been choosen and not derived. The suppositions for this fact are shown graphically on the enclosed cartogram. They are plotted here for the investigated centre the isochrones of 30 minutes for one way. The centre of these isochrones is always the railway-station and the bus-station. Only for the town Brno the 60-min. isochrone is drawn, constructed in a different way. Here even the average attainability of the railway- and bus-station from the individual localities of industry and from other ones is taken into account, computed of the complex of more than 26 000 in-commuters. We did not plotted the 30 minutes' isochrone for the sake of simplification of the figure for the 6 centres (specified in the cartogram) neighbouring with the further investigated centre. We plotted only the 15 minutes' isochrone for the further three centres. The isochrones are constructed on the basis off all existing transport opportunities. We leave out the question of the so called optimum attainability and we use the 30 minutes' isochrone as the working one. It follows from the cartogram that especially on the territory northwards, westwards and eastwards of Brno, the territories attainable easily from the individual centres are overlapping several times; a better situation can be found only in the stripe along the southern boundaries of the region and of the border of the region NW and NE of Brno.

To be able to establish the influence of this situation on the simultaneous overlapping of the spheres of commuting and the rationality of the movements, we computed for all communities of the investigated area the out-commuting into the first three most preferred workplaces. Of every emigration community working people are out-commuting to some different centres. The fact, that of one community all workers would commute out only to one centre, does not occur. On the contrary, at the prevailing part of communities the out-commuting to a larger number of centres is characteristic. Having taken into consideration at every community only the out-commuting to the first three

centres, every of the emigration communities is arranged into the sphere of commuting of three of the investigated 35 centres. 62 607 workers were out-commuting on the whole to the investigated centres and we seized 89 % of them by this method. But it was possible to draw in our cartogram only those communities for every centre, from which one is out-commuting on the first place. But these spheres of commuting (we shall call them the spheres of commuting of first order) show graphically that there is a great difference among the present spheres of commuting and the limit of the optimum attainability of the individual centres. For the sake of conciseness only the main features of this figure can be emphasized. The very strong centre — such as Brno indisputably — overlaps the part of the centres in its surroundings, especially in south, which is, as for the industry, weaker. Due to the economic pressure of Brno, the spheres of commuting of the first order of all surrounding centres (with the exception of the stripe along the southern border) are developed excentrically and this pressure is transfered gradually on further remote centres. The spheres of commuting of the first order of our centres cover in substance the whole investigated territory.

Theoretically, if all the out-commuters of the respective sphere of commuting were out-commuting to the respective centre, the 100 % of out-commuters should be identical with the extent of the investigated area. But we notice here, just due to the decisive influence of the above mentioned fact, that to these centres only 74,7 percent are commuting of the number of out-commuters we established. The rest, i.e. 25,3 % belongs consequently to the category of the crossing commuting. If the whole out-commuting and not only the out-commuting to the first three most preferred centres is taken into account at every emigration community, we can see, that 66,5 % only of all workers commuting out on the territory of the spheres "of the first order" are in-commuting in these centers. Consequently the commuting of the whole one third of workers is not rational. Their considerable part (especially with the exception of Brno, where the extent of the in-commuting is exceeding), belongs nevertheless to the category of the optimum commuting from the view of the attainability of the centres.

Owing to the crossing we get this resulting picture of the investigated territory. The territory of the three spheres of commuting of all centres occupied 15 342,7 km^2 on the whole and 1 697 622 inhabitants were living in the communities lying on this territory. It appears, that the mentioned centres recruit the labor forces due to the crossing of the in-commuting of the territory the area of which is in fact 2,3 times larger than that of the investigated territory and the number of inhabitants of which is 1,8 times greater than the number of inhabitants of the same territory. Brno was not included into this balance with respect to the misstaking due to the influence of the metropolis. The respective multiples would be including this town 2,5 resp. 2,7. These high

coefficients are the index of the considerable crossing of the in-commuting and out-commuting and they prove the movement between the workplace and the dwelling place not to be quite rational. This question becomes to be of growing actuality, because of the important further increase in the commuting (and so even in its negative aspect) since 1957.

It follows consequently that in such complicated territories as were shown here, the regionalization of the in-commuting is desirable, which is assumed perspectively here. The regionalization of the commuting means not only savings on the dispersed and uselessly crossing traffic and on the possibility to concentrate it to advantage, but it has for aim to improve substantially the situation of the commuters.