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PROBLEMS CONCERNING THE STUDY OF POPULATION MIGRATION IN SLOVAKIA

The author informs on the principal directions of studies oriented to the geographical aspects of population migration in Slovakia. He points out that, in order to improve the intuitiveness and general applicability of models on the migration of population, we must still better know all aspects of this process. Therefore, based on analyses of original data on population migration in Slovakia, a systematic study of its geographical aspects was initiated. From several cartographical bases utilized for this study, the author presents three examples (Fig. 1, 2 and 3). The achieved results will contribute to formulate the general regularities and models of this complicated process.

Changes in the places of permanent stay of inhabitants attain, in the last years, always increasing intensity. This is primarily connected with the translocation and origin of new centers of gravity of the economic activities. This process introduces in the landscape a series of new, always more markedly appearing problems. It is worthy to mention the following ones of them:

— Strong growth of the population in towns and, consequently, rapid urbanization of the landscape.

— Depopulation of the country regions and, consequently, the tendencies towards successive changes in the functions of these regions.

— Changes in the population's structure and, connected with them, changes in the requirements to offers from equipments of the tertiary sphere.

— Changes in the demographical potential of different territories, and the like.

For determining the extent of these changes, a series of numerical data exists. They make possible to determine their dimensions, to recognize their structure; they partly explain the causes of their origin, or indicate the fundamental trend of their future evolution. In spite of this, works devoted to concrete questions of the population migration, within certain concrete territories, represent but a minority of those, which solve these problems in the theoretical-conceptual plain, and which often lead to attempts to formulate mathematically the ascertained theoretical relationships [3, 4, 6, 7]. This trend is undoubtedly connected not only with the generally widespread effort to

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model relationships inciting the interest of geography. To a certain measure, it also reflects the complicated situation which is characteristic for the data on population migration. Since the extensive set of data, contained in official statistics, is often generalized into summary ciphers for the administrative units of middle level, or for chosen larger cities, the possibility disappears to judge in detail the real situation of the landscape, to which greater importance is attributed within geographical research than within the sphere of demographical research.

Likewise the specific features of each region, together with the particularities of its centre or several centres, substantially contribute to that the constructed, up to now, models of population migration have, in concrete cases, few adherents who would confirm their validity and especially, the application of these models in broader territorial dimensions does lead to intuitive results. This statement is true, although the essential part of models is conceived on logically correct and empirically confirmed conclusions. But the existing dependences betwen various elements involved in the models, in mathematical forms, are mostly expressed only on the level of direct or indirect relations. However, the coefficients of these relations remain the main bearers of inaccuracy, i. e. the problematic places of a broader applicability of such models.

One of the ways of eliminating or, at least, moderating the influences of these deficiencies undoubtedly consists in the further deepening of knowledge on the individual aspects of the process of population migration, demonstrated on concrete examples. The palette of views on the migration of population, in concrete areas, can be very wide and therefore, it is a very difficult task to create a basis sufficiently rich for constructing models on the populations's migration. It can be fulfilled by successive and systematic solution of its different aspects, from the simple to more complicated ones, from the better known to lesser known notions. The set of bases, conceived in this way, has the perspective to result in a basis appropriate also for formulating a model of population migration, which would more intuitively illustrate this process with its spatial bonds, and enabling to predict its future trend as well.

Collecting original data on the changes of permanent residences in SSR belonged to the introductory works for creating a data basis, understood in this manner, on the migration of population. This eliminated the dependence on the essentially generalized data from the official, published statistics on population migration. At the same time, favourable conditions have been accomplished for a through study of spatial relations determined by the attractiveness of immigration centres, by the mutual relationships of immigration centres, by their distribution within the set of new places of permanent residences of inhabitants. Furthermore, the original data on changes in the population's permanent residences in SSR facilitate to study in detail the role of distance, in relation to the intensity of migration into immigration centres, as well as the demographical structure of migrants and, not last, the reasons which have led to the change of permanent residence (according to the data given by the migrants).

One part of this extraordinarily rich set of data has already been worked up. Many problems are still now discussed or will be solved in the future. Thereby, we reckon with a more detailed determination of the relations betwen changes of residences and going for working, between the attractiveness
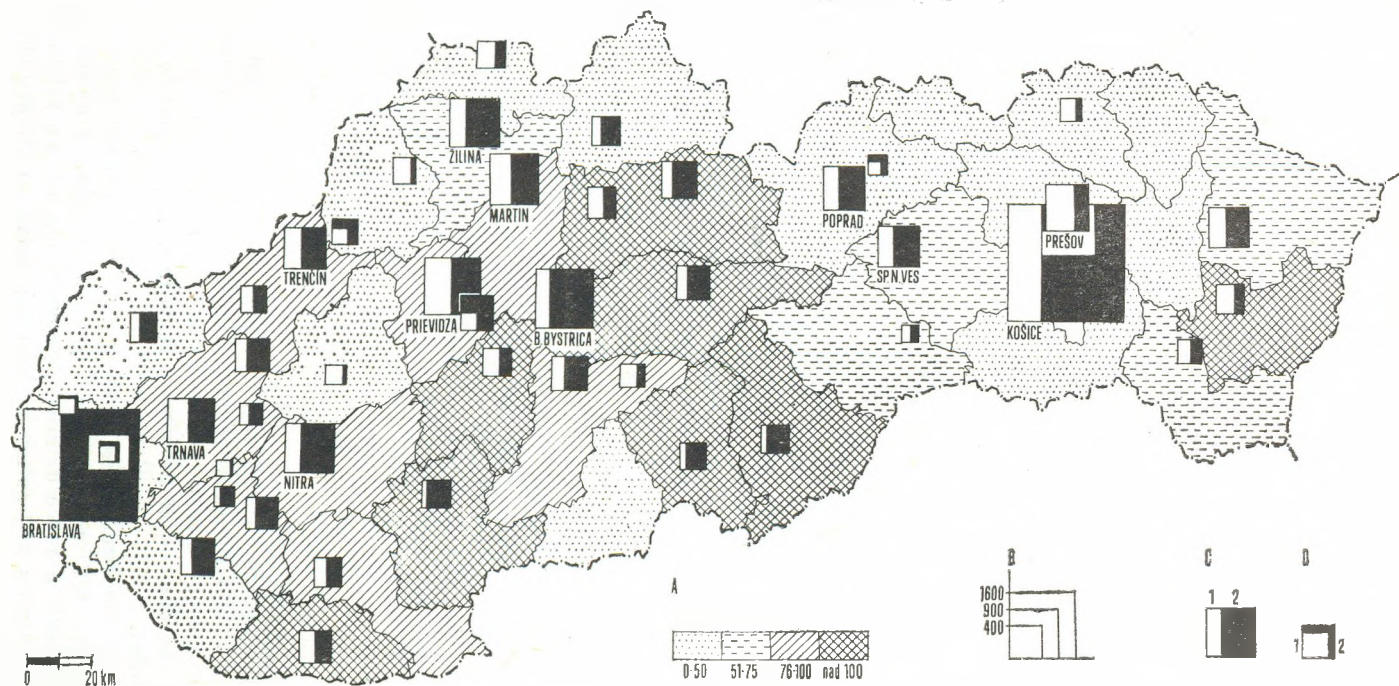
Fig. 1 Growth of the number of population in Slovak towns (average of 1965—69).
A = the share of chosen towns of the district, in the total growth of the district's
population (in %), B = growth of the number of inhabitants in towns, C = share of
the natural (1) and migrational (2) increments, in the total growth of population in
towns, D = share of the natural (1) and migrational (2) increments in towns with
negative migration balances.

of immigration centres and the largeness and structure of their economic bases. Furthermore, questions of the influence of natural elements upon forming immigration centres, the role of transport networks in their transformation and the like, have to be studied too. As counter-poles of the immigration centres, there occur gravity regions of emigration, in which especially questions concerning the population's natural increments, the consequences of immigration for their demographic picture or actual economic basis, for the development of residences and the possibilities of further growth of these regions, in the overall structure of landscape, will be studied.

As concrete examples of cartographical documents, from the series of analyses on population migration in Slovakia, we chose in this article three examples (Fig. 1, 2 and 3).

Fig. 1 illustrates the annual average of population movements in the towns of SSR, having more than 10 thousands inhabitants, and in districtual towns, during 1965—1969 (B). There it can be seen that the majority of Slovak towns is growing. This especially holds for the developing industrial centres. It is also interesting to follow the shares of natural (C1) and migrational (C2) increments, in the total growth of urban population. In the majority of Slovak towns, the increment by migration amounts 55—70 % of the global growth. Only in the most intensively growing towns (Košice, B. Bystrica, L. Mikuláš, Šaľa) and in towns of the southern regions of middle Slovakia, exhibiting the weakest population, the immigration share is higher than 70 %. The growth of medium large industrial centres in Slovakia is more influenced by natural increments (50—65 %). These data illustrate and quantificate not only the great importance immigration for the growth of the number of inhabitants in towns. They also document that the shares of natural and migrational increments, in the total number of city inhabitants, are changing in dependence upon the evolution of the economic base and on the position of towns within the regions, exhibiting different intensities of population activity.

From the standpoint of the number of immigrants (C2), among the towns of SSR, there emerge markedly Košice and Bratislava. The second range is occupied by the towns B. Bystrica, Nitra, Prievidza, Žilina. Martin, Trnava, Prešov, Poprad, Spišská Nová Ves, Trenčín and Humenné. These are towns in which, in the last years, the economic basis and the number of work opportunities have greatly increased. Their important place in the group of Slovakia's immigration centres confirms the close direct dependence betveen the number of immigrants and the offer of work opportunities.

The third relation represented by Fig. 2, consists in the percentual share of increments to the investigated immigration centres, in the total growth of population in the districts where they are placed (A). Especially the extreme values of this index document the high degree of concentration of the population migration to towns, above all in middle Slovakia. This index, trough very simplified, supports likewise the statement about the important role of towns as principal immigration centres and specific communities having markedly positive migration balances.

Fig. 2 demonstrates the immigration spheres (C) of towns in SSR, having more than 10 thousands inhabitants, and of the other districtual towns. The immigration sphere of a certain immigration centre is formed by communities, from which relatively the most persons migrate in someone of the examined
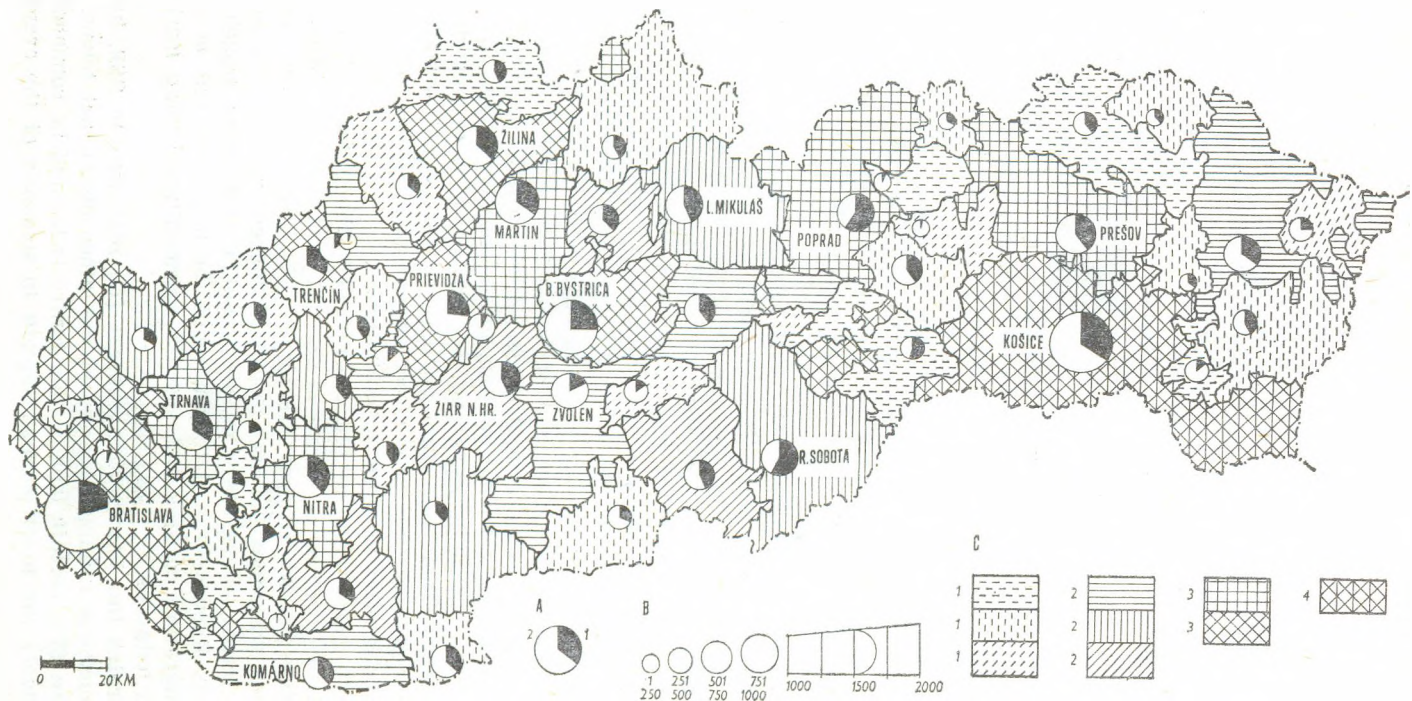
Fig. 2 Immigration zones of selected towns in Slovakia. A = share of immigrants to the centre, from its migration zone (1), from other areas (2). B = average number of immigrants yearly (in 1965—1969). C = Immigration zones of selected towns, according to the number of immigrants yearly: 1 = less than 500, 2 = 500—999, 3 = 1000—5000, 4 = more than 5000.

immigration centres of SSR. In contrast to the situation, when the immigration sphere is defined as an area of communities, from which more than one half of the inhabitants leave for the immigration centre, our definition allowed to cover connectedly the entire territory of SSR. So the fundamental spatial relations of larger and smaller immigration centres got in the foreground. For the sake of clearness, we have drawn the zones of immigration centres, in which yearly less than 500 persons immigrate, with three kinds of hatching (C1), the zones of immigration centres with 500—999 immigrants yearly likewise with three kinds of hatching (C2), and the zones of centres with 1000—5000 immigrants with two kinds of hatching. Moreover, we distinguished the zones of centres with more than 5000 immigrants yearly (C4).

The defined immigration zones represent regions from which dissimilar translocations of inhabitants are realized into the immigration centres. The dimensions of these translocations are indicated by the black parts of rings (A1), implying the mean number of all persons immigrating in one year (B).

From these data, it ensues that the portion of persons coming into an immigration centre from the territory, from which the relative majority of persons migrate to this centre, is most frequently varying from 30 to 45 %. This portion is typical for the developing industrial contres of Slovakia which, owing to the great quantity of persons coming for working, already offer for them dwelling funds too. But at the same time, these centres are also involved in a broader exchange of permanent residences in Slovakia. Towns playing a less important role within this broader exchange of permanent residences, on the territory of SSR, exhibit larger amounts of persons immigrating from their immigration zones (Rimavská Sobota, Lučenec, Čadca, Dolný Kubín, Michalovce). More attractive towns, more intensively engaged in the process of migration in Slovakia (Bratislava, Piešťany, Banská Bystrica, Zvolen) have, on the contrary, lower shares of persons immigrated from their own zones (about 20 %).

But these relations are still affected by some other factors, such as by the dimensions of immigration zones, the density of the immigration centres' network, by the offer of their economic bases in the sphere of work opportunities etc. It is obvious that this sphere of problems has to be studied at large, because just they can provide the main bases for determining prognoses on the evolution of the number of inhabitants in towns. Knowing the population's development in regions, which participate in a decisive manner in the afflux of new inhabitants to towns, is undoubtedly a fundamental presupposition for a real estimate of their further growth. But at the same time, it seems that in some cases, we must know more than the dimension of migration spheres of towns only.

A detailed view on the distribution of interest to migrate in the two largest immigration centres of SSR, Bratislava and Košice (Fig. 3), is given by one of the variants of bases destined for a similar detailed analysis of spatial relations generated by the migration of population.

In these two largest towns of SSR, there are migrating yearly more than 12,5 thousands persons (from them to Bratislava about 56 %), i. e. about 15 % of the total number of migrants on the territory of SSR. As it may be seen from Fig. 3, the interest in these centres is distributed nearly over the whole territory of Slovakia. Nevertheless, we can discern two marked regularities

ensuing from this image. The first one is formed by the expressive boundary between the both centres' area of influence, which approximately passes from the Tatra mountains southwards, to the territory of the Slovak karst. The second is markedly determined by the intensive contacts of Bratislava and Košice with the large towns of Slovakia. Moreover, there is an obvious increased number of immigrants from the near surroundings of both cities conditioned, above all, by persons coming to work in their enterprises.

This kind of bases, illustrating in detail the distribution of the interest to migrate into larger immigration centres, offers an opportunity to demostrate exactly, in concrete dimensions, one part of their relations with the wider surroundings. Especially, in mutual combination, they enable to consider perspectively the possibilities of developing the immigration centres and the regions having passive migration balances.

Up to now, the study of geographical problems of the population migration in Slovakia is in the beginnings. But it has a conception building on that it is necessary to identify the manifold aspects of this process in concrete projections. Their thorough analysis, leading to a synthetical estimation of the population migration in Slovakia, renders possible to formulate the overall regularities and models of this complicated process and, starting from them, to determine the main trend of its evolution. The achievement of this aim has a particular importance for the planning organs, urbanistic plans, for the development of production and the optimum formation of human environment in Slovakia.

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ПЕТЕР МАРИОТ

ПРОБЛЕМЫ СВЯЗАННЫЕ С ИЗУЧЕНИЕМ ПЕРЕСЕЛЕНИЯ НАСЕЛЕНИЯ СЛОВАКИИ

Автор информирует об основных направлениях ориентации изучения географических аспектов переселения населения Словакии. Он разбирает условия, при которых модели переселения населения могут стать более точными и ширее применительными и могут точнее передать существующие пространственные связи. Для того, чтобы выполнить эту задачу, нужно более подробное познание процесса переселения населения и его специфических черт, определенных пространственной дифференциацией его условий. Поэтому на территории Словакии началось систематическое всесторонее изучение географических аспектов переселения населения.

Это изучение исходит из подлинных первоначальных данных, устранивших пространственное обобщение официальной статистики переселения и создавших благоприятные условия для более подробного изучения разных пространственных отношений. В статье как конкретные примеры картографических оснований для анализов переселения населения Словакии даны 3 приложения (рис. 1, 2 и 3). По рис. 1 можно наблюдать не только рост числа населения словацких городов, а также долю естественного и миграционного прироста и долю прироста населения этих городов в общем приросте числа жителей данных районов. Рис. 2 изображает иммиграционные сферы главных миграционных центров Словакии. Иммиграционная сфера центра образована селами, из которых сравнительно большее число лиц переселяется в некоторый из наблюдаемых иммиграционных центров Словакии. В круге изображающем число переселенных в иммиграционный центр, зачерненная часть документирует долю переселенных лиц из иммиграционной зоны. Рис. 3 изображает подробный взгляд на распределение интереса в переселении в два крупнейших иммиграционных центра Словакии — Братиславу и Кошице. Рис. 3 является одним из оснований для подробного анализа пространственных отношений формированных переселением населения.

Изучение географических проблем по переселению населения в Словакии пока находится только в начальной стадии. Но создана уже концепция, которая должна способствовать достижению результатов, при помощи которых будет возможно формулировать общие закономерности и модели этого сложного процесса. Исходя из них, будет можно определить тенденции переселения населения Словацкой Социалистической Республики.

Рис. 1. Рост числа жителей словацких городов (в среднем 1965—1969 гг.). А — доля избранных городов района в общем росте числа жителей района (в %), Б — рост числа жителей города, В — доля естественного (1) и миграционного прироста (2) в общем росте числа жителей города, Д — доля естественного (1) и миграционного (2) прироста в городах с отрицательным балансом переселения.

Рис. 2. Иммиграционные зоны избранных городов Словакии. А — доля числа переселенных в центр из его миграционной зоны (1) и из остальной территории (2). Среднее число переселенных в год (в 1965—1969 гг.). Б — Иммиграционные зоны избранных городов погласно числу переселенных в год: 1 — менее 500, 2 — 500 по 999, 3 — 1000 по 5000, 4 — более 5000.

Рис. 3. Переселение в Братиславу и Кошице из сел Словакии. А — переселение в Братиславу, Б — переселенные в Кошице, В — число переселенных лиц в Братиславу и Кошице.