

8. OUTPUT INDICATORS OF THE HUNGARIAN PUBLIC EDUCATION SYSTEM IN SLOVAKIA



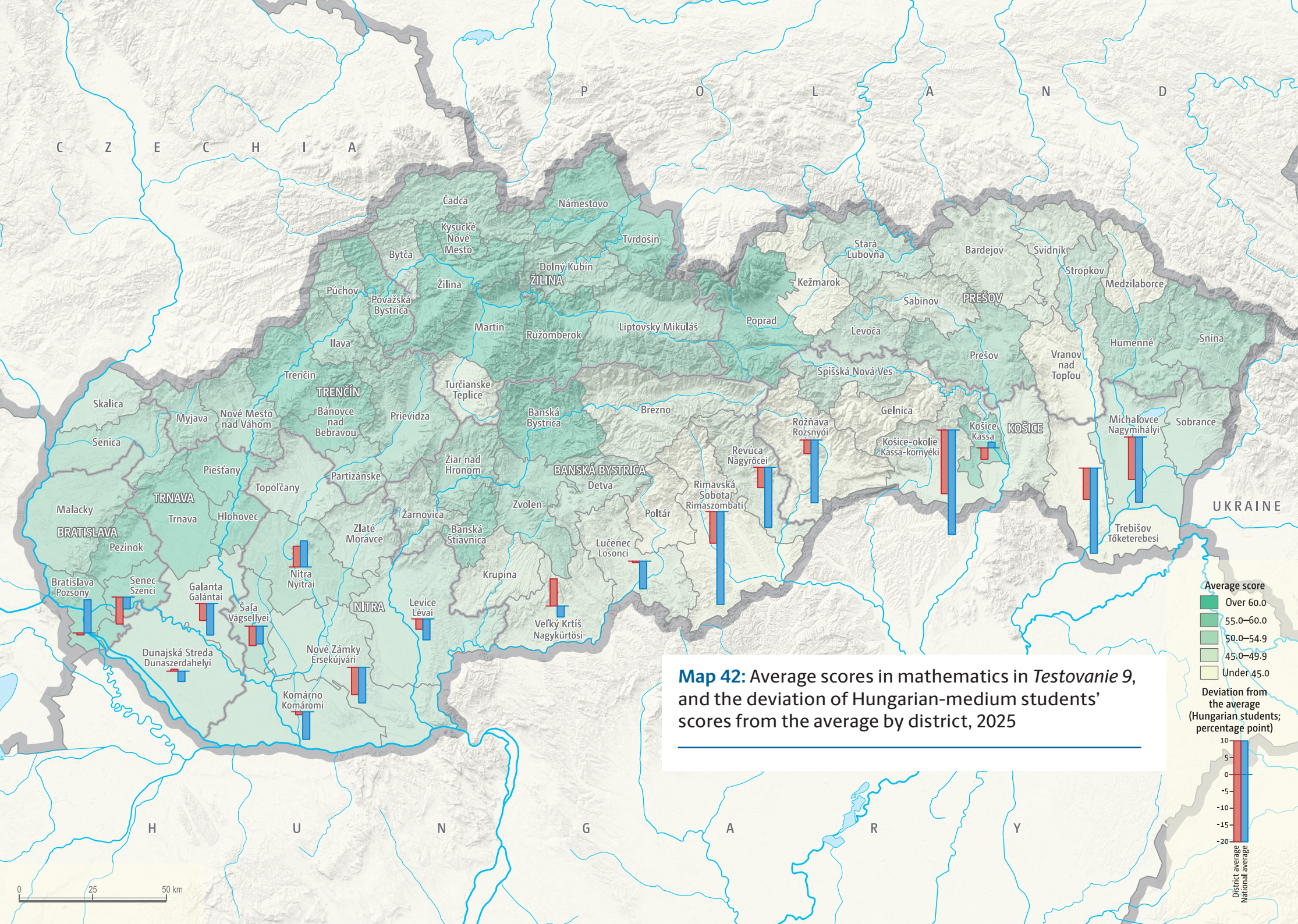
In the first half of our study, we analyzed the “input data,” i.e. the demographic background of Hungarian public education and the child population size with which the system can plan. In this part of the analysis, we focus on what outcomes a minority education system can achieve within an asymmetric majority–minority context, in other words, the “outputs” of Hungarian public education. First, we examine territorial patterns and the performance of students in Hungarian schools based on the 2025 *Testovanie 9* assessment.⁶⁵ We then review the position of the Hungarian population in Slovakia in terms of educational attainment indicators.

Academic Performance of Hungarian Students

We examine the school performance of Hungarian students through a quantitative lens. Our goal is not to dissect the test results themselves, but rather to highlight the structural factors that may underlie the outcomes of students in Hungarian schools relative to national and district averages. To this end, we use the 2025 *Testovanie 9* scores in mathematics and Slovak language as indicators.

In mathematics, the national average score was 57.4 points. The spatial distribution of results displays stark differences: in northwestern Slovakia (essentially north of the Bratislava–Poprad line), scores are above average, while in southeastern Slovakia they are below average. The latter pattern is interrupted only in a patchy way by larger cities and their districts (Map 42).

Particularly low values are observed in areas with higher Roma settlement shares (e.g., the Gemer region). Overall, this pattern aligns closely with the country’s economic spatial structure.⁶⁶



Against this background, it is unsurprising that a significant difference also appears by the language in which the test was taken. While the average mathematics score for tests taken in Slovak was 58, the average for tests taken in Hungarian was only 46.9. This indicates a substantial disadvantage for Hungarian schools.

The *Testovanie 9* results are also consistent with findings reported by Papp, who, analyzing PISA 2022 result for countries with sizeable Hungarian minority communities, concluded that students studying in Hungarian “perform significantly lower than majority students studying in Slovak.”⁶⁷ His analysis also suggests that in Slovakia (unlike, for example, Romania and Serbia) there is no measurable test-score disadvantage associated with not studying in Hungarian (although it does not confer an advantage either). Instead, family background plays a major role, and in this respect the position of Hungarian students in Slovakia appears to be less favorable than that of majority students.⁶⁸

While PISA data on Hungarians in Slovakia do not reveal regional differences, *Testovanie 9* allows territorial patterns to be tracked. Among Hungarian-medium students, similarly to the national pattern, a now almost familiar west–east divide can be observed. In

the western half of the Hungarian language area (up to and including Veľký Krtíš District), results lag behind the national average by at most 10 percentage points, whereas in the east, deficits of 20–30 percentage points are not uncommon. The districts with the lowest scores correlate very strongly with the spatial distribution of Hungarian Roma (see Maps 5–6). Schools and districts performing above the national average are, unsurprisingly, located in economic core areas (Bratislava, Košice, Nitra District), where Hungarian lives as a dispersed minority.

Even more can be learned about the results of Hungarian students if we compare them not to the national average but to the district average, since this partially controls for macro-level territorial (development) differences. Deviations from district averages are shaped by the district-level share of Hungarians: in Hungarian-majority districts, the scores of Hungarian students and the district average are essentially identical, because Hungarian students account for most of the district-level score.

Hungarian-medium students exceeded the district average in only Veľký Krtíš and Nitra Districts. In Veľký Krtíš District, one possible explanation is that Roma students are concentrated mainly in the northern,

Slovak-inhabited part of the district, which may depress the district average somewhat. Regardless, the performance of Hungarian students is clearly strong: among Hungarian-inhabited districts, Veľký Krtíš has the fifth-highest score (54.1), following Bratislava (67.3), Nitra District (65.2), Košice (59.1), and Dunajská Streda District (54.3). This suggests that, relative to the district’s socio-economic development level, Hungarian students in Veľký Krtíš are overperforming.

The situation in Senec District is also noteworthy, as Hungarian students’ results fall well below the district average. This suggests that while Hungarian students’ scores are roughly similar to those in neighboring Hungarian-majority districts, non-Hungarian students are closer to “urban” performance levels—likely linked to suburbanization and the relocation of a significant share of residents from Bratislava.

At the bottom of the scale, Hungarian students’ scores are roughly half those of the best-performing districts: Košice-okolie District (26.4), Rimavská Sobota District (29.7), and Trebišov District (32.1). These values are lower than the average score of any district in Slovakia. At first glance, one might conclude that these outcomes must be driven by the high share of

socially disadvantaged Roma students. This is partly true; however, the results also point to other, locally specific factors, since otherwise it is difficult to explain why there is a ten-percentage-point gap between similarly positioned Rimavská Sobota and Rožňava Districts, or why Hungarian schools in Michalovce District score five percentage points higher than those in Trebišov District despite an even higher Roma share in the former.

Nonetheless, the main conclusions from the mathematics results are as follows: (1) test scores move together with the socio-economic development level of the region; (2) Hungarian students' results typically fall below the district average; and (3) extremely unfavorable outcomes are found in regions with the highest Roma shares.

In the west, the districts with dispersed Hungarian communities (Bratislava: 88; Nitra District: 82; Senec District: 81) and those along the Slovak–Hungarian language boundary (Šaľa District: 71; Veľký Krtíš: 69; Levice: 66; Galanta: 64) perform better, while districts with compact Hungarian settlement structure perform less well (Dunajská Streda: 62; Nové Zámky: 54; Komárno: 52) (Map 43). Accordingly, it is hardly surprising that in predominantly Hungarian areas, where everyday exposure to the Slovak language is more limited, levels of Slovak language proficiency are also lower. In the east,

by contrast, the block–dispersed dichotomy is again difficult to apply; here, the local share of Roma population and other local factors not visible in the figures appear more decisive. It is also clear that there are districts that “do not fit” the model. For example, Hungarian students in Lučenec District achieved much better test results (67) than the eastern average and other districts

where the share of Roma among Hungarian-medium students is similarly high. And we should not forget that Hungarian Roma (as the Revúca case study showed) have substantially weaker Slovak-language proficiency than non-Roma Hungarians. This may partly explain the low scores in Rimavská Sobota (50), Michalovce (48), and perhaps Trebišov Districts (48), but it does not

Map 43: Average Slovak-language scores of Hungarian-medium students in Testovanie 9, 2025



explain why such a large gap exists between neighboring Rimavská Sobota and Lučenec Districts.

The dual pattern presented above (east–west; core-area vs. diaspora-area) is well reflected in the educational sites with the lowest average scores (below 40 points). These are concentrated in three areas: in the west within the Hungarian ethnic block area; in the central part of the Hungarian language area (especially in Gemer region); and in the easternmost districts. Of these, only the schools in Gemer can be clearly linked to a high share of Roma students as the main driver of very low scores. In the other areas, the primary structural factor we can point to is simply the high share of Hungarians, which reduces everyday exposure to Slovak in routine social contexts.

Overall, the test results reflect a double disadvantage. First, there is a clear territorial disadvantage: Hungarian-inhabited areas belong to Slovakia's less developed regions, which is reflected in students' socio-economic background and academic outcomes and also shapes the material and human-resource capacities of schools. Second, there is also an “ethnic” disadvantage that encompasses asymmetric majority–minority relations, differences in state-language competence, and issues related to the most disadvantaged segment within the Hungarian native-speaking population: namely Hungarian Roma communities.

Educational attainment indicators of Hungarians in Slovakia based on the 2021 census

Compared to current test results, educational attainment is a retrospective indicator because it reflects schooling trajectories that have already been completed. Still, it is worth examining, since it is one of the most important indicators of social position. For this reason, these figures are most informative when compared with the other groups, especially the Slovak majority.

In Central and Eastern Europe, educational attainment is typically aligned with income conditions, occupational structure, and socio-economic status. Prior research has shown that the educational attainment of minority Hungarians living in Hungary's neighborhood is consistently lower than that of the titular ethnic group.⁶⁹ This has also been true for Hungarians in

Slovakia,⁷⁰ and according to the 2021 census results it has not changed in any substantial way.

Among the main autochthonous minorities in Slovakia, the Roma population unsurprisingly has the most unfavorable position: 77% have at most primary education. Relative to the total population, Hungarians are overrepresented in the lower segments (at most primary education) and underrepresented among those with higher education; in other words, their attainment profile is clearly unfavorable (Table 14). This is consistent with Hungarians' settlement and occupational structure, since a significantly larger share of Hungarians live in villages and work in the primary sector (agriculture) than Slovaks do.

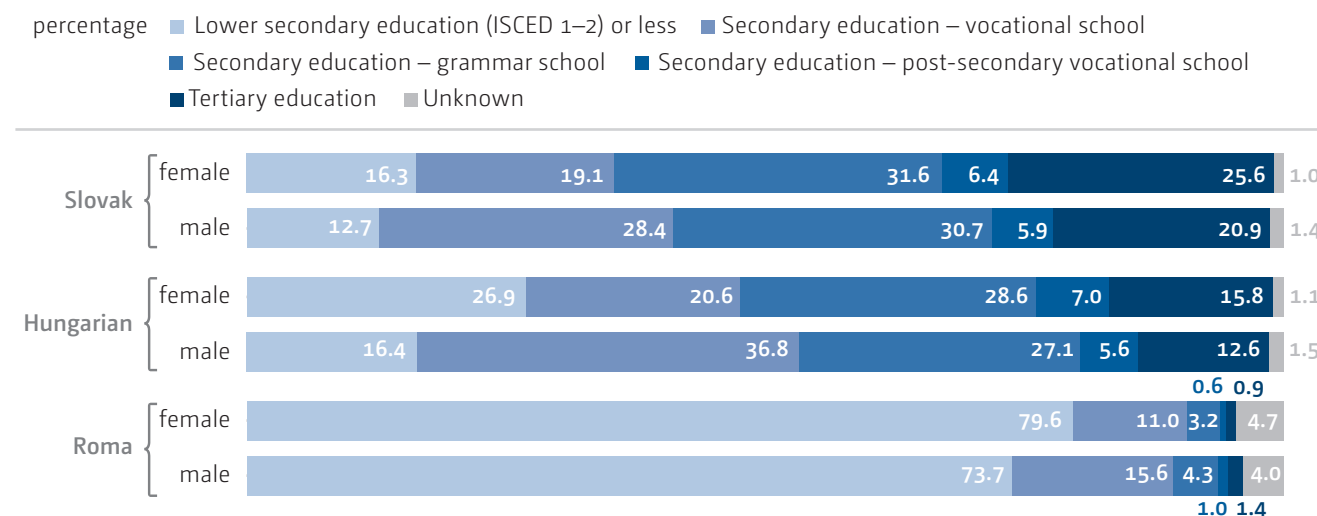


Table 14: Highest educational attainment among the population aged 15 and over by major ethnic group, 2021

Highest level of educational attainment	Slovak		Hungarian		Roma		Total population	
	Number	Proportion (%)	Number	Proportion (%)	Number	Proportion (%)	Number	Proportion (%)
Lower secondary education (ISCED 1–2) or less	561 961	14.6	81 688	21.9	33 297	76.7	679 686	15.8
Upper secondary education – vocational school	909 965	23.6	105 497	28.3	5 784	13.3	1 025 578	23.9
Upper secondary education – general (grammar) school	1 205 873	31.2	103 994	27.9	1 627	3.7	1 318 434	30.7
Upper secondary education – post-secondary non-tertiary vocational education	237 571	6.2	23 587	6.3	333	0.8	262 773	6.1
Tertiary education	902 150	23.4	53 191	14.3	503	1.2	962 242	22.4
Unknown	42 935	1.1	4 764	1.3	1 890	4.4	49 691	1.2
<i>Total</i>	<i>3 860 455</i>	<i>100</i>	<i>372 721</i>	<i>100</i>	<i>43 434</i>	<i>100</i>	<i>4 298 404</i>	<i>100</i>

Breaking the data down by gender, we find that, similarly to most regions of post-socialist Central and Eastern Europe, women are overrepresented both among those with the highest and the lowest levels of attainment, largely regardless of ethnicity. Only among Roma is it the case that men have a higher share among tertiary graduates, reflecting the delayed timing of social change within Roma communities relative to other groups. Among Hungarians, the overrepresentation of women among those with at most primary education is particularly striking (Figure 18). This reflects, first, a historical pattern typical of rural societies, where women's schooling lagged behind men's – today largely a feature of older cohorts.

Figure 18: Highest educational attainment among the population aged 15 and over by gender and major ethnic group, 2021



Among Hungarians, for example, in age groups above 45 the share of women among those with at most primary education is increasingly higher than men's as age increases. Second, another pattern (now widely observed across Central and Eastern Europe) is also visible: among those with college or university degrees, women outnumber men.

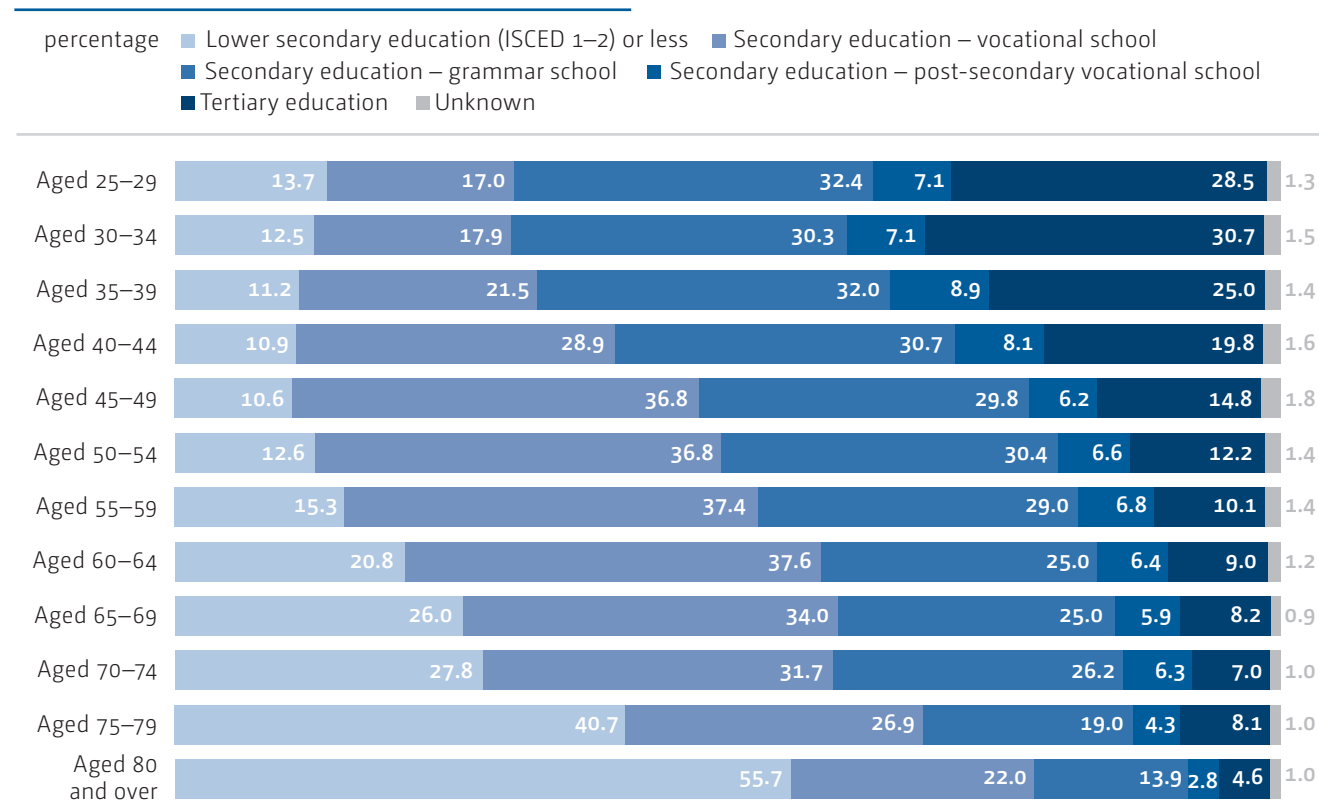
In addition to gender differences, age-group differences are also important. In general, as age increases the share with tertiary education declines, while the share with at most primary education rises (Figure 19). This reflects general structural trends such as the fact that continuing education beyond primary school became a typical strategy during the decades of

socialism, followed by the mass expansion of higher education over the past decades.

One of the most informative indicators of ethnic stratification in educational terms is the proportion of tertiary graduates. Although, as Figure 3 shows, obtaining a degree is increasingly common among Hungarians (in some cohorts more than 30% completed higher education), a substantial gap between Hungarians and the majority population persists and narrows only modestly over time. Since Slovaks are overrepresented in cities, where tertiary attainment tends to be higher, it is also useful to examine the regional breakdown of data to assess whether differences remain even after accounting for settlement-structure disparities. We therefore focus below on districts in southern Slovakia and on tertiary attainment, in order to present educational inequalities between ethnic groups.

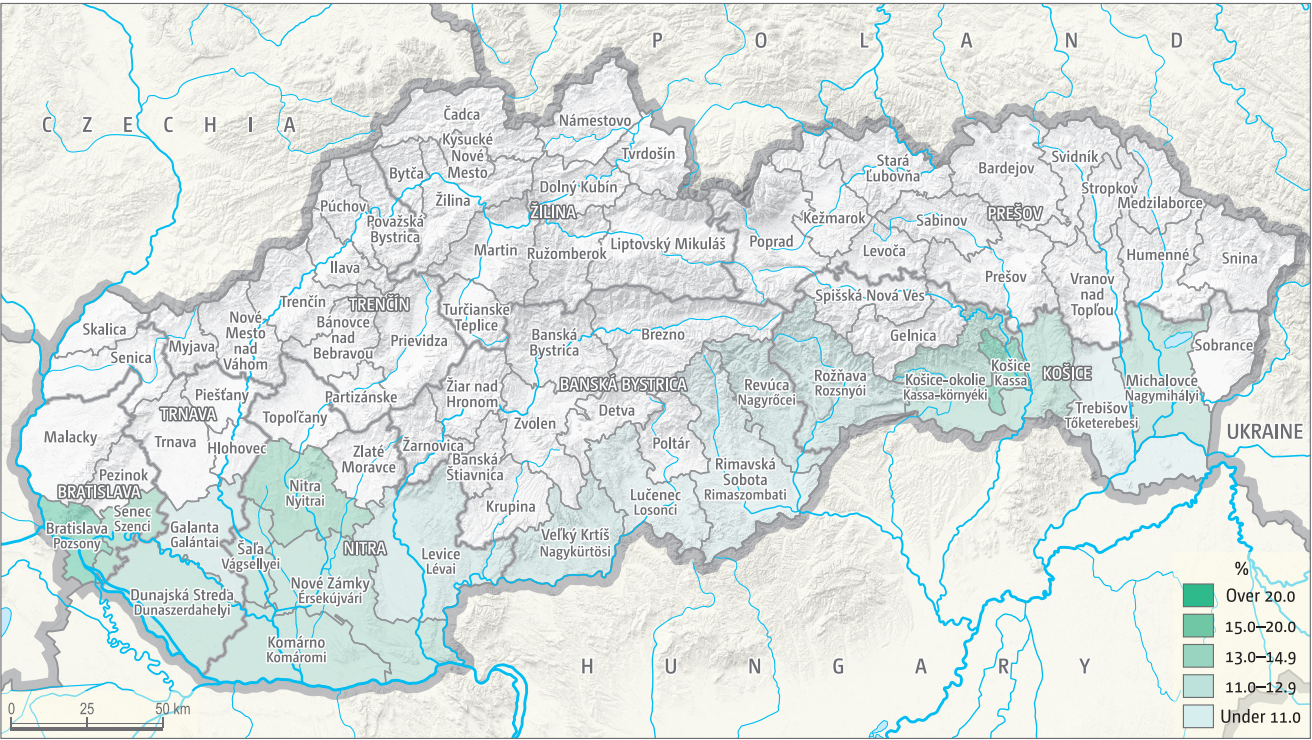
The results confirm that settlement size is closely associated with the share of tertiary educated, which is accordingly highest in larger cities. While the urban-rural dichotomy has strong explanatory power, intensifying suburbanisation has also produced high values in the hinterlands of major cities (districts of Senec, Dunajská Streda, Nitra, Košice-okolie), especially among Slovaks, reflecting the ethnic composition

Figure 19: Highest educational attainment among the Hungarian population aged 25 and over by age group, 2021



of those participating in suburbanization (Table 15). This pattern is highly similar to that of the *Testovanie 9* results discussed above. Tertiary attainment is associated with intra-country economic disparities and their consequences, such as selective east-to-west migration of younger cohorts, which tends to reproduce educational gaps between core and peripheral regions.⁷¹

Map 44: Proportion of individuals with higher educational attainment in the Hungarian population aged 15 and over in South Slovakia, 2021



For the Hungarian population, this means that in the western half of their settlement area,⁷² the share with tertiary education is 14.1%, while in the eastern half it is 11%. Among Slovaks (23.4% vs. 16.4%) and in the total population (19.5% vs. 14.5%), the east–west differences are even more pronounced (Map 44). Because the lowest Hungarian values are found precisely in districts where the share of Roma among those

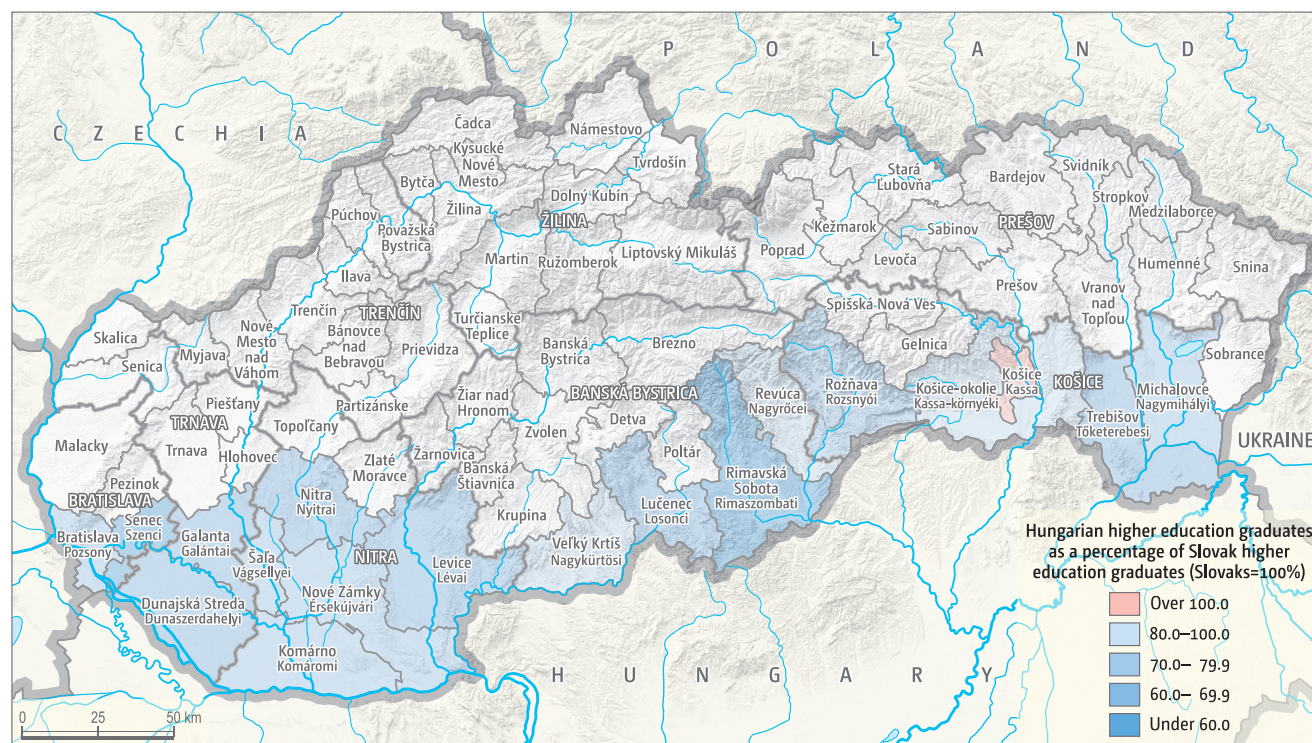
identifying as Hungarian is highest (Rimavská Sobota, Lučenec), it does not seem unfounded to assume that the presence of a low-attainment Roma population also contributes to the pronounced east–west gap. At the same time, it also seems plausible that Hungarian-medium higher-education opportunities in Komárno and Nitra contribute to the fact that in many western districts (beyond those already mentioned, especially Nové Zámky, Komárno, and Šaľa Districts) the share of Hungarian tertiary graduates is higher than in the east.

Ethnic differences in attainment persist independently of regional and urban–rural differences: the share of tertiary graduates among Hungarians is almost everywhere below the corresponding Slovak values. However, the magnitude of the gap varies widely. In general, the local share of Hungarians also matters, since in both 2011 and 2021 the smallest gaps between Hungarians and Slovaks were found in districts that largely overlap with the Hungarian ethnic block area (Komárno, Dunajská Streda, and Nové Zámky Districts). Yet the gap is also small in certain districts with a relatively low and deconcentrated Hungarian population (Veľký Krtíš, Košice-okolie, Rožňava), which instead points to the peripheral character of these regions, where the Hungarian–Slovak ethnic divide is less salient relative to the overall disadvantages of the area. By contrast, the largest

Table 15: Proportion of individuals with higher educational attainment in the population aged 15 and over by major ethnic group in South Slovakia, 2011–2021 (%)

District	Hungarians, 2021		Slovaks, 2021		Total population, 2021		Hungarians, 2011, %	Slovaks, 2011, %	Total population, 2011, %
	Number	Proportion (%)	Number	Proportion (%)	Number	Proportion (%)			
Bratislava	3 499	33.0	157 833	46.0	173 848	43.3	23.6	34.4	34.1
Dunajská Streda	11 159	14.8	5 426	21.8	17 227	16.2	10.1	16.2	11.9
Galanta	3 144	11.9	9 002	17.7	12 462	15.3	7.7	13.3	11.8
Komárno	1 337	14.8	14 045	16.8	15 876	15.5	10.1	11.4	13.7
Košice	1 906	36.4	55 538	33.6	60 920	31.2	28.3	25.4	22.1
Košice-okolie	7 640	13.9	4 393	17.4	12 449	14.2	10.1	13.4	10.7
Levice	1 760	13.6	5 163	18.3	7 108	16.1	9.1	14.2	12.4
Lučenec	2 697	12.7	12 689	18.8	15 856	16.6	8.8	14.0	13.8
Michalovce	1 478	10.4	6 988	17.3	8 713	14.6	8.3	13.7	15.1
Nitra	1 257	13.2	13 447	18.4	15 241	16.8	10.0	14.6	16.2
Nové Zámky	1 142	17.8	34 269	27.3	36 718	26.2	12.3	20.3	19.3
Revúca	5 646	14.2	13 915	19.2	20 114	16.8	9.7	14.0	11.8
Rimavská Sobota	680	11.0	3 016	13.4	3 788	11.9	7.7	11.1	9.2
Rožňava	2 224	8.8	5 132	14.8	7 549	11.4	7.1	12.1	11.2
Šaľa	1 466	12.1	5 196	15.9	6 859	13.9	7.9	12.7	12.3
Senec	1 446	18.3	22 117	35.7	24 870	32.8	11.6	25.9	26.0
Trebišov	2 350	10.8	9 206	16.4	11 831	13.8	7.3	12.9	10.3
Veľký Krtíš	941	11.5	3 463	13.2	4 520	12.5	6.6	10.2	8.7
<i>Slovakia total</i>	<i>53 191</i>	<i>14.3</i>	<i>902 150</i>	<i>23.4</i>	<i>962 242</i>	<i>22.4</i>	<i>10.0</i>	<i>17.3</i>	<i>16.4</i>

Map 45: Higher educational attainment among Hungarians relative to higher educational attainment among Slovaks in South Slovakia, 2021



gaps in 2021 were recorded in districts located on the edge of the Hungarian settlement area that also include a larger city or its suburban belt, such as Senec and Nitra Districts (Map 45). Between 2011 and 2021, the largest relative improvements occurred in Rožňava, Košice-okolie, Veľký Krtíš, and Lučenec Districts, while Trebišov, Nitra, and Nové Zámky Districts saw relative deterioration.

Overall, examining tertiary attainment makes it clear that Hungarians' highest educational attainment remains significantly below the average both at the national and district level. In our interpretation, this may indicate two phenomena. First, it reflects the structurally less favorable position of Hungarians, a disadvantage that has diminished somewhat over recent decades but continues to be reproduced across

generations. Second, assimilation processes likely also play a role. From the 2011 census we know that transmission of ethnic identity and highest educational attainment are inversely related, i.e. assimilation may be strongest precisely among the most highly educated,⁷³ which in turn feeds back into the attainment profile of the Hungarian population. Beyond these, two further factors are worth noting: strong suburbanization processes can locally increase Hungarians' apparent attainment disadvantage, while the high number of Roma who identify as Hungarian lowers the overall educational-attainment level of the Hungarian population.



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THE CHANGING FACE OF HUNGARIAN MINORITY EDUCATION IN SLOVAKIA



an Atlas of Student Enrollment, Demography and Social Trends

Horizontum Civil Association; Geographical Institute HUN-REN CSFK; VEKTOR Social Research Association

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