

Ethnic Classification Issues and Spatial Characteristics of the Roma Population by Recent Datasets – Evidences From Northeastern Hungary

János Péntes¹ • Dóra Balázs² • István Zoltán Pásztor³ •
Gergely Gribovszky⁴ • Dávid Kovács⁵

Abstract

The estimated number of the Roma population can vary significantly depending on the ethnic classification approach, with self-identified data typically being lower, while hetero-identification, i.e. external classification, typically results in higher values. In the study, the former is exemplified by censuses, and the latter – in part – by local government estimates collected by the authors. However, based on the various data sources, the trend seemed clear in Hungary; both the number and proportion of the Roma population have grown dynamically in recent decades. The study uses the example of Northeastern Hungary to explore the differences between the data from census and local government estimates, as well as the territorial pattern of the emerging changes. The different trends emerging from different data sources cause a dilemma, especially in the case of underdeveloped settlement groups, as the census data seem to be resolving the issue, while according to local government estimates, the segregation of Roma at the settlement level is further strengthening.

Keywords

backward areas, census, ethnic geography, identification, Roma population, segregation

Introduction and Methodology

Investigating of nationalities and different ethnic groups, and within this, the determination of the population size of the groups, is an important

¹ PhD habil, associate professor, University of Debrecen, Department of Social Geography and Regional Development Planning, Hungary, E-mail: penzes.janos@science.unideb.hu.

² MSc, PhD student, University of Debrecen, Department of Social Geography and Regional Development Planning, Hungary, E-mail: balazsdora94@gmail.com.

³ PhD, teacher, Kossuth Lajos Teacher Training Secondary Grammar School and Elementary School, Hungary, E-mail: pasztor.istvan@science.unideb.hu.

⁴ MSc, teacher, MSZC Budai Nagy Antal Technikum és Szakgimnázium, H-4320 Nagykálló, Hungary, E-mail: gribovszky.gergely@gmail.com.

⁵ MA, PhD student, University of Debrecen, Department of Social Geography and Regional Development Planning, Hungary, E-mail: kovacs.david990327@gmail.com.

research issue for anthropology, ethnography, human geography and sociology. At the same time, there are several approaches to ethnic classification, which can lead to very different results.

Regarding the number of the Hungarian Roma population, quite different population data and estimates can be found in the relating sources. The uncertain nature of ethnic studies is not a new phenomenon, but in the case of the Roma population, the results of methods with a specific approach show a particularly large variance. At the same time, in Hungary – regardless of the methodological background and the classification approach – the long-term trend of the increasing number and proportion of the Roma population seemed clear. This trend was broken quite characteristically by the data on the Roma nationality in the 2022 census, which represented a serious significant compared to the total values of the previous 2011 census.

The studied region is of outstanding importance in terms of results based on self-identification (or auto-identification), assumption of origin, identity and language use (this includes the census data aggregated at the settlement level) and aggregates using external classification (or hetero-identification) (this includes the database collected by questioning local governments), as about half of the Hungarian Roma population lives in Northeastern Hungary (covers two NUTS-2 regions, namely Northern Hungary and Northern Great Plain regions. In our study, we try to explore the territorial characteristics of the number and proportion of the Roma population, and to compare the results provided by different classification approaches with settlement level details. In addition to census data and previous council/municipal surveys, this is based on the results of our recent survey.

Previous studies have shown that the proportion of Roma is higher in peripheral, more socio-economically disadvantaged settlements (this correlation is clearly visible in Northeastern Hungary). Therefore, in our study, we pay special attention to exploring the changes in the number and proportion of the Roma population in the underdeveloped settlement groups of the region.

The study uses the example of Northeastern Hungary to explore the differences between the data from census and local government estimates, as well as the territorial pattern of the emerging changes. The background for the local government estimates is provided by a recently completed database containing data from 999 settlements in the examined region. Based on the latter approach, the proportion of the Roma population in Northeastern Hungary increased by about one and a half percentage points, to 17.3%, while based on the census data, it decreased by two percentage points, to 4.6%. The extent of the difference between the two approaches

was basically expected, but the different trend was hardly foreseeable. According to the censuses, the number of settlements with a Roma population ratio of at least 50% has decreased to 14 by 2022, while according to local government estimates, their number has doubled, approaching 140. The different trends emerging from different data sources cause a dilemma, especially in the case of underdeveloped settlement groups, as the census data seem to be resolving the issue, while according to local government estimates, the segregation of Roma at the settlement level is further strengthening.

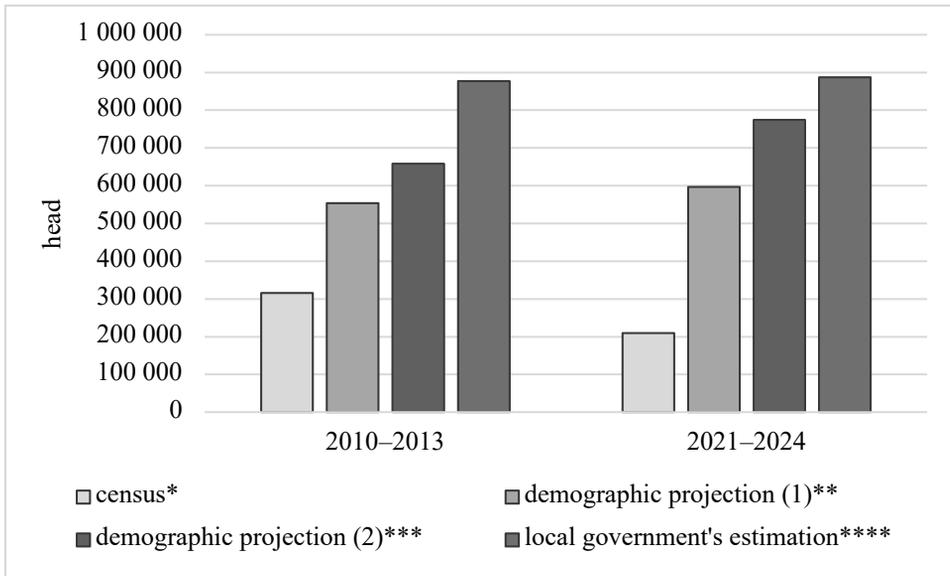
We primarily seek to answer the question of what kind of correlation the proportion of the Roma population and its changes show in the groups formed based on the underdevelopment of the settlements, and whether there are differences in this regard between the different classification methods.

Possibilities to Examine the Number of Roma Population

The markedly different data on the number of Roma population are due to differences in classification (Cserti Csapó, 2008: 101–103; Tátrai et al., 2017: 47–53). Out of the four different approaches – (1) statistical, sociological; (2) ethnographic; (3) anthropological; and (4) consideration of ethnic identity and commitment (Szuhay, 1993: 88–90) – the first and fourth are given greater emphasis in the analyses. In the case of related studies, the most significant differences are shown by the population data derived from auto-identification and hetero-identification. Censuses offer a good example of the former, while expert estimates and classifications by interviewers provide an approach for the latter (Ladányi, Szelényi, 2004: 126–135).

The variety in the total number of Roma population resulting from differing approaches are clearly illustrated in Figure 1, which, in addition to the censuses, includes the demographic estimates based on the sociological data survey of István Kemény (Hablicsek, 2007: 7–10) and its further calculation (Hablicsek et al., 2019: 50–52). In addition, the projected data (Obádovics 2022: 281–285) of the estimation carried out by the Population Research Institute of the Central Statistical Office (KSH NKI) (Kapitány et al., 2014; Szabó, 2022: 110–115) are also among the related estimates. The summary prepared based on the estimates of the local governments gave the highest values (Pénzes et al., 2018: 9). In light of all this, the 2011 census value of ~315,000 people and the local government estimate of ~876,000 people indicate a significant variance in determining the number of the Roma population in Hungary.

Figure 1: Data and estimates about the number of Roma in Hungary for the periods 2010–2013 and 2021–2022, head



(Source: authors' edition by the datasets from *HCSO census, 2011 and 2022; ** Kapitány et al., 2014 and Obádovics, 2022; ***Hablicsek, 2007 and Hablicsek et al., 2019; ****Péntzes et al., 2018 and UD 2022–2024)

In addition to the static population data, it is particularly interesting that the differences between the different approaches are increasing by the 2020s. Based on the 2022 census, there was a significant decrease in the self-reported data, while demographic estimates predicted a further significant increase. The former value decreased to 209,900 people, while according to demographic estimates, the number of Roma in Hungary increased to 597,000 and 774,000 people, respectively. Based on the local government estimates collected in 2022–2024, a Roma community of 887,000 people could be expected.

It is important to emphasize that we do not aim to classify any of the approaches. In our opinion, each study and survey has its relevance and conveys very important information, whether it is about the number of Roma people who have declared their identity or about the size of the community that an external informant considers to be Roma.

In the remainder of our study, we will examine the main characteristics of two different classification approaches – self-identified censuses and local government estimates as a method of hetero-identification – and conduct a detailed territorial examination of the results they provide, using the example of Northeastern Hungary.

Censuses

Censuses provide regular and detailed data on nationalities, but since they are based on self-identification, the results depend largely on identity and its acceptance. The number of national groups can be inferred based on declared nationality/ethnicity, cultural identity (latter one used only in the 2001 census), mother tongue, and language used in family and friends. In censuses, answering nationality and religious affiliation is not mandatory, so non-respondents cannot be classified as a national group (Tátrai, 2014: 507).

The Roma population in Hungary is extremely heterogeneous, and not all Roma subgroups can identify with the designation “Gypsy” or “Roma”, the census category, or with other Roma subgroups (Szuhay 1993: 88–90; Tátrai et al. 2017: 48).

At the same time, language use does not determine belonging to the Roma population, since, according to the 2022 census, the proportion of Roma native speakers (Romani, Boyash, etc.) is barely more than 10% of those belonging to the Roma nationality. The majority of the Roma have a dual, Hungarian and Roma nationality affiliation (Kemény, Jankó, 2003: 311).

The self-identification of the Roma population varies depending on the social conditions of the given period, as well as the degree of discrimination, stigmatization and racist public discourse (Csepeli, Simon, 2004: 135; Durst, 2010: 180; Fosztó, 1997: 27; Ladányi, Virág, 2009: 5; Szuhay, 2007: 98–99; Tátrai et al., 2017: 48). It is certainly also important whether the census is preceded by a local or wider campaign aimed at popularizing or rejecting the assumption of origin. The option of completing the questionnaire online appeared in the 2011 census, which gained even more ground in our country by 2022. The number of those who do not wish to answer the question shows a growing trend, to which online completion clearly contributes. It is also worth pointing out that the increasing awareness of personal and data protection rights also reduces the willingness of Roma to respond (Cserti Csapó, 2024: 233).

Due to the listed factors, the number of people who identify themselves as Roma during censuses is significantly lower than the number of people perceived as Roma by the outside world and their environment, generally 30-40% of the latter (Kemény, Jankó, 2003: 310).

Local Governments' Estimations

In this study, we pay special attention to the approach that qualifies as hetero-identification, since the leaders, representatives and local

government experts of the settlements are interviewed. The assumption behind the method is that the leaders of the settlements and local government respondents, as people who know the local community, can provide adequate information about the Roma population. This approach is not new, as already in the mid-1980s, the staff of the Institute of Earth Sciences of the Hungarian Academy of Sciences, with the help of CIKOBI (County Roma Coordination Committees), collected estimated data on the local Roma population from the councils (Bassa et al., 1989: 115; Kertesi, Kézdi, 1998: 93–99; Kocsis, Kovács, 1991: 78–85).

The inclusion of estimated data from local governments is also of increasing importance in studies of the Roma population in neighboring countries (Horváth, Kiss, 2017: 11–49; Kocsis, Tátrai 2021: 75; Mušinka et al. 2014: 11–13). The departmental survey of the University of Debrecen was based on surveys of local governments, which took place in several waves between 2010 and 2013. As a result, estimated data were available for every settlement in the country.

The referenced survey was conducted through telephone and e-mail inquiries of local and minority local governments (partly refined by a field survey) (Pásztor, Péntzes, 2018: 156–158; Péntzes et al., 2018: 5–11). During the repeated survey in 2022–2023, we separated the information received from local governments from the responses of Roma minority local governments. The incoming estimates typically represented an interval, so we were able to separate minimum and maximum values, but the analyses included the mean values, which we compared to the 2021 population.

In our experience, local government responses are somewhat overestimated, as subjectivity is inevitable, and it seems clear that in settlements with larger populations there is a greater discrepancy between self-identified values and settlement responses (Péntzes et al., 2018: 15; Tátrai et al., 2017: 56–57). This is partly because the respondent (e.g. the mayor) may have less complete knowledge of the communities in larger settlements, and in several cases the categories of ethnicity and poverty were blurred (it is typical that the population living in a segregated area or the disadvantaged population was basically classified as Roma, regardless of their origin), and the descendants of Roma-non-Roma marriages were also predominantly considered Roma. This peculiarity emerges based on the aggregated data, as this estimate gave significantly higher values than the referenced census data, sociological surveys, and demographic projections.

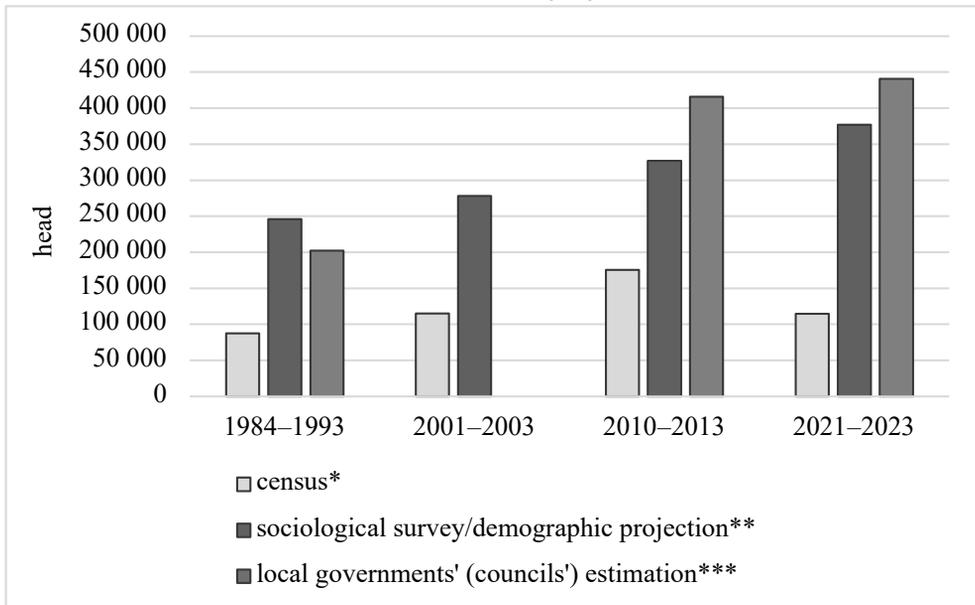
Despite all this, this approach can be considered particularly suitable for territorial studies, as it allows for analyses to be carried out at the settlement level.

The Size of the Roma Population in Northeastern Hungary

Our study of 999 settlements in the six counties of Northeastern Hungary – Borsod-Abaúj-Zemplén, Hajdú-Bihar, Heves, Jász-Nagykun-Szolnok, Nógrád and Szabolcs-Szatmár-Bereg – concerns more than 30% of the Hungarian settlement population. At the same time, almost half of the Hungarian Roma population – 45–55% depending on the data sources – live in Northeastern Hungary (Pásztor, Péntes, 2012: 356–358).

The change in the number of Roma population in Northeastern Hungary also showed a similar trend – i.e. basically an increase – to the national trends, while the population ratio and the rate of increase also exceeded the national average (Péntes et al., 2018: 10–11). Estimates of the local governments (councils before the change of regime in 1989) typically provided the highest population figures among the data sources (in relation to the 1984–1993 period, it is worth mentioning that the council estimates come from the beginning of the period, while the sociological survey comes from the end of the period) (Figure 2). In the 2010–2013 period, based on the three different data sources, the number of the Roma population ranged between 175,700 and 416,000, which shrank even more in the 2020s to an interval between 114,500 and 440,600 people.

Figure 2: Data and estimates about the number of Roma population in Northeastern Hungary, head



(Source: authors' edition by the datasets from *HCSO census, 1990, 2001, 2011 and 2022; ** Kemény, Janky, 2003 and Hablicsek, 2007; *** Kocsis, Kovács 1991; Péntes et al., 2018 and UD 2022–2024)

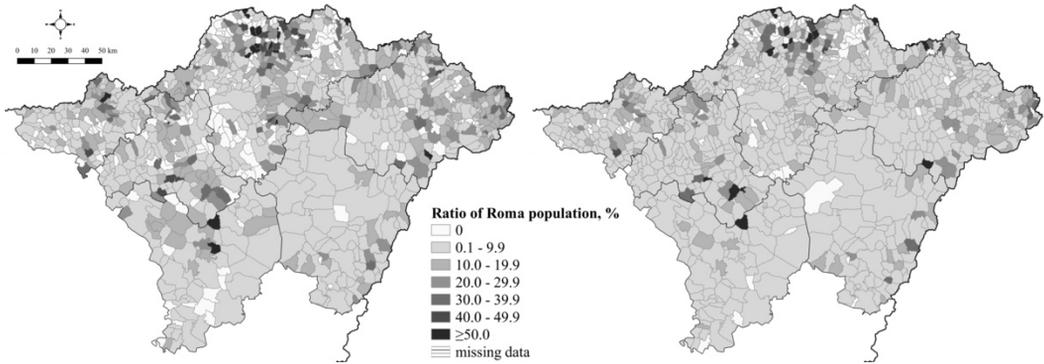
Table 1: Ratio of Roma population in the observed regions calculated by the census data and the local governments' estimates

	Census				Local governments' (councils) estimation		
	1990	2001	2011	2022	1984–1987	2010–2013	2022–2023
Borsod-Abaúj-Zemplén	4.18	6.26	8.50	6.08	9.38	20.23	21.72
Hajdú-Bihar	1.38	2.12	3.39	2.49	4.12	8.98	10.78
Heves	2.44	3.87	6.30	4.85	5.57	12.05	14.41
Jász-Nagykun-Szolnok	2.14	2.96	4.94	3.26	5.20	14.13	16.26
Nógrád	2.60	4.52	7.65	5.94	8.30	19.36	18.75
Szabolcs-Szatmár-Bereg	4.36	4.57	8.00	5.21	7.68	18.42	20.18
Northeastern Hungary	3.05	4.22	6.53	4.59	6.91	15.70	17.29

(Source: authors' edition by the datasets from HCSO census, 1990, 2001, 2011 and 2022; Péntzes et al., 2018 and UD 2022–2024)

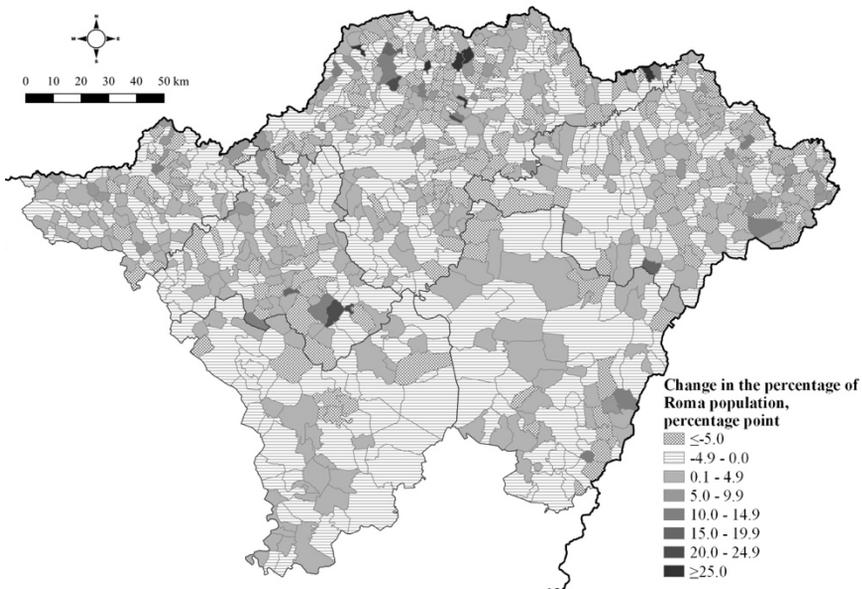
In the light of the 2022 census, the self-identified number and proportion of the Roma population in the region (as in Hungary) decreased. The decrease was 34.8% in the case of Northeastern Hungary, which is almost the same as the national rate. The direction and extent of the change contradict previous trends and the tendencies expected from other sources (Table 1). An adequate investigation of the reasons would require a separated study, but based on the rather diverse settlement and regional pattern, the combined effect of several factors is reflected in the 2022 data (Figures 3 and 4). Of course, it is not inconceivable that the proportion of the Roma population is decreasing in some settlements, but such a decline, aggregated for the entire region, does not reflect real demographic processes, but can be traced back to a significant erosion of the assumption of identity. The picture is further colored by the fact that the proportion of those who did not answer the nationality question in the studied region was far below the national average, amounting to only 4.6% in 2022. The decrease in the Roma population ratio shows a specific difference depending on the size of the settlement – it is well below the average among settlements with under 500 inhabitants, and it also lags behind the national value among villages with under 1,000 inhabitants. In more populated settlements – although far from being a function – the decrease in the ratio was greater, but it is important to emphasize that demographic processes (i.e. the natural population movement of the local Roma population) cannot be concluded from these ratios and their changes.

Figure 3: The ratio of Roma in settlements of Northeastern-Hungary by the census 2011 and 2022, %



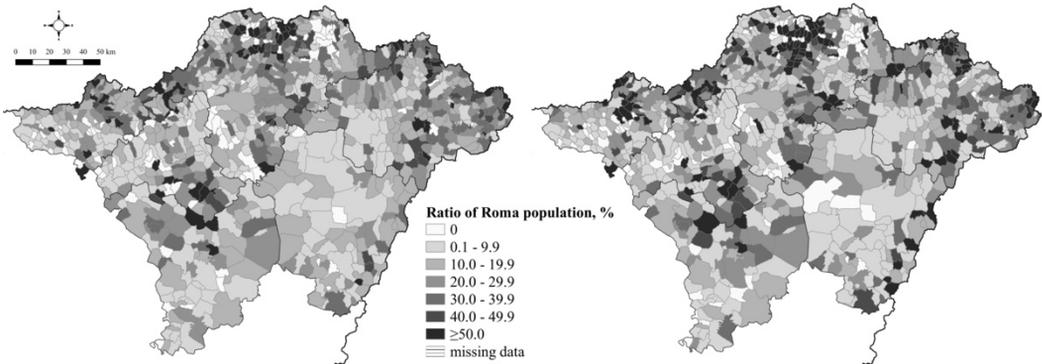
(Source: authors' edition by the datasets from HCSO census, 2011 and 2022)

Figure 4: Change of ratio of Roma in Northeastern-Hungary between census 2011 and 2022, percentage point



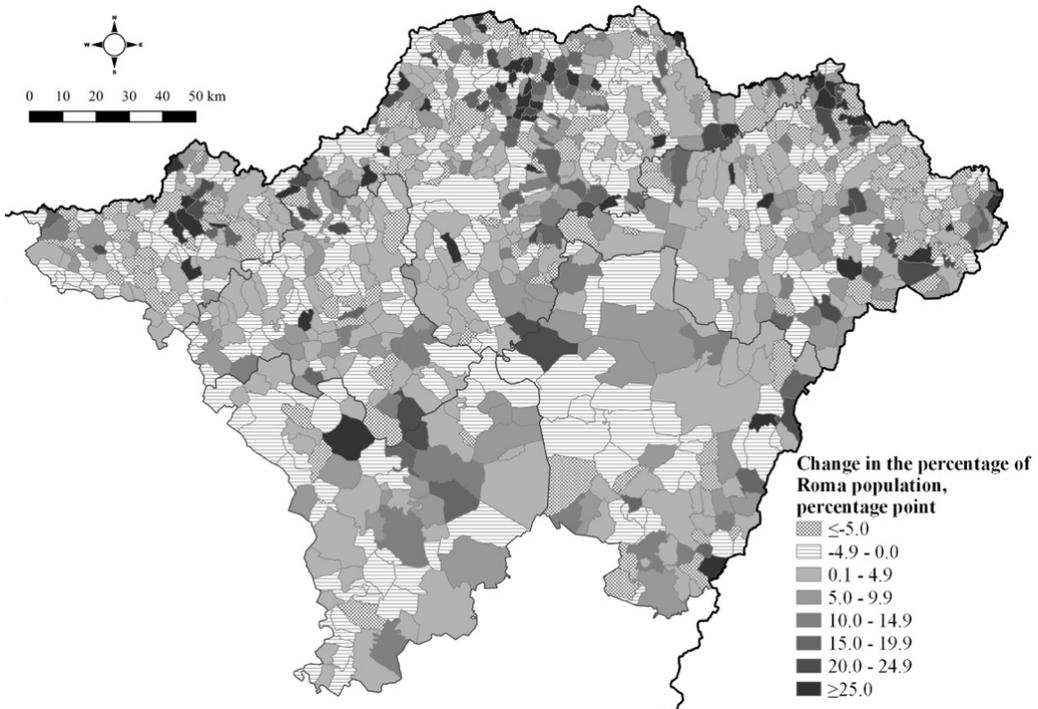
(Source: authors' edition by the datasets from HCSO census, 2011 and 2022)

Figure 5: The ratio of Roma in the settlements of Northeastern-Hungary by the local governments' estimates from 2010-2013 and 2022-2023, %



(Source: authors' edition by the datasets from Péntzes et al., 2018 and UD 2022–2024)

Figure 6: Change of ratio of Roma in Northeastern-Hungary between the estimates of local governments in 2010-2013 and 2022-2023, percentage point



(Source: authors' edition by the datasets from Péntzes et al., 2018 and UD 2022–2024)

It is particularly striking that, based on the local government estimates – with the exception of Nógrád County, where a modest decrease in proportion can be detected – we observed consistently increasing values. The share of Roma population of Northeastern Hungary increased to 17.3% based on the local governments' estimated data, while the value decreased

to 4.6% according to the census, so the approximately two and a half times difference between the shares calculated using the two approaches in the early 2010s increased to almost four times.

However, the change in self-identified data does not mean a decrease for all settlements in the region, as the Roma population share values showed an increase in 368 settlements, stagnation in 75 settlements, and a decrease in the remaining 566 settlements between the 2011 and 2022 censuses. The largest drop – exceeding more than 30 percentage points – occurred precisely in those settlements that were also Roma-majority villages according to the self-identified data of the 2011 census (Csenyété, Kiscsécs, Tiszabő, Lak, Abaújszolnok, Nyírpilis, Karancsság). In the case of the former four, the proportion of Roma people decreased to below 10% based on the 2022 census.

Compared to the census data, the maps based on local government estimates show a completely different spatial pattern (Figure 5), as do their changes between the periods 2010–2013 and 2022–2023 (Figure 6).

Based on local governments' estimates, the proportion of the Roma population decreased in 416 settlements (on several occasions, respondents considered the previous data to be overestimated, but in many cases the changes could be justified by population movements – the relocation of Roma families and larger-scale immigration also reduced the proportion of the Roma population). In 72 settlements, stagnation could be demonstrated by comparing the two surveys, while according to respondents in 511 settlements, the proportion of the local Roma population increased. In Northeastern Hungary, the proportion of the Roma population increased by 1.59 percentage points overall.

Based on the last two censuses, the proportion of settlements in Northeastern Hungary where the ratio of the Roma population reaches or exceeds 50% decreased from 17 to 14. In contrast, according to local governments' estimates, the number of 69 Roma-majority settlements measured during the 2010-2013 survey had just doubled by 2022-2023, rising to 138.

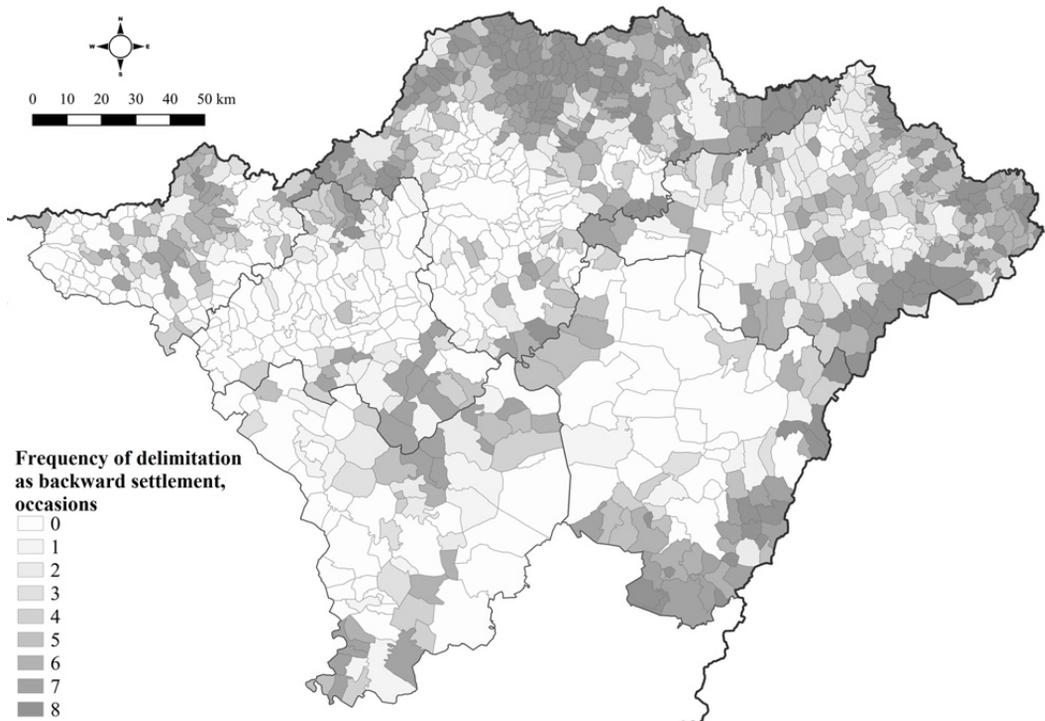
The Roma Population from the Aspects of Territorial Segregation and Peripheralization

We paid special attention to examining the processes that characterized the underdeveloped (backward) settlement groups in terms of the number and proportion of the Roma population. Previous studies have clearly shown that the proportion of Roma is typically higher in underdeveloped regions and that regional-settlement-scale segregation results in a further increase in the proportion. As a result of this process,

a part of the Roma population is displaced to underdeveloped settlements, while the more mobile part of the population – mainly of non-Roma origin – leaves disadvantaged regions (Péntzes, 2016; Péntzes–Demeter, 2021; Váradi–Virág, 2014; Virág, 2006).

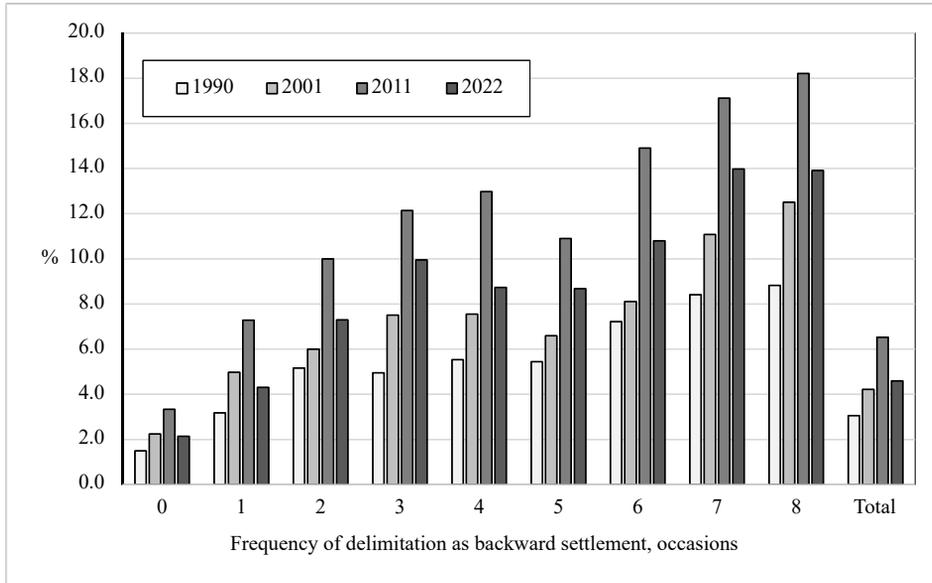
To express the underdevelopment of settlements, we used – among many other options – the results of the delimitations set out in the regional development legislation. Since the change of regime, settlements benefiting from regional development policy have been designated eight times in total. Although the methodology has changed several times and some of the procedures can be criticized (Péntzes, 2015), overall, covering a longer time period, it adequately indicates the relationship between development and underdevelopment – in our opinion. Of the settlements in Northeastern Hungary, 259 were not included in the underdeveloped category at any time, while 165 settlements were on the list all eight times (Figure 7).

Figure 7: Backward settlements of regional development policy according to the frequency of delimitation (1991–2015)



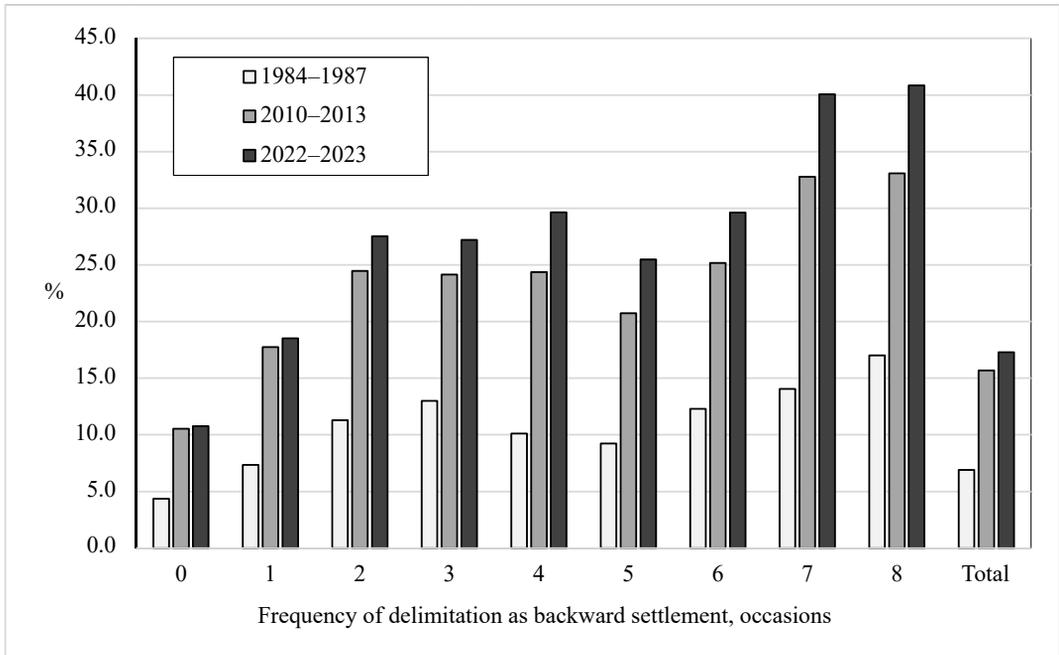
(Source: authors' edition by the governmental decrees and documents)

Figure 8: Change of ratio of Roma in Northeastern-Hungary by the census data according to the categories of settlements according to the occasions of delimitation as backward, %



(Source: authors' edition by the datasets from HCSO census 2011 and 2022)

Figure 9: Change of ratio of Roma in Northeastern-Hungary by the census data according to the categories of settlements according to the occasions of delimitation as backward, %



(Source: authors' edition by the datasets from Péntzes et al., 2018 and UD 2022-2024)

The categories established on the basis of backwardness clearly reflect the relationship between the rising proportion of the Roma population and the growing backwardness (Figure 8). According to our study, in the aggregate data of the most developed settlements – i.e. those that were never included in the delimitations – the proportion of Roma people measured in the 2022 census barely exceeded 2%, while the value exceeded 10% based on local governments' estimates. However, this is far below the regional average in both data sources and especially the values of the most backward group. In the latter group of settlements, the proportion of the Roma population is approximately three times the regional average according to the census, while it is nearly two and a half times the regional average according to local governments' estimates. Based on council/local government estimates, the proportion of the Roma population in the most backward group crept above 40% by 2022-2023. Based on both data sources, it is clear that over the course of a few decades, the difference between settlement categories has grown increasingly larger.

It is worth drawing special attention to the fact that according to the censuses, the proportion of the Roma population in the group of the most disadvantaged settlements decreased by 4 percentage points by 2022 – the largest decrease. An opposite process can be observed based on the estimated data from local governments (Figure 9), in which the proportion of the Roma population clearly increased – the largest decrease, by more than 7 percentage points. Therefore, in light of the latter data source, the segregation of the Roma population in the most disadvantaged regions is further – and possibly dynamically – strengthening. The contradiction is difficult to resolve, however, the decline presented in the self-identified data of the census is reflected in this phenomenon, which cannot be explained by demographic processes, but may be justified by the marked decrease in the assumption of origin and identity (adequate exploration of the issue requires further research).

Conclusions

The number of Roma population can be examined using several classification methods with different approaches. Until the last census in Hungary, it seemed clear that despite the significant variance, the number and proportion of the Roma population is also increasing in the country based on measurements with different methodologies – based on self-identification and hetero-identification. However, the data based on the 2022 census showed a significant decrease.

In Northeastern Hungary – in line with national changes – the number and proportion of the Roma population decreased by 2022 according to the census data based on self-identification. However, based on our survey

summarizing local governments' estimates conducted in 2022–2023, the estimated Roma population data indicated a fundamentally opposite, i.e. clearly increasing value in the region as a whole – although they show significant differences regionally. According to estimates, the Roma population ratio increased by approximately 1.5 percentage points in the nearly 1,000 settlements of the six counties, approaching a share of 17.3%. Following 2 percentage point decrease according to the census, the Roma population ratio fell below 4.6% by 2022. The increasingly different results and different trends of change of the two classification methods raise several questions, primarily in connection with the census, which shows anomalies compared to previous trends.

It is particularly striking that the data series derived from the two classification methods indicate completely different changes in the most backward settlement groups. Based on the census, we could assume a decrease in the territorial and spatial segregation of the Roma population, however, local governments' estimates indicate a significant increase. In the case of the latter, the Roma population ratio of the most backward settlement group has already reached 40%. It is clear that almost all of the settlements with a Roma population ratio of 50% or more are among the most backward settlements. According to the censuses, it decreased to 14, while according to local government estimates, the number of these settlements doubled (reaching 138 settlements) over the past decade (i.e. during the years between the two censuses and two surveys). Based on the estimated Roma population proportions by local governments, a continuing and increasing segregation at the settlement and regional levels is outlined.

The aim of our study was primarily to explore the differences between the two different classification approaches, without qualifying them. Both methods carry very important information about ethnic processes, but the results obtained can be the starting point for further studies, in which the issue of territorial segregation is particularly important, even in terms of preparing further policy decisions.

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