

**THE DEVELOPMENT AND THE SPATIAL CHARACTERISTICS OF
THE ROMA POPULATION IN HUNGARY
EXPERIMENTAL POPULATION PROJECTIONS TILL 2021 ¹**

LÁSZLÓ HABLICSEK²

INTRODUCTION

The demography of the Roma population in Hungary seems to have differed sharply from the country average for quite a long time. Thus it is extremely important to describe their demographic situation and to draw a realistic picture of the future. Not only the demographics, but also the complex socio-economic situation of the Roma population needs careful investigation (Szalai et al. 2000).

While the above statements can hardly be disputed, it seems extremely difficult to define Gipsy or Roma in Hungary. There are no objective criteria on the basis of which people could be categorized as belonging to this partial population (Ladányi and Szelényi 1997).

For a statistical definition and a separation from the non-Roma population basically four methods have been employed. We can talk about (1) a group of people speaking Romani language, (2) maintaining relevant ethnic identity. These two types of information can mainly be gathered on the basis of self-identification. It is also possible but at the same time quite problematic to establish such categories by using (3) the categorisation of the interviewer himself or herself in a statistical survey (4) the assessment of the environment of the investigated individual or household. The interviewee can cooperate concerning the latter types of categorisation procedures by asking whether he/she disapproves the inclusion (Kertesi 1998).

The four different methods do not lead to similar results. It is a widely recognised the problem that the size of the Hungarian Roma population cannot be established directly on the basis of ethnicity and language use as recorded in the population censuses. As compared to the other Hungarian minorities the Hungarian Roma population has lost its language. According to the censuses

¹ The original study was written for the Ministry of Social and Labour Affairs in collaboration with Márta Gyenei and István Kemény.

² Deputy director, Demographic Research Institute, Budapest.

Email: hablicsek@demografia.hu

the mother tongue of those Roma who speak only language is basically Hungarian. While in the case of those who speak two or more languages it is rather frequent that one is Hungarian and the other is the language of that neighbouring country where the ancestors have spent a longer period before settling down in Hungary. With regard to questions on ethnicity it is also clear that less people declare as it is “in reality”.

Therefore Hungarian social scientists evaluate the census data together with data coming from other representative surveys (Kemény 1974; Kertesi and Kézdi 1998; Kemény and Janky 2003). Furthermore it is necessary to make estimates on the demographic situation of the Roma population in Hungary (Hablicsek 2000).

In this study the demographic characteristics of the Roma will be analysed with regard to two different populations:

- The analysis of the characteristics of the population declaring Roma ethnicity (hereinafter Roma minority)
- The estimate and the projection of the characteristics of the population identified by others than the respondents as being Roma (hereinafter population classified as Roma or occasionally the Roma population).

It is rather clear that the analysis of the latter population is more important politically as it turns out that the population considered being Roma is far larger than that of Roma minority while both populations are strongly disadvantaged concerning their socio-economic situation.

ROMA POPULATION BASED SELF-IDENTIFICATION (ROMA MINORITY)

By analysing the last two censuses we have created a labour supply database of the Roma minority. This contains the following:

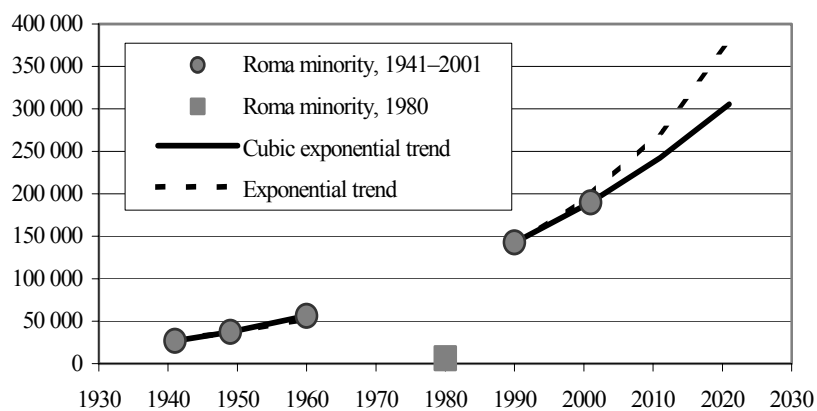
- Roma minority by sex and five year age groups (0–4, 5–9,..., 80–84, 85+) in the census of 1990 and 2001, in the capital, in 19 counties, in seven regions and in Hungary.
- The age groups are divided according to highest completed educational level: less than 8 classes, 8 classes, vocational training, high-school graduation, high education.
- These categories are created for the whole minority group and also for its economically active and inactive parts.

In the present study we focus on the demographic characteristics only.

Trends of population size concerning the Roma minority, 1941–2001

As presented in figure 1 the size of Roma minority has increased by sevenfold between 1941 and 2001. Nonetheless, the growth is not exactly exponential; the cubic exponential trend fit³ produces much better results (formally due to the fact that more parameters are incorporated, but essentially due to the slowly diminishing growth rate). In case we accept that the future size of the population falls in between the two trends, then it seems that in 2011 the size of the Roma ethnic group (those expressing such identity) will be between 240 and 280 thousand, in 2021 between 300 and 380 thousand. Taking into consideration that the ratio of the number of people claiming Roma identity to those categorised as Roma according to the surveys is around one to three, the projected figure of those put into this category might be between 900 thousand and 1 million 140 thousand in a time of twenty years!

What can be the source such a quick growth of this population? It is clear that demographic factors (high natural growth) are the most important ones, but at the same time international migration and the increasing rate of accepting this identity can also play a role.



Date of census	1941	1949	1960	1980	1990	2001
Size of the Roma minority	27 033	37 598	56 121	6 404 (?)	142 683	189 984

Figure 1
The size of the Roma/Gypsy population according to population censuses, 1941–2001

³ I. e. fitting an exponential function with cubic polynomial in exponent:

$$f(x) = \exp(ax^3 + bx^2 + cx + d).$$

We cannot disregard international migration. There can be migrants who claim to have a Roma identity. But on the basis of available knowledge it seems hardly possible that a large number of such migrants have arrived into Hungary recently.

The increase of the rate of declaring such identity might be a more important partial source of the population increase. In the 1990s the “Roma issue” became hotly debated as it is rather clear that this population was a major loser of the regime change (Szalai 2000). We might assume that an increasing rate of people declared such an identity due to the growing public debate. However the key factor is surely the high natural growth.

Population development of the Roma minority between 1990 and 2001. A demographic account

To measure the demographic characteristics of the Roma minority we cannot use population registers because no questions on ethnicity are included. Therefore a special accounting estimation method was used between the two censuses of to a systematic population estimate between 1990 and 2001. Starting with the age/sex figures of the Roma minority in 1990 a population projection was prepared until 2001 utilising the following assumptions:

- 1) Natural growth determines the population size and structure of the Roma minority.
- 2) The age-specific fertility of the Roma population is identical with the overall national pattern of 1954 due to the fact that this was the highest fertility (2.98 average children) after the Second World War in Hungary and closest to the average number of children of the Roma population in 1990.
- 3) Age-specific mortality of the Roma minority is identical to the national profile of 1990.
- 4) The fertility and mortality level changes in a way that the calculated age structure of the Roma minority is closest to the one found in the 2001 census.
- 5) The gap between the projected 11–49 year old female population and that of the 2001 census (due to identity change and/or migration) was integrated into the population size of the age groups below the age of 11.
- 6) The declaration of the Roma identity is stable enough for such an estimate and future identity changes are excluded.

On the basis of this demographic accounting we have established the following trends:

- I. The average fertility in the Roma minority between 1990–2001 was 3.12 as if a 100 women would bear 312 children during their lifetime. Fertility dropped during the 1990s, but remains high. As compared to the figure of 3.4 estimated in 1990 this value for 2001 is 2.9. In comparison to the national average in 1990 was 1.9 and in 2001 it was 1.3.
- II. The average life expectancy at birth for the Roma minority men was 58.8 years and for the Roma minority woman this was 67.5. The improvement of mortality is assumed for the 1990s and in 2001 it was 63.7 and 71.3 respectively. For comparative reasons the national figures for 2001 was 68.2 and 76.5 respectively.
- III. The closed population estimate calculated from 1990 till 2001 was 9,600 people less than found in the census in 2001. The difference can be linked to changes in declaring identity and to international migration. On the basis of the age structure we assume that there was an international migratory surplus in the Roma population in the last decade.
- IV. The age-structure of the Roma minority has become somewhat older. At the beginning of 1990 average age was 23.0 years while at the beginning of 2001 it was 24.5 years. At the same time there is no real change in the proportion of people above the age of 60. In 1990 it was 4.3% while in 2001 it was 4.4%. The corresponding national figures in terms of mean age are 37.3 years in 1990 and 39.2 years in 2001, and in terms of proportion above 60 18.9 percentage in 1990 and 20.4% in, 2001.

The above results clearly appear in figure 2 where we compare the age pyramid of the 2001 census with the one estimated.

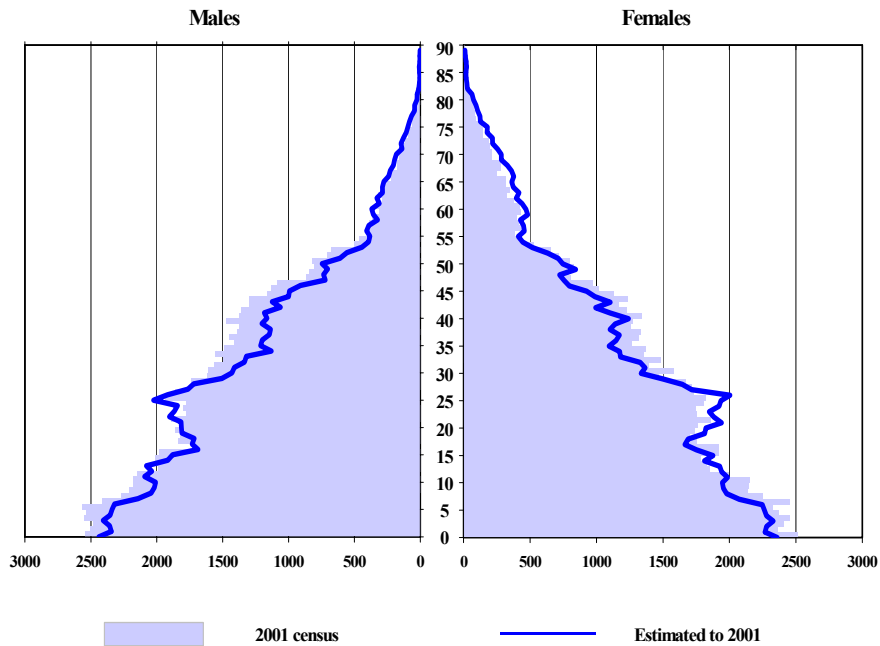


Figure 2
Age pyramid of the Roma minority group according to the 2001 census and projected from the 1990 census on the basis of the natural population movement

Population changes of the Roma minority by regions

On the basis of the national demographic accounting the demographic changes by regions and counties for the period between 1990 and 2001 were also estimated. The same assumptions have been set like on the national level both for the fertility profile, the base mortality, migration and the identity balance of women in their fertile period. It is also to be noted that in the case of certain counties the population figures are rather low. Nonetheless it can be stated that figures based on direct national estimates and those based on the aggregation of county-level estimates correlate rather well which fact demonstrates the value of demographic accounting.

There are some surprising results of the regional analysis.

- 1) *There is a great variety in the regional population development of the Roma minority.* The population increased in all but one county and the

growth was relatively huge in the northern region (more than 21 thousand people) and most intensive in the central region (59%).

- 2) *On a national level the main source of increase is natural growth but on a regional level this impact is varied.* In the central region migration and the change in declaring identity is far more important as compared to natural growth.
- 3) *Most probably the movement of the Roma minority is rather great throughout the whole country.* We can assume immigration from abroad and also internal migration between East and West, South and North on the basis of the demographic account. The impact of the latter two factors is comparable to that of natural growth.

Table 1
Changes in the number of people declaring Roma identity and the estimated components of change, 1990–2001

Region	Population size in the census		Natural growth, 1990–2001		Other change, 1990–2001		Total change, 1990–2001	
	1990	2001	No.	%	No.	%	No.	%
Budapest	8 123	12 266	1 371	16.9	2 772	34.1	4 143	51.0
Central Hungary	14 788	23 518	3 265	22.1	5 465	37.0	8 730	59.0
Central Transdanubia	5 718	8 142	1 281	22.4	1 143	20.0	2 424	42.4
Western Transdanubia	6 131	6 788	1 090	17.8	–433	–7.1	657	10.7
Southern Transdanubia	18 114	22 723	2 399	13.2	2 210	12.2	4 609	25.4
Northern Hungary	45 959	66 827	15 564	33.9	5 304	11.5	20 868	45.4
Northern Great Plain	41 665	48 127	11 950	28.7	–5 488	–13.2	6 462	15.5
Southern Great Plain	10 308	13 859	2 161	21.0	1 390	13.5	3 551	34.4
Hungary, total, calculated from the regions	150 806	189 984	37 710	26.4	9 591	6.7	47 301	33.2

- 4) *There are major differences in fertility levels.* The highest average number of children is estimated for Northern Hungary, the total fertility rate is between 3.5 and 4.0. Life expectancy also varies by a great extent; however its estimation is more unstable in our demographic accounting (Table 2).

Table 2
(Estimated) fertility and mortality of the Roma minority

Region	Total fertility rate (average number of children)		Life expectancy at birth, 1990–2000		
	1990– 2000	1990–2000, without correcting for migration	men	women	total
Budapest	2.09	2.81	64.2	73.4	68.7
Central Hungary	2.59	3.44	63.5	72.9	68.1
Central Transdanubia	2.58	2.97	63.7	66.5	65.1
Western Transdanubia	2.33	2.28	57.8	66.3	62.0
Southern Transdanubia	2.07	2.39	60.7	66.1	63.4
Northern Hungary	3.76	4.13	60.9	69.4	65.1
Northern Great Plain	3.44	3.20	56.9	61.4	59.1
Southern Great Plain	2.73	3.01	61.4	65.9	63.6
Hungary, total, calculated from the regions	3.12	3.35	59.9	67.5	63.6

- 5) *There are basic changes and characteristic differences in the age composition.* Due to the slow decrease of the number of children the largest age groups are moving into the active period in the age-pyramid (Table 3). The regional variance of the age distribution is presented on the Figure 3 and 4.

Table 3
*Age structure of the population with a Roma identity by broad age groups,
1990 and 2001 (%)*

Region	Proportion of the 0–19 year old		Proportion of the 20–59 year old		Proportion of the 60+ year old	
	1990	2001	1990	2001	1990	2001
Budapest	43.6	35.7	53.7	60.6	2.6	3.7
Central Hungary	47.6	40.2	49.2	56.0	3.2	3.8
Central Transdanubia	54.7	42.2	41.5	54.0	3.8	3.8
Western Transdanubia	52.3	40.3	43.7	54.7	4.0	5.0
Southern Transdanubia	45.7	36.1	49.0	57.9	5.3	6.0
Northern Hungary	51.9	48.7	43.7	46.8	4.4	4.5
Northern Great Plain	54.6	49.2	41.1	46.9	4.4	3.9
Southern Great Plain	49.0	42.2	46.5	53.6	4.4	4.2
Hungary, total	51.4	45.2	44.3	50.4	4.3	4.4

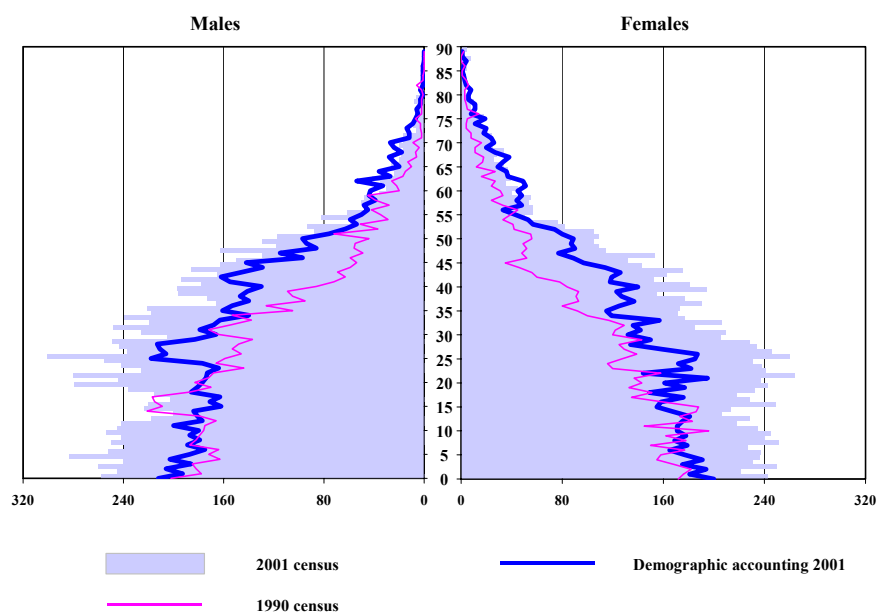


Figure 3
*Age pyramid of the Roma minority according to the 1990 and 2001 censuses
 and projected from the 1990 census on the basis of the natural
 population movement
 Central Hungary (number of people)*

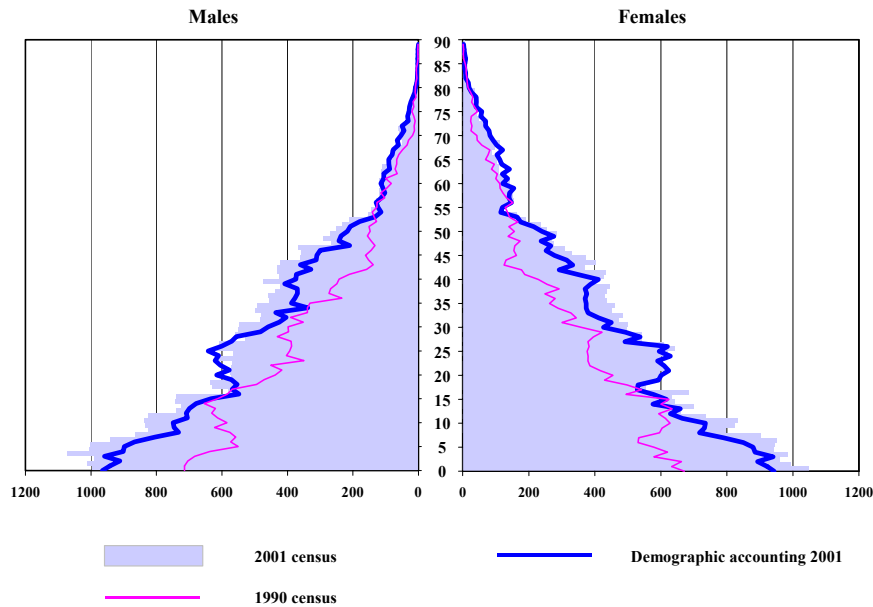


Figure 4

Age pyramid of the Roma minority according to the 1990 and 2001 censuses and projected from the 1990 census on the basis of the natural population movement Northern Hungary (number of people)

THE POPULATION CATEGORISED AS ROMA

As it turns out from the previous analysis the demographic characteristics of the Roma minority is substantially different from that of the other parts of the Hungarian population. These parameters themselves and together with the low educational level and labour force participation in particular indicate deprivation or multiple deprivation, and therefore it is legitimate to analyse the whole subpopulation having similar characteristics regardless of the fact whether they declare such an identity. As there are no objective criteria for identifying the Roma, and as it might be even dangerous to look for such criteria, we have to rely on the subjective categorisation by others than the analysed person. The categorisation can be made by interviewers, local minority representatives, teachers, local council representatives or in other words by the (living) environment of the interviewed. In the sociological surveys of the Roma population (carried out by István Kemény and his

colleagues in 1971, 1993 and 2003) complex environmental identification was carried out with the aim of estimating the socio-demographic characteristics of the population perceived as Roma.

The size of the “Roma” population in the sociological surveys

The size of the “Roma” population as demonstrated by the sociological surveys is far bigger than that of the self-declared Roma minority. The medium estimates of the Roma population in the surveys was 320 000 for 1971, 467 000 for 1993 and 569 000 for 2003. The rate of growth is almost exponential as shown in Figure 5.

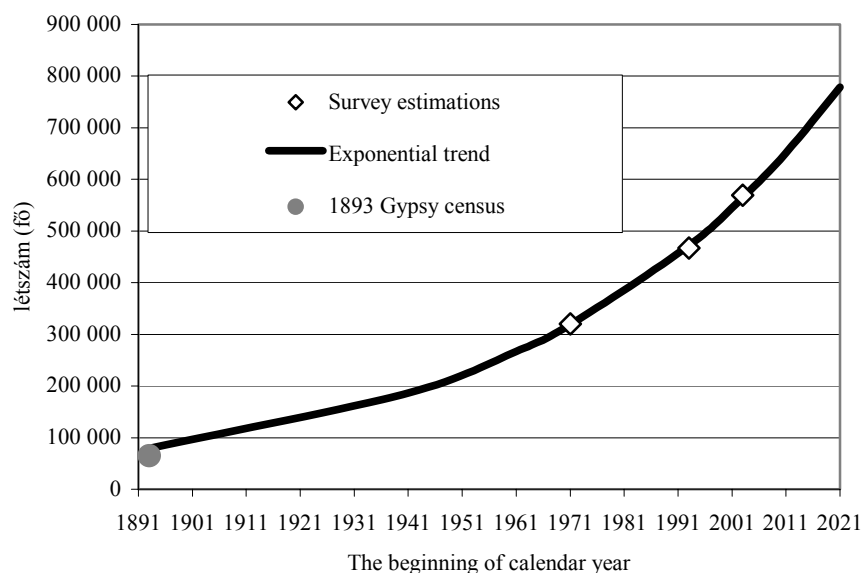


Figure 5
*Size of the population classified as Roma according to sociological surveys,
 1971–2003
 Exponential trend utilising the data of the 1893 “Gypsy census”*

It is important to see that the trend based on the population sizes established in the sociological surveys between 1971 and 2003 seems to be valid back into the 19th century as it almost perfectly reproduces the data of the national gypsy enumeration in 1893. If we compare the established trends and the actual figures of the Roma minority then we can see how rates between these figures have changed.

Table 4
Roma population size by the principle of their identification

Basis of identification	1941	1949	1960	1990	2001
Size of the ethnic group according to the censuses	27 033	37 598	56 121	142 683	189 984
Size based on the trend utilising categorisation	186 639	215 295	262 016	447 659	544 805
<i>The rate between sizes based on ethnicity figures and categorisation</i>	6.9	5.7	4.7	3.1	2.9

According to the table the difference between the figures based on alternative identification has been declining and the multiplier of 7 in 1941 has gone below 3. Here we have to refer back to our demographic accounting in which we found signs of Roma immigration and change (increase of frequency) in identification.

Regional distribution of the population categorised as Roma in the sociological surveys

Table 5 shows the spatial distribution of the population categorised as Roma by the environment. The analysis of the census data has already shown that changes between 1990 and 2001 were not only due to natural population growth, but also to the spatial restructuring of the Roma population. In the sociological surveys these changes appears much sharper.

Table 5
The regional size of the population classified as Roma in the 1993 and 2003 sociological surveys

Regions	Kemény 1993	Kemény – Janky 2003	Change 1993–2003	
			people	%
Central Hungary	71 500	80 400	8 900	12.4
Central Transdanubia	24 300	37 100	12 800	52.7
Western Transdanubia	23 100	32 700	9 600	41.6
Southern Transdanubia	65 300	70 400	5 100	7.8
Northern Hungary	128 700	182 600	53 900	41.9
Northern Great Plain	117 200	95 500	-21 700	-18.5
Southern Great Plain	36 900	70 600	33 700	91.3
Hungary, total	467 000	569 300	102 300	21.9

It is clear that the size of the population classified as Roma increased in most areas between the two dates, but there are some exceptions. There are some extreme increases and decreases, but most probably they are due to the low level representativeness of the sample in these regions. Here we refer to the sharp decrease in the Northern Great Plain and the increase in the Southern Great Plain. This is why we tried to re-estimate the regional data on the basis of other sources.

Population classified as Roma according to the demographic panel survey of DRI

A demographic panel survey (DPS) was started by the Demographic Research Institute in 2000 with the aim of investigating the subjective and objective factors of demographic behaviour in consecutive waves (2001 16 thousand respondents, in 2004 approximately 14 thousand were interviewed)⁴ In the interviewing process respondents were asked to clarify their ethnic identity and at the same time the interviewer classified people as being Roma although the analysis of this subpopulation was not a primary aim of the survey.

The answer of Roma ethnicity was given by 197 people. 214 people claimed to be Hungarian with Roma background, which means that altogether 401 people expressed links to the Roma minority. In the view of the interviewers 665 people were Roma while 194 people were classified as being unclear in terms of categories.

DPS has interviewed 0.21 percent of the concerned age groups and on this basis the population classified as Roma falls between 515 and 661 thousand depending on how we regard those classified as unclear. This makes regional data also somewhat problematic especially with regard to Budapest.

As the population size of the externally defined Roma population in Hungary we have already accepted the Kemény and Janky estimate of 569 thousand people for 2003. As a first attempt we looked for such a construction, which can be harmonised with this total figure. As expected this was the case when 50 percent of the unclear category was included. The estimates can be fine tuned taking into consideration the type of settlement. In DPS among the 197 unclear there are 67 people interviewed in the capital, 34 people found in the county centres, 53 people in other towns and 40 people in villages. It means that the share of unclear classification varies from 50 percent in Budapest to

⁴ The survey is called „Turning points of the life course” and it is the part of the international programme „Generation and Gender”, a co-operation of leading institutes of demographic research in Europe and worldwide. In 2008 the third wave of the survey will be carried out.

less than 10 percent in villages. In case we accept that Roma people represent the same ratio among the insecurely identified as they have among all the potential people the national figure presents 566 thousand people. Additional methods of clarification can be the inclusion of other social, regional and demographic characteristics of the Roma population, but the gained results have not shown substantial deviations from the original calculations described above. Finally, expert opinion was used for correcting the estimated numbers first of all for counties with few observations (4th column of Table 6).

Table 6
The regional size of the Roma population by different sources and estimates, 2003

Counties	Source				
	<i>Survey by Kemény – Jankó 2003 *</i>	According to minority statistics **	Automatic estimate from DPS ***	DPS-estimates with corrections ****	<i>Survey of Kemény – Kertesi 1993</i>
Budapest	60 000	59 127	63 800	64 000	44 000
Baranya	28 900	29 894	29 300	28 000	25 600
Bács-Kiskun	11 500	17 625	19 200	16 500	15 700
Békés	43 300	17 544	10 900	17 000	12 700
Borsod-Abaúj-Zemplén	99 300	104 440	98 700	98 000	81 100
Csongrád	15 800	10 432	9 600	9 500	8 500
Fejér	17 800	9 379	9 900	10 500	7 000
Győr-Moson-Sopron	11 900	5 489	9 500	6 000	5 200
Hajdú-Bihar	31 300	34 786	28 900	32 000	27 000
Heves	52 000	32 947	26 600	28 500	24 900
Komárom-Esztergom	3 500	11 736	8 900	11 000	8 300
Nógrád	31 300	31 257	30 900	30 500	22 700
Pest	20 400	40 100	36 800	40 000	27 500
Somogy	29 600	26 477	32 200	29 000	25 200
Szabolcs-Szatmár-Bereg	38 500	57 170	67 200	65 000	58 500
Jász-Nagykun-Szolnok	25 700	37 482	29 100	35 000	31 700
Tolna	11 900	20 789	12 800	16 500	14 500
Vas	7 500	4 482	10 000	7 000	5 500
Veszprém	15 800	9 752	16 200	11 000	9 000
Zala	13 300	14 202	15 200	14 000	12 400
Hungary total	569 300	575 110	565 700	569 000	467 000

Notes:

- * The 2003 survey is not representative on a county level.
- ** In the case of the minority populations we made exponential estimates on the basis of the 1990 and 2003 censuses. This is the way we constructed the ratio of the population identified as Roma and that of the Roma minority for 1993 and then we applied this ratio for 2003 also.
- *** Exactly that amount of insecurely identified is put beside the ones definitely categorised as the number of definitely categorised among all the potential ones (definite plus the indefinite).
- **** Expert evaluation taking into account that according to all different sources the size of the Roma population increased in all counties in the 1990s. (The automatic estimate based on DPS showed a decrease for the counties of Békés and Jász-Nagykun-Szolnok)

In the column with bold figures we find the population data accepted as legitimate for the population identified as Roma for 2003. The differences are substantial but it seems that census type information on the minority and the middle range sample data vary around the same structure, while the small sample sociological survey of 2003 deviate substantially. These differences decrease if larger regional units (great regions) are utilised.

The changes between 1993 and 2003 are extremely interesting (Table 7). Following the logic of the correction the population identified as Roma increased in certain territorial units. The average 22% growth varies between 13 and 46%. It is worth noting that only the central regions (Central Hungary, Central Transdanubia) surpass and only Northern Hungary reach the average growth. In the later case higher fertility while in the former cases immigration might be the factor behind the growth. As a result of these processes central regions have reached/surpassed the population size of the Northern Great Plain. Although Northern Great Plain takes the third biggest share out of the growth in terms of numbers, but the rate of growth is the lowest. Main cause of this restructuring can be related to the significant out migration that is a well-known fact in Hungary and it can be derived from the minority estimations of this study, too.

Table 7
Changes in the population classified as Roma by statistical region, 1993–2003

Regions	<i>Survey by Kemény–Kertesi 1993</i>	DPS-estimates with corrections for 2003	Changes between 1993 and 2003 (no.)	Changes (as a percentage of the 1993 population size)
Central Hungary	71 500	104 000	32 500	45.5
Central Transdanubia	24 300	32 500	8 200	33.7
Western Transdanubia	23 100	27 000	3 900	16.9
Southern Transdanubia	65 300	73 500	8 200	12.6
Northern Hungary	128 700	157 000	28 300	22.0
Northern Great Plain	117 200	132 000	14 800	12.6
Southern Great Plain	36 900	43 000	6 100	16.5
Hungary, total	467 000	569 000	102 000	21.8

The estimated age composition of the population categorised as Roma

Even in the tendencies of changes in the age composition there are substantial differences according to the sources of information. The Roma minority is somewhat younger than the subpopulation classified as Roma: the

mean age is 23.5 years in the census of 1990 and 25.2 years in the sociological survey of 1993. At the end of the decade the relationship is reversed, as the mean age of the minority population is 25.1 in 2001, while 24.7 in 2003. Thus in the categorised Roma population we witness a change toward a younger age composition while in the minority population as appearing in censuses we see an age composition becoming older.

Similarly to the estimates used concerning the minority group in this study population projection (demographic accounting) was performed for the population classified as Roma between the two sociological surveys of 1993 and 2003.

The estimated age compositions appear in Table 8. For comparative reasons we have indicated the age composition of the Roma minority in the censuses also here.

The main result of this estimate demonstrates that the mean age of the not self-declared Roma population also increased by 2003 as shown in the last column of Table 8 by the figure of 26.3. In other words population estimate leads to an older population in 2003 as compared to the figures provided by the survey of 2003, although the differences are not too big in terms of population sampling.

Table 8
The estimated age structure of the Roma population (classified by the census takers) in 1993 and 2003 (%)

Age group	Census		Sociological surveys		Demographic accounting 2003
	1990	2001	1993	2003	
0–14	39.6	35.6	35.4	36.8	34.1
15–19	11.8	9.6	11.8	10.3	9.3
20–24	9.0	9.5	9.4	9.1	9.3
25–29	8.5	9.1	7.5	8.7	9.5
30–34	7.7	7.8	8.0	7.7	7.6
35–39	5.8	7.1	7.3	6.5	6.0
40–44	4.0	6.6	6.0	6.4	6.2
45–49	3.5	4.8	4.0	5.0	5.7
50–54	3.1	3.3	3.2	3.1	4.3
55–59	2.7	2.1	2.4	2.5	2.7
60–64	1.9	1.7	2.0	1.6	2.1
65–69	1.2	1.2	1.4	1.3	1.4
70–x	1.2	1.4	1.6	1.0	1.8
Total	100.0	100.0	100.0	100.0	100.0
Mean age	23.5	25.2	25.1	24.7	26.3

Estimated regional age composition of the population classified as Roma

Due to the low numbers the surveys do not provide adequate information on the sex and age composition of the population classified as Roma. Accordingly we have to look for alternative solutions.

For estimation we have the population classified as Roma by age groups on a national level, and also the total sizes on regional (county) level. Detailed data on the regional age composition of the minority population are also available from the census. In other words we have the marginal in the regional-age data matrix of the categorised Roma population and we also have a background composition (that of the Roma minority) which might be identical with that of the categorised population.

On the basis of the above data we, nonetheless, can provide a linear estimate for the regional age composition of the classified Roma population. The national population figures by age shall be R_x^{Nat} , while the population size of territory T shall be R_{tot}^T , and the territorial age group sizes shall be R_x^T . The same population sizes for the minority shall be designated with the letter M. We are looking for such λ_x^T where

$$R_x^T = M_x^T \cdot \lambda_x^T,$$

and the following two conditions are satisfied:

$$\sum_T R_x^T = R_x^{Nat} \quad \text{and} \quad \sum_x R_x^T = R_{tot}^T.$$

For the sake of clarity we assume that λ_x^T multipliers can be divided up into row and column components, $\lambda_x^T = \alpha_x \cdot \beta^T$. Iteration can be the easiest way to find the latter components. Starting from 1.0-s multipliers in all cases and then substituting them with the correction rates after a few steps we find the final estimate. In the case of the sex composition we can use the sex ratios of minority population divided up according to territories and age groups.

Finally, we make estimates on the regional distribution of the population classified as Roma with regard to points of time other than that of the sociological surveys. The estimates are based on mathematical formulas roughly described in the note below Table 9.

Table 9

*The estimated number of the Roma population (classified by the census takers) by territorial units in different years (at the beginning of the years)**

Counties	The estimated size of the population classified as Roma		
	1991	1996	2001
Budapest	40 400	49 400	59 600
Baranya	25 100	26 500	27 700
Bács-Kiskun	15 400	16 000	16 400
Békés	11 900	14 000	16 100
Borsod-Abaúj-Zemplén	78 200	86 300	94 800
Csongrád	8 200	8 900	9 300
Fejér	6 400	8 000	9 800
Győr-Moson-Sopron	5 000	5 500	5 900
Hajdú-Bihar	26 200	28 600	31 100
Heves	24 100	26 100	27 900
Komárom-Esztergom	7 800	9 300	10 600
Nógrád	21 500	24 900	28 800
Pest	25 400	31 000	37 400
Somogy	24 500	26 500	28 400
Szabolcs-Szatmár-Bereg	57 300	60 700	64 000
Jász-Nagykun-Szolnok	31 000	32 900	34 500
Tolna	13 900	15 300	16 300
Vas	5 100	6 100	6 800
Veszprém	8 600	9 600	10 600
Zala	12 100	12 900	13 700
Hungary total	448 100	498 500	549 700

* The estimate has been made in the following way: On the basis of demographic accounting we set the minority population for 1993. By a log linear method we estimated the minority population for 2003 utilising the data of the 1990 and 2001 census. We set the ratio between the minority population and the population classified as Roma for 1993 and 2003. With the help of linear estimates we set the ratios for 1990, 1991, 1996 and 200. On the basis of the demographic accounting of the minority population we make new estimates for the population classified as Roma for the above dates.

The national age composition of the population classified as Roma between 1991–2001

As a result of the estimation procedures population figures and demographic characteristics of the population classified as Roma are available for the period between 1991 and 2001. The age distributions on a national level are shown in Table 10.

Table 10
Size of the population classified as Roma by age group in different years

Age group	1991	1996	2001
0–4	56 225	63 943	68 361
5–9	53 263	56 368	63 706
10–14	54 031	53 496	56 196
15–19	50 532	54 150	53 284
20–24	40 301	50 513	53 811
25–29	35 985	40 199	50 068
30–34	36 556	35 699	39 672
35–39	32 278	35 982	34 959
40–44	24 151	31 425	34 867
45–49	17 316	23 116	29 997
50–54	13 955	16 142	21 608
55–59	11 058	12 578	14 617
60–64	8 901	9 489	10 941
65–69	6 218	7 158	7 766
70–74	3 775	4 529	5 369
75–79	1 992	2 324	2 935
80–84	1 022	961	1 197
85+	541	428	346
Total	448 100	498 500	549 700

The age structure shows that the Roma population is specific in terms of large ratios of the younger age groups and the small proportions of the elderly and the effects of the slowly changing fertility and mortality patterns.

The ratio of the population classified as Roma in the total population

The proportion of the Roma population and its increase have been rather sensitive issues. In terms of numbers and historically the Roma population has been a marginal population. According to the “1893 Gypsy census” they formed 1 percent of the population. According to the estimate we made for 1941 their proportion was around 2 percent. According to the 1971 “Gypsy survey” their share was around 3 percent. They reached the level of 4 percent in the mid 1980s while 5 percent around 1997. The increase of their proportion has become more intensive with the decrease of the total population. Recently the ratio is increasing by 0.1 percent every year. The proportion of the Roma population substantially varies regionally having relatively large proportions in the Northern and North-Eastern territories. Nonetheless the greatest increase

can be seen in Budapest (48 percent) and with this in the Central region (42%) (Table 11).

Table 11
Estimated proportion of the Roma ethnic group within the total population by territorial unit, 1991–2001

Regions	1991	1996	2001
Budapest	2.0	2.6	3.4
Central Hungary	2.2	2.8	3.4
Central Transdanubia	2.1	2.4	2.8
Western Transdanubia	2.2	2.4	2.6
Southern Transdanubia	6.3	6.8	7.3
Northern Hungary	9.4	10.4	11.6
Northern Great Plain	7.4	7.8	8.3
Southern Great Plain	2.5	2.8	3.0
Hungary, total	4.3	4.8	5.4

Demographic characteristics of the population classified as Roma between 1991–2001

The estimates of the population classified as Roma can be made more complete by demographic accounting. In this case (utilising the methods described above) on the basis of the estimated sizes for 1991, 1996 and 2001 we can perform a forward population projection giving the closest results to the data estimated. This we call the demographic accounting of the population classified as Roma between 1991 and 2001.

The national demographic accounting starts from 448,100 people (1991) and reaches 549,700 people (2001). In the first period the average number of children can be assumed to 3.3, while in the second period it is less than 3.0. In the early 1990s the average life expectancy at birth can be 61.2 for men, and 68.6 years for women. In the second period mortality would improve a little and then the respective figures are 62.0 and 69.3 years.

Having a rather young age composition these characteristics lead to high numbers of births. Between 1991 and 2001 135 thousand babies were born in the population classified as Roma, while the number of deaths is estimated to be less than 35 thousand. This means a positive population growth of 100 thousand in the designated period.

The age composition of this population became older during the 1990s. The mean age increased by almost 1 year from 25.0 to 25.9 years. The ratio of the age group of 0–19 years went down from 48 percent to 44 percent, and the ratio of the 20–59 years increased with the same rate from 47 percent to 51 percent.

The ratio of the people older than 60 remained the same while the actual number of people increased from 23 thousand to 29 thousand.

The change of spatial characteristics can be characterised by great demographic differences and substantial spatial movements. The regional population changes are given in Table 12.

Table 12
*Size of the population classified as Roma by region,
1991–2001*

Regions	Number at the beginning of the year			Change between 1991–2001 (%)
	1991	1996	2001	
Central Hungary	65 800	80 400	97 000	47.4
Central Transdanubia	22 800	26 900	31 000	36.0
Western Transdanubia	22 200	24 500	26 400	18.9
Southern Transdanubia	63 500	68 300	72 400	14.0
Northern Hungary	123 800	137 300	151 500	22.4
Northern Great Plain	114 500	122 200	129 600	13.2
Southern Great Plain	35 500	38 900	41 800	17.7
Hungary, total	448 100	498 500	549 700	22.7

The sources of the change in numbers are the following. The numbers of births are well above the numbers of deaths in all regions. Internal migration is also an important source of change. According to Table 13 most importantly Central Hungary and Central Transdanubia receives the out migration coming from Northern Hungary and Northern Great Plain.

Table 13
Components of population change by region, 1991–2001

Regions	Natural growth	Migration balance	Total change
Central Hungary	16 100	15 100	31 200
Central Transdanubia	4 600	3 600	8 200
Western Transdanubia	3 400	800	4 200
Southern Transdanubia	8 600	300	8 900
Northern Hungary	34 200	–6 500	27 700
Northern Great Plain	27 300	–12 200	15 100
Southern Great Plain	6 400	–100	6 300
Hungary, total	100 600	1 000	101 600

Fertility varies substantially by regions and the differences in life expectancies are also marked. In general the relationship of higher birth number - lower life expectancy is valid but not unambiguously if we look at regions like Central Hungary.

Table 14
Fertility and mortality of the Roma population by region, 1991–2001

Regions	Total fertility rate		Life expectancy at birth	
	1991–1995	1996–2001	1991–1995	1996–2001
Central Hungary	2.78	2.63	69.6	69.9
Central Transdanubia	3.11	2.34	63.9	64.6
Western Transdanubia	2.84	2.23	62.1	62.9
Southern Transdanubia	2.48	2.10	67.0	67.2
Northern Hungary	3.80	3.72	66.9	66.8
Northern Great Plain	3.72	3.41	60.6	62.1
Southern Great Plain	3.12	2.73	64.1	64.7
Hungary, total	3.29	3.00	64.8	65.6

The regional changes in the age composition can be characterised by the slowly emerging ageing but signals of a more intensive change can be seen already.

Just looking at the mean age the Roma population has got older only slightly in two regions: in Northern Hungary and Northern Great Plain most probably due to high fertility. In the other regions ageing is remarkable, even in regions with assumed high immigration. We can explain this phenomenon with the fact that in such a young population even the migrants are older than the bulk of the population. Another consequence can be a migration flow from the North Eastern regions due to a massive increase in the young age groups there.

Table 15
Characteristics of the Roma age structure by region, 1991–2001

Regions	Mean age (year)	proportion of the age group (%)		
		0–19	20–59	60+
<i>In 1991</i>				
Central Hungary	25.2	44.4	52.0	3.6
Central Transdanubia	23.8	50.9	44.3	4.8
Western Transdanubia	24.9	49.1	45.5	5.4
Southern Transdanubia	27.3	41.9	52.0	6.1
Northern Hungary	24.6	48.8	46.0	5.3
Northern Great Plain	23.7	51.4	43.6	5.0
Southern Great Plain	25.3	46.2	49.0	4.8
Hungary, total	24.9	47.8	47.2	5.0
<i>In 2001</i>				
Central Hungary	27.2	39.2	56.3	4.5
Central Transdanubia	26.3	42.6	52.9	4.5
Western Transdanubia	27.6	39.4	54.2	6.4
Southern Transdanubia	29.8	35.8	57.0	7.2
Northern Hungary	24.9	47.9	46.5	5.6
Northern Great Plain	24.2	48.9	46.3	4.8
Southern Great Plain	26.9	41.9	53.1	5.0
Hungary, total	26.1	43.8	50.8	5.4

ASSUMPTIONS ON THE FUTURE DEMOGRAPHIC BEHAVIOUR OF THE ROMA POPULATION

Population projections are based on assumptions and the uncertainty can be reduced by *component-method* demographic calculations. Although we have the necessary information for such calculations, this information is based on estimates, thus it is basically uncertain. Therefore the hypotheses and the projections based on them shall be regarded as experimental.

Fertility

Following the component method the assumptions for the number of children always contain two components:

- How the average number of children will change?
- How the timing of the childbearing will change?

In the case of regional projections it is also important to know:

- How regional differences will change?

It is important to note that this study is the first attempt for the regional projection of the population classified as Roma and at the moment we disregard the timing of childbearing. *In other words for the projected period we assume the same fertility calendar.*

But the average number of children does change and on the basis of the estimated total fertility rate between 1996 and 2001 we assume a smaller decrease of fertility nationally. In our view the prime cause of this will be the unavoidable rise of the educational level. In the current phase of the research we cannot provide an explicit function how the change of the educational level will have an impact on fertility in this subpopulation; we note only the directions of the change.

We have applied three hypotheses on fertility, all of which assume a certain rate of decrease from the level of 3.0 observed for the 1996–2000 period:

Medium assumption

The national figure of the average number of children will decline to the level of 2.6 by the period of 2016–2020, and regional differences will decline by 25 percent.

Low assumption

The national figure of the average number of children will decline to the level of 2.2 by the period of 2016–2020, and regional differences will decline by 50 percent.

High assumption

The national figure of the average number of children will remain on the level of 3.0 by the period of 2016–2020, and regional differences will not decline.

Table 16
Assumed average number of children by region, 1996–2020

Regions	Total fertility rate according to the medium variant				Total fertility rate 2016–2020		
	1996–2000	2001–2005	2006–2010	2011–2015	Medium	Low	High
Central Hungary	2.63	2.55	2.50	2.42	2.32	2.01	2.63
Central Transdanubia	2.34	2.27	2.28	2.22	2.12	1.88	2.37
Western Transdanubia	2.23	2.18	2.17	2.10	1.99	1.79	2.19
Southern Transdanubia	2.10	2.05	2.06	2.01	1.91	1.73	2.08
Northern Hungary	3.72	3.56	3.37	3.21	3.09	2.53	3.66
Northern Great Plain	3.41	3.26	3.11	2.97	2.86	2.37	3.35
Southern Great Plain	2.73	2.65	2.60	2.53	2.44	2.09	2.80
Hungary total	3.00	2.90	2.80	2.70	2.60	2.20	3.00

Mortality

Just like in the case of fertility and following the rules of the component method there are also two components in the hypotheses on mortality:

- What will be the average life expectancy (at birth)?
- How age-specific probabilities of dying will change?

In the case of regional projection it is also important to set:

- How regional differences change?

Due to the fact that there is no specific life table on the Roma population, we based our calculations on national average mortality between 1991 and 1995 and this was what we modified on the basis of regional life expectancies. The modification is based on the method of power or in other words raising the probabilities of dying to power. In the case of female mortality we applied a technical tool, namely we did not allow that the probability of dying among women can be higher than among men (this is one of the critical points in the method of power). For the whole period of projection we calculated the probabilities of dying on the basis of the same life table according to the assumed life expectancies.

Concerning the life chances of the Roma population we assumed that they follow the hypotheses of the national population projection with regard to life expectancies.⁵ Starting from the life expectancies between 1996–2000 we assumed a smaller or larger improvement on a national level. This can be related to the modernisation of the health care and the favourable changes in the composition of the population, i.e. the increase of the educational level.

We have applied three hypotheses of mortality starting with the values of 62.0 years in the case of men and 69.3 years among women for the period 1996–2000 and assuming certain levels of improvement:

Medium variant

The national figure of the average life expectancy will rise to the level of 67.0 years among men and 75.0 years among women by the period of 2016–2020. Regional differences will decline by 25 percent.

Low variant

The national figure of the average life expectancy will rise to the level of 64.0 years among men and 72.0 years among women by the period of 2016–2020. Regional differences will remain the same.

⁵ Population projection database of the Demographic Research Institute, 2004 compiled by *Hablicsek, László* (www.demografia.hu)

High variant

The national figure of the average life expectancy will rise to the level of 70.0 years among men and 78.0 years among women by the period of 2016–2020. Regional differences will decline by 50 percent

Internal and international migration

In our calculation the most insecure factor is the internal and international migration (and with regard to the given territorial unit the combined migration balance) and therefore only a rough hypothesis has been formulated. The basis of this is provided by the net migration rates, which were calculated also on a county and a regional level also. We used rates instead of absolute numbers as in a growing population proportionately greater numbers of migrants are to be taken into account.

Due to the insecurity in estimating migration and its size we have to be extra cautious. We calculated three variants. In the base variant the net migration rates decline by 25 percent; in the low variant, where fertility declines more substantially, the decrease is 50 percent (due to the low migratory pressures), while in the high variant there is no change in the net migration.

Variants of the population projection

On the basis of the three hypotheses on fertility, mortality and migration several variants of projections can be made. As our goal was to set the limits of the change in the size of the population classified as Roma we organised the hypotheses into variants demonstrating the interval for the total size. This is why we set the base, low and high variant:

Name of the variant	Fertility	Life expectancy	Net migration
base variant	medium	medium	medium
low variant	low	low	low
high variant	high	high	high

It is to be noted that there is no assumption on the change in classification, although the future size of the population classified as Roma may depend on how this classification will change, or in what extent the share of uncertain classification will raise. The basic assumption we used here is that the Roma population is closed regarding the classification. In other words, the projections show the demographic future of the population classified as Roma at the start of the projection. This gives us the possibility to estimate the changes and assessing their impact on the whole situation of the subpopulation.

THE PROJECTION OF THE POPULATION CLASSIFIED AS ROMA
ACCORDING TO SEX AND AGE: RESULTS

The projection according to sex and age has been made on a county NUTS-3) level. Here we are dealing with the results for the country, the capital and the 7 regions.

Change of the size: quick rise

The size of the population classified as Roma in 1991 is 448 thousand, our estimate concerning 2001 is 550 thousand, and the figure projected for 2021 is between 733 and 814 thousand, with a medium value of 775 thousand people. With regard to 2001 in the base variant this is an increase of 41 percent, in the high variant almost 50 percent, while in the low variant 33 percent.

Table 17
Size of the population classified as Roma, 1991–2021

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	40 400	59 600	80 700	103 500	95 900	110 600
Central Hungary	65 800	97 000	133 000	173 400	159 600	186 700
Central Transdanubia	22 800	31 000	40 000	49 700	45 900	53 200
Western Transdanubia	22 200	26 400	30 100	33 800	31 900	35 400
Southern Transdanubia	63 500	72 400	79 600	85 100	82 700	86 800
Northern Hungary	123 800	151 500	182 000	215 700	204 300	226 500
Northern Great Plain	114 500	129 600	144 700	161 000	155 200	166 700
Southern Great Plain	35 500	41 800	48 700	56 300	53 500	59 000
Hungary total	448 100	549 700	658 100	775 000	733 100	814 300

The greatest increase appears in Central Hungary where the analysed population increases by almost 80 thousand people and by 80 percent. The process is not slower in Budapest: a surplus of 44 thousand and 74 percent. In terms of growth rates this is followed by Central Transdanubia (60%) while in terms of absolute numbers Northern Hungary is the second in rank by 64 thousand people (Table 17.).

This subpopulation will reach the level of a hundred thousand in Budapest and two hundred thousand in Northern Hungary according to all three variants.

Due to the assumed high fertility the number of those aged 0–19 has increased by a quarter from 265 thousand to 325 thousand in the different variants. As a medium value we can expect an increase of 54 thousand people,

22 percent in 2001. It is only half of the total growth rate, which indicates a decreasing impact of fertility on the future population size.

By regions there is a huge variation around the average. Budapest and Central Hungary stands out by an increase of 5 percent and even in Northern Hungary and Central Transdanubia we can expect an increase of 30 percent. In two regions nonetheless the number of youngsters is going to stagnate or even decline.

Table 18
Population size of the population classified as Roma and aged 0–19 by region, 1991–2021

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	16 500	21 200	26 700	30 600	28 000	33 700
Central Hungary	29 200	38 000	48 700	58 000	51 600	65 400
Central Transdanubia	11 600	13 200	14 700	16 500	14 900	18 100
Western Transdanubia	10 900	10 400	10 100	9 600	9 100	9 900
Southern Transdanubia	26 600	25 900	24 900	22 900	22 400	23 800
Northern Hungary	60 400	72 500	86 800	96 600	85 300	108 600
Northern Great Plain	58 900	63 400	68 800	70 300	63 600	76 400
Southern Great Plain	16 400	17 500	18 700	20 500	18 500	22 600
Hungary total	214 000	240 900	272 700	294 400	265 400	324 800

There also will be a dynamic growth in the size of the age group 20–39 including the young working ages. The age group will increase by 34 percent from 178 thousand to 239 thousand. The regions vary between 3 percent (South Transdanubia) and 60% (Central Hungary).

According to the base variant the size of the older working age group (the 40–59 years old) is going to increase from 101 thousand to 164 thousand people. There will be also extreme variations regionally. In certain regions (Budapest, Central Hungary and Transdanubia and Western Transdanubia) the size of this age group will double first of all due to the massive immigration from other regions.

Nonetheless this rate of growth is rather moderate if we look at the ageing of this population, which will increase radically. The group of people above age 60 will increase by two and a half times from 30 thousand to 78 thousand. Regional variation is going to be also substantial. In Budapest the multiplier can be as high as 4.6, but in all regions this age group will at least double.

Table 19
*Population size of the population classified as Roma and aged 60+
 by region, 1991–2021*

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	1 400	2 700	6 600	13 300	11 700	13 500
Central Hungary	2 400	4 400	9 800	19 000	16 700	19 200
Central Transdanubia	1 100	1 400	2 400	4 800	4 000	5 300
Western Transdanubia	1 200	1 700	2 500	4 300	3 800	5 000
Southern Transdanubia	3 900	5 200	8 200	13 000	11 700	13 000
Northern Hungary	6 500	8 500	11 900	19 200	17 000	18 700
Northern Great Plain	5 700	6 200	7 900	11 900	11 000	14 100
Southern Great Plain	1 700	2 100	3 500	5 400	4 900	5 500
Hungary total	22 500	29 500	46 200	77 600	69 100	80 800

Change in the age composition: accelerating ageing

As seen above the demographic ageing of the analysed subpopulation is going to accelerate in the near future. Interpreting the process with regard to internal ratios the young age dependency will decline (youngsters versus active age groups) while old age dependency (elderly versus active age groups) will increase. It is an extremely important question how total dependency rate will change. If it declines then this population will be in the early stage of ageing, while in case it increases then we have to speak about a new stage of the process characterising modern societies.

The acceleration of ageing clearly appears in the increase of the mean age of the population. On a national level the mean age of the population classified as Roma is going to increase by four years meaning an increase of one year by every five year. Regionally in the Western Transdanubia it will go up by seven(!) years while in Northern Hungary only by two years.

Table 20
Mean age of the population classified as Roma by region, 1991–2021

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	26.0	28.4	30.9	33.5	33.8	33.2
Central Hungary	25.2	27.2	29.4	31.6	32.1	31.0
Central Transdanubia	23.8	26.3	28.9	31.7	31.8	31.5
Western Transdanubia	24.9	27.6	31.1	34.6	33.9	35.2
Southern Transdanubia	27.3	29.8	32.9	35.7	35.6	35.9
Northern Hungary	24.6	24.9	25.8	27.0	28.0	26.1
Northern Great Plain	23.7	24.2	25.5	27.2	27.7	26.8
Southern Great Plain	25.3	26.9	28.7	30.4	30.9	29.9
Hungary total	24.9	26.1	27.9	29.9	30.4	29.4

The ratio of the young age groups is going to decline from 43.8 percent to 38.1 percent. The decrease in share is above the average in the Transdanubian regions with the exception of the central one.

Table 21
Proportion of the age group 0–19 within the population classified as Roma by region, 1991–2021 (%)

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	40,8	35,6	33,1	29,6	29,2	30,5
Central Hungary	44,4	39,2	36,6	33,4	32,3	35,0
Central Transdanubia	50,9	42,6	36,8	33,2	32,5	34,0
Western Transdanubia	49,1	39,4	33,6	28,4	28,5	28,0
Southern Transdanubia	41,9	35,8	31,3	26,9	27,1	27,4
Northern Hungary	48,8	47,9	47,7	44,8	41,8	47,9
Northern Great Plain	51,4	48,9	47,5	43,7	41,0	45,8
Southern Great Plain	46,2	41,9	38,4	36,4	34,6	38,3
Hungary total	47,8	43,8	41,4	38,0	36,2	39,9

The change in the ratio of the active age groups is going to be controversial. Nationally there will be a minor increase (1 percent) at least according to the base and low variant. Regionally the changes are of different directions. They will substantially increase in Central and Western Transdanubia, to a minor extent in Northern Hungary and Northern Great Plain. They will decline in Budapest and to some extent in the central region and also in the regions not mentioned above.

The share of the elderly age groups will increase substantially and in a straightforward manner. On a national level there will be an increase from 5.4 percent to 10.0 percent. This is especially true in the case of Budapest, where there will be an increase from 4.5 percent to 12.9 percent.

Table 22
Proportion of the age group 60+ within the population classified as Roma by region, 1991–2021 (%)

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	3,5	4,5	8,2	12,9	12,2	12,2
Central Hungary	3,6	4,5	7,4	11,0	10,5	10,3
Central Transdanubia	4,8	4,5	6,0	9,7	8,7	10,0
Western Transdanubia	5,4	6,4	8,3	12,7	11,9	14,1
Southern Transdanubia	6,1	7,2	10,3	15,3	14,1	15,0
Northern Hungary	5,3	5,6	6,5	8,9	8,3	8,3
Northern Great Plain	5,0	4,8	5,5	7,4	7,1	8,5
Southern Great Plain	4,8	5,0	7,2	9,6	9,2	9,3
Hungary total	5,0	5,4	7,0	10,0	9,4	9,9

Looking at Table 23 the most important conclusion is that dependency ratios in the population considered as Roma are high. According to the projections it is going to decline a little bit on a national level and substantially in certain regions, while in others there will be even a growth in this respect. Ageing is going to accelerate in Budapest and Central Hungary to such an extent that it will increase the dependency ratio. In the Transdanubian regions the ratio will decrease while in Northern Hungary and the Northern Great Plain there will be a stagnation on a high level.

Table 23
Total dependency ratio within the Roma population by region, 1991–2021

Regions	1991	2001	2011	Base	Low	High
				2021		
Budapest	0,80	0,67	0,70	0,74	0,71	0,74
Central Hungary	0,92	0,78	0,79	0,80	0,75	0,83
Central Transdanubia	1,26	0,89	0,75	0,75	0,70	0,79
Western Transdanubia	1,20	0,85	0,72	0,70	0,68	0,73
Southern Transdanubia	0,92	0,75	0,71	0,73	0,70	0,74
Northern Hungary	1,18	1,15	1,18	1,16	1,00	1,28
Northern Great Plain	1,29	1,16	1,13	1,04	0,93	1,19
Southern Great Plain	1,04	0,88	0,84	0,85	0,78	0,91
Hungary total	1,12	0,97	0,94	0,92	0,84	0,99

Finally the ageing index, namely the ratio of the elderly (60+ year old) and the younger age groups (0–19 years old) shall be considered. In the early 1990s this index was around 0.1 in all regions or in other words the number of the elderly was about 10 percent that of the young people. In 2021 on a national level this will be 25 percent, in South Transdanubia 55 and Western Transdanubia 44 percent. The number of the elderly is catching up with the number of the younger age groups rapidly putting the question of dependency into different lights.

Vital statistics: natural population growth

Mainly due to the high fertility and the young age pyramid the population classified as Roma is increasing at a rather high rate. As a consequence the number of births are high as compared to the total population of Hungary. In our estimate between 1996 and 2000 68,000 children were born in this population, which means an annual number of 13–14 thousand and a ratio of 3.2 percent. For the whole population of Hungary this ratio is below 1 percent.

It can be expected that in a growing population with a not too sharp decline of fertility the number of births will increase and this is what we find in the base variant and the high variant of the projection. In the second half of the 2010s this will be close to the number of 80 thousand meaning an annual number of 16 thousand. In the high variant the total for five years in the same period would be 90 thousand and an annual 18 thousand children.

In the large receiving regions (Budapest, Central Hungary, Central Transdanubia) beside other factors the surplus fertility of the immigrants also increases the forthcoming generations, while Northern Hungary and the

Northern Great Plain region produces identical results due to a fertility level well above the national average. At the same time reproduction will decline in Western and Southern Transdanubia and the reason is the lower fertility and the not so young age composition.

It is to be noted that in our experimental projection we assumed that migrants immediately take the characteristics of the receiving region. In other words if someone moves from a high fertility region to a low fertility region then the demographic behaviour of the concerned person changes without transition. On a national level this also points toward the decrease of fertility, at least in a technical sense as this assumption is yet to be demonstrated.

Table 24
*Number of live-births in the population classified as Roma by region,
1996–2020*

Regions	1996–2000	2006–2010	2016–2020		
			Base	Low	High
Budapest	6 000	6 900	7 600	6 500	8 700
Central Hungary	10 800	12 600	14 600	12 200	17 100
Central Transdanubia	3 000	3 700	3 800	3 400	4 400
Western Transdanubia	2 600	2 500	2 400	2 300	2 700
Southern Transdanubia	6 400	6 400	5 900	5 400	6 500
Northern Hungary	22 100	23 400	26 600	21 800	31 300
Northern Great Plain	18 600	18 900	19 700	16 400	22 600
Southern Great Plain	4 500	5 200	5 400	4 500	6 200
Hungary total	68 000	72 700	78 400	66 000	90 800

The number of deaths is going to be low as the older population (above 40) producing such events is rather small within this subpopulation. But it is going to increase because the ageing process will counterbalance the improvement of life expectancy. Between 1996 and 2000 we can calculate altogether 17,500 deaths (on average annually 3,500 people) and depending on the increase of life expectancies we can assume 20–28 thousand deaths for the second half of the 2010s. The increase is going to appear in all regions although with somewhat different scales.

As a balance between deaths and births natural growth is substantial. Due to the surplus of births between 1996 and 2000 the population classified as Roma increased by 50 thousand and this scale is going to be the case in the forthcoming years. According to this there will be an increase above 100 thousand people in every decade. The high variant deserves attention, as in this case between 2016–2020 natural growth will be close to 70 thousand mainly due to the assumption that fertility is not going to change. This subpopulation is

so young that even in the case of decreasing fertility there will be a surplus of 8 thousand every year.

On a regional level natural growth varies substantially. It is declining in Transdanubia and stagnates in the other regions. Nonetheless, it is clear that reproduction is slowing down in the analysed population. Natural growth is going to decline from 26 per thousand to 11–21 per thousand. In the base variant all regions show a decline. In Budapest the rate will almost halve. In Western Transdanubia the decline will be even more radical. But according to our calculations the natural growth will remain above 20 per thousand in Northern Hungary and in the Northern Great Plain region.

The share of the population classified as Roma in the total population between 1990–2021

The share of this subpopulation is around 6 percent and by 2011 it will reach 6.6 percent and by 2021 7.7–8.0 percent. This means that after 1990 the share of this population doubles within 30 years.

The relevant proportions vary substantially among the regions of the country. In Northern Hungary the weight of this population is already above 10 percent and in 2021 it will be close to 20 percent. At the same time the proportion will remain below 5 percent in Central and Western Transdanubia and the Southern Great Plain region. The greatest increase will be observable in Budapest, the surrounding Pest county, and in Central Transdanubia: in the capital the share of the population classified as Roma will triple in the three decades after the change of the regime. In Central Hungary it will increase by two and a half times and in Central Transdanubia it will more than double.

Table 25
Proportion of the population classified as Roma within the actual population by region, 1991–2021 (%)

Regions	1991	2001	2006	2011	2021
Budapest	2.0	3.4	4.2	5.0	6.5
Central Hungary	2.2	3.4	4.0	4.7	6.1
Central Transdanubia	2.1	2.8	3.2	3.6	4.6
Western Transdanubia	2.2	2.6	2.8	3.1	3.5
Southern Transdanubia	6.3	7.3	7.8	8.4	9.4
Northern Hungary	9.4	11.6	13.1	14.7	18.1
Northern Great Plain	7.4	8.3	8.9	9.5	10.8
Southern Great Plain	2.5	3.0	3.4	3.7	4.5
Hungary total	4.3	5.4	6.0	6.6	8.0

As the age composition of this population is young while the whole population is rather old, the relevant shares in the younger age groups are much higher than nationally and much lower in the older age groups.

Table 26
Proportion of the persons classified as Roma and aged 0–14 within the actual population of the same age by region, 1991–2021 (%)

Regions	1991	2001	2006	2011	2021
Budapest	3.4	6.9	8.7	9.7	10.5
Central Hungary	3.9	6.9	8.2	9.1	10.6
Central Transdanubia	3.6	5.1	6.0	7.0	8.1
Western Transdanubia	3.8	5.1	5.4	5.6	5.4
Southern Transdanubia	9.5	11.7	13.0	13.4	13.3
Northern Hungary	16.6	25.1	30.8	35.6	40.5
Northern Great Plain	13.0	17.0	19.6	21.3	22.0
Southern Great Plain	4.5	5.8	6.6	7.6	8.6
Hungary total	7.7	11.1	13.0	14.4	15.6

In the age group of 0–14 the proportion of the population classified as Roma is 13 percent on a national level in 2006. In case the base variant will be realised (slightly decreasing number of children); the proportion will be almost as high as 16 percent.

Regional variation is substantial even in this respect. In Northern Hungary due to the stable high fertility the share of the children classified as Roma increased from 17 percent in 1991 to 30 percent in 2006 and in the base variant this can reach 40 percent by 2021.

But in the majority of the regions the increase of the relevant proportions will slow down and in some cases even it will stop.

CONCLUSIONS

In this study an overall picture has been drawn on the national and regional demographic characteristics of the population with a Roma identity or being classified as Roma. Also a projection has been made for the forthcoming 15 years by counties and by regions.

It is to be noted that the lack of data on the Roma population does not make a detailed analysis possible. It is particularly true concerning the regional demographic conditions. Though demography offers the possibility of relatively reliable estimates, but these methods cannot fully substitute real data. Regardless of the fact that our analysis on the demography of the Roma minority fit into the results of all the relevant major investigations, we should

remain cautious. We aimed at demonstrating the results and consequences of a thorough analysis and comparison of the data being at our disposal considering the processes in the background within reasonable limits. Nonetheless the result should be considered to be only rough estimates.

The estimated size of the Roma population continuously increased in Hungary in the last hundred years, well above the average growth rate of the total Hungarian population. In the 1990s their proportion in the total population grew from 4 to 6 percent. That growth has been fuelled by high fertility that is about twice as high as the country average. The age structure is very young; the proportion of the children is about 40 percent within the concerned population.

These characteristics highlight the fact that the Roma population is in another phase of demographic development as compared to the non-Roma population. The former one – using the terminology of the first demographic transition – is at the beginning of the so-called transitional phase. It has still a young age structure, high fertility, and relatively high mortality. As a consequence of these facts a further significant growth of the sub-population is to be expected in the next period.

The Roma and non-Roma population development may significantly diverge in the future. As a consequence the proportion of the Roma minority will rise in all age groups. That rise will be particularly spectacular in the young age groups, where in some decades it might happen that every sixth child will come from the analysed group, while very strong regional differences are to develop in this respect.

It is to be noted that Roma minority is sharply increasing in number and at the same time it is going through dramatic changes concerning the age structure and other socio-demographic characteristics. Thus it is all the more important (and our study adds to the already existing arguments) that relevant policy measures should be formulated and implemented in order to avoid social and political traps endangering the Hungarian society.

Translated by Attila Melegh

BIBLIOGRAPHY

- Gábos, A. and Tóth, I. Gy. 2000. *A gyermekvállalás támogatásának gazdasági motívumai és hatásai.* (The economic motives and effects of the support concerning childbearing.) *Századvég*, (4): 77–114.
- Gyenei, M. 1993. *Létminimum alatt – Jajhalom I.* (Below the minimum standard of living – Troublebury.) *Statisztikai Szemle*, 1993. January: 16–31.
- Gyenei, M. 1993. *Létminimum alatt – Jajhalom II.* (Below the minimum standard of living – Troublebury.) *Statisztikai Szemle*, 1993. February. 130–146.

- Gyenei, M. 1998. *A 'stratégiai gyerek'*. (Strategic child.) *Népszabadság*. 1998. November 14.
- Gyukits, Gy. 2003. *Gyermekvállalás a nagyvárosi szegénynegyedben élő fiatalkori roma nők körében*. (Childbearing among young Roma women living in the poor suburbs of large cities.) *Szociológiai Szemle*, 2003 (2): 59–83.
- Hablicsek, L. 1992. *A magyarországi demográfiai átmenet vizsgálata*. (The study of the Hungarian demographic transition.) Budapest, KSH NKI Kutatási Jelentések 42. KSH Népszégtudományi Kutatóintézet.
- Hablicsek, L. 2000. *Kísérlet a roma népesség előszámitására 2050-ig*. (Experimental Roma population projection.) In Horváth, Á. et al. (ed.): *Cigánynak születni. Tanulmányok, dokumentumok*. (Born to be a Gypsy, Studies and Documents.) Budapest, Aktív Társadalom Alapítvány & Új Mandátum Kiadó: 243–276.
- Havas, G., Kemény, I. and Kertesi, G. 1998. *A relatív cigány a klasszifikációs küzdőtéren*. (The relative gypsy in the classification arena.) *Kritika*, 1998. March.
- Havas G., Kemény, I. and Liskó, I. 2002. *Cigány gyerekek az általános iskolában*. (Gypsy children in the elementary schools.) Oktatókutató Intézet – Új Mandátum Könyvkiadó, Budapest.
- Horváth, Á., Landau, E. and Szalai J. (ed.) 2000. *Cigánynak születni. Tanulmányok, dokumentumok*. (Born to be a Gypsy, Studies and Documents.) Aktív Társadalom Alapítvány & Új Mandátum Kiadó, Budapest.
- Janky, B. 1999a. *Lakóhelyváltoztatások a cigányok körében*. (Moving among Gypsies.) In Kemény, I. (ed.): *A cigányok Magyarországon. Magyarország az ezredfordulón*. (Gypsies in Hungary. Hungary at the turn of the millennium.) MTA, Budapest: 175–203.
- Janky, B. 1999b. *A cigány nők helyzete*. (The status of Gypsy women.) In Pongrácz, M. and Tóth, I. Gy. (eds.): *A nők helyzete. (The status of women.)* Munkaügyi Minisztérium – TÁRKI, Budapest: 217–238.
- Kapitány, B. and Spéder, Zs. 2004. *Szegénység és depriváció*. (Poverty and deprivation.) KSH Népszégtudományi Intézet, Műhelytanulmányok 4. Budapest.
- Kemény, I. 1974. *A magyarországi cigány lakosság*. (The Hungarian Gypsy population.) *Valóság*, 1974. January: 63–72.
- Kemény, I. 1975. *A budapesti cigányokról*. (On Gypsies in Budapest.) Budapest 1975. (5).
- Kemény, I. (ed.) 1976. *Beszámoló a magyarországi cigányok helyzetével foglalkozó, 1971-ben végzett kutatásról*. (Report on the research project on Hungarian Gypsies carried out in 1971.) MTA Szociológiai Kutató Intézet, Budapest.
- Kemény, I. 1997. *A magyarországi roma (cigány) népességről*. (On the Hungarian Roma /Gypsy/ population.) *Magyar Tudomány*, (6): 641–655.
- Kemény, I. 1999b. *Tennivalók a cigányok/romák ügyében*. (Policy needs concerning Roma/Gypsy.) In Kemény, I. (ed.): *A cigányok Magyarországon*. (Gypsies in Hungary.) MTA, Budapest: 229–256.
- Kemény, I. (ed.) 2000a. *A magyarországi romák*. (Hungarian Roma.) Press Publica, Budapest.
- Kemény, I. and Janky, B. 2003a. *A cigány nemzetiségi adatokról*. (On Gypsy minority statistics.) *Kisebbségkutatás*, 2003 (2): 309–315.

- Kemény, I. and Janky, B. 2003b. *A 2003. évi cigány felmérésről – Népesedési, nyelvhasználati és nemzetiségi adatok.* (On the 2003 Gypsy survey. Data on language use and on ethnicity.) *Beszélő*, 2003. October: 64–76.
- Kemény, I. and Janky, B. 2003c. *A cigányok foglalkoztatottságáról és jövedelmi viszonyairól.* (On the employment of Gypsies and their income position.) *Esély*, 2003 (6): 58–73.
- Kertesi, G. 1995b. *Cigány foglalkoztatás és munkanélküliség a rendszerváltás előtt és után.* (The employment and unemployment of Gypsies before and after the change of the regime.) *Esély*, 2003 (4): 19–63.
- Kertesi, G. 1998. *Az empirikus cigánykutatások lehetőségéről.* (On the opportunities of carrying out empirical research on gypsies.) *Replika*, 1998 (29).
- Kertesi, G. and Kézdi, G. 1996. *Cigányok és iskola.* (Gypsies and the school.) *Educatio Füzetek* 3. Budapest.
- Kertesi, G. and Kézdi, G. 1998. *A cigány népesség Magyarországon.* (Gypsy population in Hungary) Socio-typo, Budapest.
- Kocsis, K. and Kovács, Z. 1991. *A magyarországi cigány népesség társadalom földrajza.* (The social geography of the Hungarian gypsy population). MTA–PTI, Budapest.
- Ladányi, J. and Szelényi, I. 1997. *Ki a cigány?* (Who is a Gypsy?) *Kritika*, 1997. December.
- Ladányi, J. and Szelényi, I. 1998. *Az etnikai besorolás objektivitásáról.* (On the objectivity of ethnic classification.) *Kritika*, 1998. March.
- Liskó, I. 2002. *Cigány tanulók a középfokú iskolákban.* (Gypsy students in secondary schools.) Oktatókutató Intézet, Budapest.
- A Magyarországon 1893. január 31-én végrehajtott cigányösszeírás eredményei.* (The results of the Gypsy census carried out on January 31, 1893.) Magyar Statisztikai Közlemények. Új folyam. IX. kötet. 1895.
- Népszámlálás. A magát roma (cigány) nemzetiségűnek vallók statisztikai adatai: népesség, iskolázottság, gazdasági aktivitás és inaktivitás, 1980, 1990, 2001* (adatfeldolgozás). (Hungarian census. Statistical data of the people declaring Roma (Gypsy) identity: population, education, economic activity and inactivity.)
- Spéder, Zs. (ed.) 2002. *Demográfiai folyamatok és társadalmi környezet. Gyorsjelentés.* (Demographic processes and social environment. Rapid report.) KSH Népeségtudományi Kutatóintézet, Budapest.
- Szalai, J. 2000. *Az elismerés politikája és a cigánykérdés.* (The policy of acceptance and the Gypsy question.) In Horváth, A. et al. (ed.): *Cigánynak születni. Tanulmányok, dokumentumok.* (Born to be a Gypsy. Studies and Documents.) Aktív Társadalom Alapítvány & Új Mandátum Kiadó, Budapest: 531–572.