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**School segregation, school choice
and educational policies
in 100 Hungarian towns**

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Abstract

The distribution of Roma and non-Roma students across schools has become considerably more unequal in Hungary since the 1980's. This paper analyzes the effect of school choice and local educational policies on that inequality, known as school segregation, in 100 Hungarian towns. We combine administrative data with data from a survey that we collected from municipality administrations with respect to local educational policies and the ethnic composition of neighborhoods. Our results indicate that in Hungarian towns, free school choice diminishes the role of residential distribution because many students commute to schools of their choice. Towns where such commuting is more pronounced are characterized by stronger inter-school inequalities. We also find that local educational policies have, on average, somewhat segregationist tendencies, though there is substantial heterogeneity across towns. The more segregationist the local policies are, the higher the segregation in the town, thus suggesting that local policies have room to influence school segregation in this system. However, the impact of local educational policies is weaker than the role of school choice.

Keywords: School segregation, Roma minority, school choice, local educational policies

JEL classification: I24, I28, J15

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Iskolai szegregáció, szabad iskolaválasztás és helyi oktatáspolitiká 100 magyar városban

Kertesi Gábor – Kézdi Gábor

Összefoglaló

A roma és nem roma tanulók aránya szerinti egyenlőtlenség - az etnikai elkülönülés, másnéven szegregáció - nagymértékben megnövekedett a magyar általános iskolák között a nyolcvanas évek óta. Jelen tanulmány 100 város adatain vizsgálja a szabad iskolaválasztás és a helyi iskolapolitika szerepét az iskolák közötti etnikai szegregációban. Adminisztratív adatokat kombinálunk egy olyan kérdőíves felmérés adataival, amit mi folytattunk a városok oktatáspolitikájának és a városokon belüli lakóhelyi etnikai elkülönülésnek a feltárására. Eredményeink azt mutatják, hogy a magyar városokban a szabad iskolaválasztás csökkenti a lakóhelyi elkülönülés szerepét az iskolák közötti szegregációban azáltal, hogy sok, főleg magasabb státuszú tanuló jár lakóhelyétől távolabbi iskolába. Azokban a városokban, ahol több tanuló jár lakóhelyétől távolabbi iskolába, az iskolák közötti szegregáció is jóval erősebb. Azt is kimutatjuk, hogy a helyi iskolapolitikák átlagosan enyhén szegregációs irányba mutatnak, de nagyok az egyes városok közötti különbségek. Azokban a városokban, ahol inkább szegregációs tendenciájú az iskolapolitika, az iskolák közötti etnikai szegregáció is magasabb, ami azt jelzi, hogy a helyi iskolapolitikanak van szerepe az etnikai szegregáció alakításában. Eredményeink alapján azonban a szabad iskolaválasztás szerepe jóval erősebb, mint a helyi iskolapolitikák szerepe.

Tárgyszavak: iskolai szegregáció, roma kisebbség, szabad iskolaválasztás, helyi oktatáspolitiká

JEL kódok: I24, I28, J15

1. INTRODUCTION

The distribution of Roma and non-Roma students across schools has become considerably more unequal in Hungary since the 1980's. A standard index of segregation shows that ethnic segregation more than doubled in areas with more than one school (Kertesi and Kézdi, 2012), from below 0.10 to above 0.20. The increase appears to have been largest in large towns and cities. The causes and consequences of that dramatic increase are not yet fully understood. In this paper we show evidence that can help understand the causes of school segregation in Hungarian towns.

School segregation is understood to be the separation of students of different family backgrounds into different schools. We focus on primary schools (grades one through eight) and segregation by ethnicity: the extent to which Roma and non-Roma students attend the same schools and are, as a result, exposed to each other within the context of the schools. The degree of that separation is measured by the index of segregation, ranging from zero (even distribution across schools) to one (complete separation). We use national school-level data with respect to the fraction of Roma students to measure school segregation. Information on selective inter-neighborhood commuting of students is available from individual data also at the national level. Local educational policies and residential segregation are measured by data from the surveys that we fielded in 100 Hungarian towns. The localities were selected as they have the largest number of Roma residents, excluding Budapest, which is not included due to its size and decentralized municipal structure. Besides showing informative descriptive evidence on selective commuting, the segregationist nature of local policies and residential segregation, we combine these indicators in a cross-sectional statistical analysis to shed light on the importance of each in explaining the degree of school segregation across towns.

Institutional knowledge of the school system in Hungary is necessary for understanding potential causes of school segregation. Similar to many other countries in the region, Hungary is characterized by the dominance of state-owned primary schools and free school choice. Until 2012, schools were owned by local municipalities, and an important part of the school budgets came from central subsidies allocated on a per student basis. Municipalities complemented these subsidies with funding from their own budgets. School districts were drawn by the municipalities, and schools were required to take all children from within their district. However, schools were also permitted to admit children from outside the district. Accordingly, the total enrollment in schools was determined by capacity, by the demand from within and outside the catchment area, and by the allocation decision of the municipality. Starting in 2013, the system became more centralized, but

school choice and the most important incentives of schools remained similar. Our results correspond to the system in place before 2013.

A major innovation of our study is a detailed measurement of the segregationist or integrationist tendencies of local educational policies. Using data from questionnaire-based interviews conducted with the heads of the municipal educational offices, we constructed ten measures of the policy instruments that each town could use to influence between-school segregation. The data show that, on average, Hungarian towns tend to implement educational policies that promote increasing between-school segregation in addition to that implied by student mobility. This segregationist tendency is rather moderate, on average. There is, however, substantial heterogeneity across towns, with some towns promoting more equal ethnic distribution across schools with others practicing strongly segregationist policies.

Together with the policy measures, we collected information to measure residential segregation. Local experts were requested to estimate the size of the Roma minority in pre-defined small neighborhoods (electoral wards). We then used the data from this survey to construct our best estimate for the ethnic residential segregation in the towns examined in our study. According to our results, residential segregation is moderate in the 100 towns, and the mean of the index of segregation is 0.17. The distribution, however, is skewed as the index in most towns is below 0.10, though in a few towns, the segregation index level is higher than 0.4.

The results of our statistical analysis show that school segregation is significantly associated with student mobility, the share of the Roma population in the town and the local educational policies. These associations are strong not only one by one but also conditional on each other. In other words, for a given share of the Roma population and a given educational policy environment, higher mobility of middle class students is associated with higher levels of school segregation. At the same time, for a given level of mobility of middle class students and a given educational policy environment, a higher share of Roma students is associated with higher levels of school segregation. Finally, for given levels of mobility and Roma representation, towns with municipalities that implement educational policies that are segregationist in their objectives tend to have higher levels of school segregation. Contrary to student mobility, residential segregation is not significantly related to school segregation in our data.

These results suggest that the free school choice system in Hungary increases inequality as students self-select into schools from various neighborhoods, a sorting that is, in itself, unequal because students of higher status are significantly more likely to commute. As a result of selective commuting, between-school inequality is weakly related to, and stronger than, residential inequality. Although constrained by residential patterns and student mobility, the local educational

administration appears to have room for implementing policies that positively or negatively impact the segregationist tendencies.

These results are consistent with a simple theory of school choice that includes differentiation in the perceived quality of schools as well as sorting by ability and family background when placing children in schools. From a theoretical point of view, the system of school choice in Hungary is similar to a universal system of school vouchers. In such a universal voucher system every student would receive a voucher that he or she could redeem in any school of the country and use the voucher to pay the tuition fee applicable at the schools. A typical voucher system is a mixed system of state-owned schools that are free of charge and private schools that collect tuition. Vouchers are used to pay the tuition fee in full, and a universal system makes private schools de facto free of charge as well. The most important implications of such a system are applicable to the Hungarian system of state-owned schools and free school choice.

The economics literature on voucher systems specifies the choice situation and its consequences in a general equilibrium framework (Manski, 1992; Epple and Romano, 1998, Nechyba, 1999). Epple and Romano (1998) provide a model of ‘cream-skimming’ by private schools, modeling competition between public and private schools both with and without vouchers. A school’s quality in this model is determined exclusively by the mean ability of its student body. Because able pupils bestow a positive externality on other students, private schools link the price they charge to individual characteristics (ability and income) by offering means-tested scholarships. This leads to the main theoretical result: the most expensive private school will attract the students with the highest ability and income; then private schools of descending quality will divide up students of lower ability and/or income. The public schools in this model act as a residual, taking in the poorest and least able pupils. Introducing vouchers causes the number of private schools to increase. Students who switch from public to private school as a result of vouchers gain in achievement, though some may actually be made worse off (as the voucher reduces the quality of their outside option, the public school). Students who remain in the public school, however, are made unambiguously worse off, as the quality of their peer group has fallen. As schools do not respond positively to competition in this model, it is a pure model of cream-skimming

The implications of these theories were tested using two natural experiments, the large-scale voucher system implemented in Chile and the introduction of the free school choice system in New Zealand. The results of Hsieh and Urquiola (2006) suggest that the first-order consequence of the Chilean reform was to induce cream-skimming on a large scale. In municipalities with large increases in private school market share, public schools displayed large declines in socioeconomic status and test scores relative to all schools in the municipality. The experiment in New Zealand had

similar consequences. Some families were most likely to opt for higher socioeconomic status schools, and that additional choice led minorities to become increasingly concentrated in low socioeconomic status schools (Fiske and Ladd, 2000; Ladd and Fiske, 2001).

Our study complements these studies with the Hungarian experience. School choice became widespread in the Hungarian educational system in the early 1990's. The substantial increase in the ethnic inequality of Hungarian schools is consistent with the role of school choice. In this study we provide further evidence on the role of school choice by examining variation across the 100 towns in our sample with respect to school segregation and the degree of selective commuting of students between neighborhoods in each town. The results of our statistical analysis indicate that school choice plays a very important role in school segregation. In order to clarify the mechanisms behind the effect of school choice on inequality, we present a simplified model.

In the model, the decision-makers include those families that choose schools for their children and those schools that choose students from among the applicants. For the sake of this argument, assume that school choice is completely free within the town, that there are no commuting costs, and that there are no constraints on admission decisions by the schools. Further assume that schools are different in terms of their perceived quality. To make the argument as simple as possible, assume that there is a complete ranking among schools and everybody agrees on that ranking. It is possible that these perceptions reflect true differences in quality in the sense that the higher ranked schools would yield better outcomes from the same students than would the lower ranked schools. However, this is not necessary for the argument as it is also possible that those perceptions have little to do with actual school quality as long as those perceptions are reinforced, in the end, by student outcomes. Assume that students are different, too, in terms of their abilities. Schools form perceptions about student abilities by testing, informal conversations before admission and so on. Similar to perceptions regarding school quality, perceived skills of students may or may not reflect the true abilities of the students. All that is required, however, is that the ability ranking of students is perceived to be the same by everybody. We use the word "ability" to denote perceived ability and "quality" to denote perceived quality.

The result of school choice by students and student choice by schools is sorting. The highest ability students will be sorted into the highest ranked schools, while the lowest ability students will be sorted into the lowest ranked schools. This is a color-blind sorting equilibrium whereby students and schools do not take into account the ethnicity of students in any direct way. If, however, abilities are correlated with ethnicity, the sorting results in an unequal distribution by ethnicity across schools. This simplistic description highlights the important mechanisms that are present in

Hungarian towns. If we introduce more realistic elements, the situation becomes more complicated but the same mechanisms remain in operation with potentially weaker effects.

A simple numerical example, illustrated in Figure 1, may help shed light on the mechanisms. Consider the following scenario: Towns A and B are small, and they have two schools each while towns C and D are large, and they have 10 schools each. All schools are equal in size. For the sake of the argument, assume that each school has 100 students. The share of the Roma population is low in towns A and C (5 percent) while it is higher in towns B and D (20 percent). Assume that the schools are ranked only by perceived quality, with school I_1 being the highest ranked school and school I_2 being a lower ranked school. In the larger towns, the rankings decrease to I_{10} . The rankings are homogenous, that is, every decision-maker has the same ranking. Assume, moreover, that schools can freely select from those who apply for admission. Assume also that students are ranked solely in terms of their perceived abilities and that the Romani students are at the bottom of the ranking. Thus, quality and abilities are observable, there are no commuting costs, and there are no constraints on admission decisions. The result, as described herein, is a perfect sorting of students across schools.

Perfect sorting also indicates that the Romani students are sorted into the lowest ranked schools. Because there are more students than schools, whether and how many schools are filled up by Roma students depends on the number of schools and the proportion of the Romani population in the town. In particular, in small towns with few Romani students, even if all Romani students end up in the same school, they will have non-Roma peers; thus, that they are not completely segregated. Conversely, in towns with a higher number of Romani students (because of the increased proportion of Roma students in the population or because of a same number but a larger population), if all Romani students end up in the same school, they may fill that school resulting in complete segregation.

In town A, this means that school I_1 will be 0 percent Roma while school I_2 will be 10 percent Roma. In town C, schools I_1 through I_9 will be 0 percent Roma while school I_{10} will be 50 percent Roma. In town B, school I_1 will be 0 percent Roma, and school I_2 will be 40 percent Roma. In town D, schools I_1 through I_8 will be 0 percent Roma while school I_9 and I_{10} will both be 100 percent Roma. Figure 1 summarizes these results.

The results imply that the towns are ranked in terms of the ethnic inequality of their schools. The rankings are unambiguous among towns that have the same size (numbers of school) but different ethnic composition (share of Romani students). The results are also unambiguous among towns that have the same ethnic composition but are different in size.

In terms of the segregation indices (introduced in section 3), the towns are ranked as follows.¹ For a fixed share of Roma students in towns that vary by size:

$$S_C > S_A$$

$$S_D > S_B$$

For towns fixed in size that vary with respect to their share of Roma students:

$$S_B > S_A$$

$$S_D > S_C$$

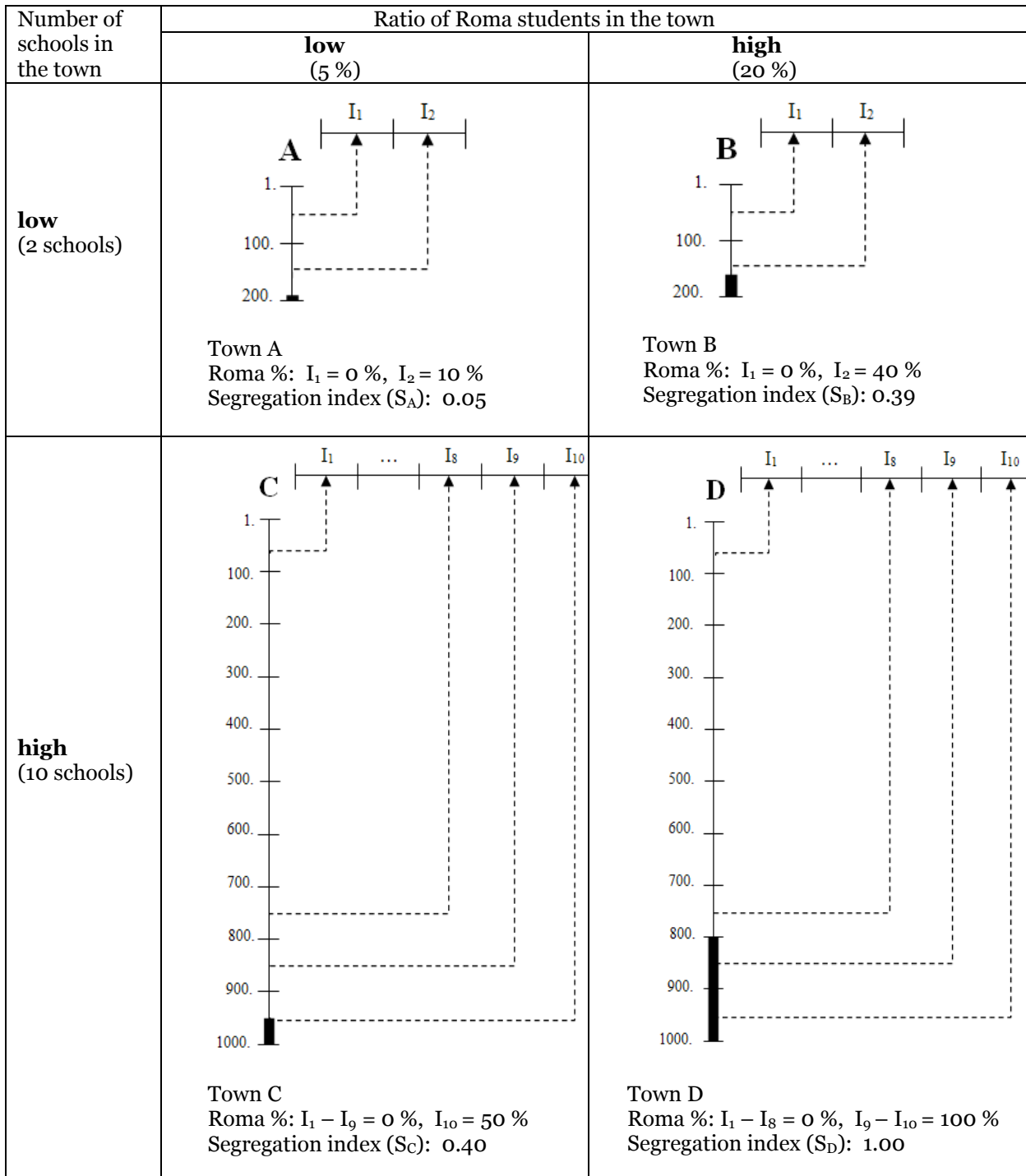
If we hold the percentage of Romani students in the town constant, larger towns are characterized by higher levels of segregation. At the same time, if we hold town size constant, towns with higher percentages of Romani students are characterized by higher levels of segregation. This finding is demonstrated in the statistical analysis, as will be presented herein.

The rest of the paper is organized as follows: the next section introduces the data and discusses the details of the measurement. The third section shows the levels and trends of school segregation in the 100 towns included in the sample. The fourth section describes residential segregation. The fifth section presents the results of our main statistical analysis, and the last section concludes our findings. The five appendices (A through E) contain more detailed information on the composition of our sample, the robustness of our results, the definitions of the policy instruments, the policy attitude measures, and the questionnaire on local policy measures.

¹The numerical results are $S_A=0.05$, $S_B=0.39$, $S_C=0.40$, $S_D=1.00$. $S_B < S_C$ is a result of the particular numerical example. Thus, the theory does not imply anything about the relationship.

Figure 1.

A polar example of achievement-based sorting



2. DATA AND METHODS

2.1 SAMPLE

The sample consists of the 100 towns and cities with the greatest Roma population, excluding Budapest, which is excluded because of its size and decentralized municipality structure. The sampling used information on the number of all students in primary schools, the number of primary schools and the proportion of Roma students in primary schools. (Typical primary schools include students in grades 1 through 8.) Information is obtained from the school-level files of the National Assessment of Basic Competences (NABC). See section 2.2 for more details on the schools included.

There are more than 200 towns and cities in Hungary, and there are over 2500 villages. Many of the towns are small (20 have only a single school, and an additional 46 have only two schools). While there is an administrative distinction between cities and towns in Hungary, we use the term “town” to denote both towns and cities. The target thresholds for selection were that the town must have a minimum of 1000 students, at least two schools, and an estimated Roma fraction above 3 per cent (the 3 per cent cutoff is determined to be one quarter of the estimated average fraction of 12 per cent in all towns and cities). Because of replacements and data corrections, the final sample consisted of a few towns that did not meet the size criterion or the established Roma representation criterion.

Table 1 shows some statistics about our sample. The median number of schools in the towns in our sample is 7, while the average is 10. The median number of students is 1900, while the average is 3000. The median town in the sample has 10 percent Roma students, the mean is over 13 per cent, and the maximum is over 50 per cent. Note that one town in the sample has only one school. However, while we left it in for the descriptive analysis, all analyses on school segregation will naturally omit this town (making the effective sample size 99). Table A.1 in Appendix A contains the list of all cities and towns in the main sample and the replacement sample, together with information on the number of students and the estimated fraction of Roma students. It also shows the number of electoral wards.

Table 1.

Descriptive statistics of the sample (2006 data)

	Population	No. electoral wards	No. schools	No. all students	Fraction of Roma students (%)
Mean	31,289	30	10	3,013	13.1
Median	18,611	20	7	1,939	9.8
Minimum	4,301	4	1	663	1.7
Maximum	207,270	190	54	18,288	53.6

2.2 MEASURING SCHOOL SEGREGATION

School segregation of a particular town is measured using the number of students and the fraction of Roma students in each school within the town. We use data from the Hungarian National Assessment of Basic Competences (NABC) for the years of 2006 through 2010. The NABC is a standards based assessment that tests reading and mathematical skills in grades 4, 6 and 8 in primary schools (as well as grade 10 in secondary schools). The NABC became standardized in 2006, and we use all data from 2006 through 2010 for our analysis.

In addition to testing the students, the NABC collects additional data on students and schools. School-level data are collected from the school principals. The measurement occurs in May of each year, and school-level data are collected during the same time. Among other things, the school-level data contain information on the number of students and the school principal's estimate of the fraction of Roma students in the school. When there are missing data, we use data from the surrounding years. The information is collected for each school site, i.e., each unit of the school with a separate address. This is important because in some towns schools as administrative units are comprised of units at multiple locations, which are sometimes quite far from each other. Throughout the study, we use the word "school" to denote the school site and use the word "institution" to denote the administrative organization that may consist of more than one school site.

Our analysis contains all Hungarian that teach primary school students. Of these schools, the NABC includes all schools that had students enrolled in grade four or grade eight in 2006 and 2007, and all schools that had students in grades six and eight in 2008, 2009 and 2010. Inclusion of all schools, however, by the NABC is limited because it does not include those institutions that teach

students of special educational needs (SEN students) after 2007. The main goal of the NABC is testing, and as a rule, SEN students are not tested, with the exception of the year of 2006. The institutions that focus on SEN students were included by the NABC in 2006, and they remained in the data collection frame for the following year. These institutions were, however, dropped from the data collection frame starting with 2008. Another source of bias is that the information regarding the fraction of Roma students is missing in some schools that do participate in the NABC. Accordingly, in addition to the problem of SEN students, non-response becomes another reason for missing data.

Missing data can bias the segregation indices. Suppose, for example, that the school in which the principal fails to provide information has no Roma students. In that case, our measures of exposure overestimate exposure and, therefore, underestimate segregation because the schools with this missing information have exposure levels below the average. In principle, it is also possible that schools with missing data have ethnic compositions that are very close to the town-level average, in which case, our measure of segregation would be biased upwards.

Table 2 shows the prevalence of missing data. It shows the number of institutions from the administrative files (KIR-STAT), the number of institutions in the NABC database, the number of schools in the NABC database (recall that we define schools as those with separate mailing addresses; some institutions have more than one school), and the number of schools with valid data. Administrative sources (KIR-STAT) have information on the number of students at the institution level but not at the school level as we define them. KIR-STAT has no information on the ethnic composition of schools.

Table 2.

Number of institutions and schools in the sample of 100 towns

	Number of institutions		Number of school sites	
	All (from KIR- Stat)	In the NABC data	In the NABC data	In the NABC data and non-missing fraction of Roma students
2006	808	794	1,014	860
2007	801	788	931	746
2008	688	615	835	770
2009	666	602	841	769
2010	649	579	838	754

Notes. “Schools” are defined by their physical location (address); “institutions” may contain more than one school. We consider primary schools (and their institutions) that teach students from grade 1 through grade 8. KIR-STAT: the administrative register for all educational institutions in Hungary. NABC (National Assessment of Basic Competences) is the national standards based assessment, with tests in reading and mathematics in grades 4, 6 and 8. Students with special educational needs do not participate in the assessment, except in year 2006. The school-level data in NABC cover all schools with at least one student who participates in the assessment.

There are two problems: missing schools in the NABC database (and thus missing information on the Roma students) as well as missing information on the Roma students for some schools in the NABC database. We address the first problem by assuming that the missing institutions are one-school institutions and imputing the KIR-STAT student numbers. We address the problem of missing Roma data in three alternative ways. The benchmark imputation is our best guess. We complement this with an imputation that leads to the lowest possible value of the index of segregation and one that leads to the highest possible value.² All of our results are verified using the alternative missing data treatments as well, and those alternative results are summarized in Appendix B.

Following the literature (e.g., Clotfelter, 2004), we measure segregation with the help of the following three indices: exposure of non-Roma students to Roma students (ENR), exposure of Roma students to non-Roma students (ERN), and the standardized version of these indices, referred to herein as the segregation index (S). When we calculate the extent of exposure or segregation, we examine schools within a town. To define and interpret these indices, we apply the following notations.

I_j is the number of schools in town j ,

N_{ij} is the number of students in school i in town j ,

N_j is the number of students in town j ,

R_{ij} is the number of Roma students in school i in town j ,

R_j is the number of Roma students in town j ,

r_{ij} is the fraction of the Roma students among all students in school i in town j ,

r_j is the fraction of the Roma students among all students in town j ,

$(1 - r_{ij})$ is the fraction of the non-Roma students among all students in school i in town j ,

$(1 - r_j)$ is the fraction of the non-Roma students among all students in town j ,

$(N_{ij} - R_{ij}) / (N_j - R_j)$ is the fraction of non-Roma students in school i among all non-Roma students in town j , and

R_{ij} / R_j is the fraction of Roma students in school i among all Roma students in town j .

² The benchmark procedure first imputes the fraction of Roma students from the years with available information and then uses the fraction of poor students in the school as information. The remaining schools (approximately 30 each year) were left as missing. The imputation that leads to the lowest possible value of the index of segregation imputes the town-level average fraction of Roma students for the missing data. The imputation that leads to the highest value of the index of segregation imputes zero or one for the missing fraction of Roma students in a way that maintains the overall fraction of Roma students unchanged (assigning values one to the smaller schools and zero to the larger ones following the observed relationship in the non-missing data).

Index ENR_j measures the exposure of an average (a randomly chosen) non-Roma student in town j to the possibility of meeting Roma students. ENR_j is equal to the fraction of Roma students in each school averaged over schools, where the average is taken with weights that are equal to the share of non-Roma students in the school among all non-Roma students in the town. Formally:

$$ENR_j = \sum_{i=1}^{I_j} r_{ij} \frac{N_{ij} - R_{ij}}{N_j - R_j}, \quad \text{so that} \quad 0 \leq ENR_j \leq r_j$$

The minimum value of the exposure index is zero. In such a case, no contact is possible between Roma and non-Roma students within the schools because the schools are either all-non-Roma (thus $r_{ij}=0$) or all-Roma (thus $N_{ij}-R_{ij}=0$). The maximum value of exposure is when the fraction of minority students in each school is equal to the fraction in the town: $r_{ij}=r_j$ for all i in j . For ENR_j to make sense, we need $0 < r_j < 1$, i.e., there must be both Roma and non-Roma students in town j . This condition is satisfied in all towns that we consider.

The exposure of Roma students to non-Roma students (ERN_j) is analogous as it measures the exposure of an average (randomly chosen) Roma student in town j to the possibility of meeting non-Roma students. ERN_j is equal to the fraction of non-Roma students in each school averaged over schools, where the average is taken with weights that are equal to the share of Roma students in the school among all Roma students in the town. Formally:

$$ERN_j = \sum_{i=1}^{I_j} 1 - r_{ij} \frac{R_{ij}}{R_j}, \quad \text{so that} \quad 0 \leq ERN_j \leq 1 - r_j$$

The minimum value of this exposure index is also zero, and $ERN_j=0$ exactly when $ENR_j=0$. Such a value indicates that no contact is possible among Roma and non-Roma students within the schools because the schools are either all-Roma ($1-r_{ij}=0$) or all-non-Roma ($r_{ij}=0$). The maximum value of Roma exposure is when the fraction of non-Roma students in each school is equal to the fraction of Roma students in the town: $1-r_{ij}=1-r_j$ for all i in j . The two indices are intimately related:

$$ERN_j = \frac{1 - r_j}{r_j} ENR_j$$

Despite their intuitive content, the exposure indices are rarely used. The reason is that their value depends on the overall fraction of minority students, which poses a severe constraint on their use in comparing segregation across time or geographic units. It is the segregation index that is intended to solve this problem. As the index of segregation is a normalized version of the exposure indices, it retains their information content, albeit in a less intuitive way. The normalization amounts to comparing exposure to its attainable maximum. There is also a reversal of sign such that higher levels of the index indicate higher levels of segregation (less exposure). Intuitively, the

segregation index shows the fraction of contact possibilities that are made impossible by segregation. Formally,

$$S_j = \frac{r_j - ENR_j}{r_j} = \frac{1 - r_j - ERN_j}{1 - r_j}, \quad \text{so that } 0 \leq S_j \leq 1$$

The maximum value of the index is one; therefore, segregation is at its maximum when the exposure is zero. The minimum value is zero, which is attained at maximum exposure, when the fraction of Roma students is the same in every school.

To understand the magnitudes, we consider the value of these indices in another context. American metropolitan areas that have segregation indices similar to the segregation indices of the larger Hungarian towns (as we shall show) include San Diego (0.28), Phoenix (0.31) and Los Angeles (0.33). These are not among the most segregated American cities as the segregation index in New York City is 0.45, in Chicago it is 0.57, and in the most segregated metropolitan area, that of Detroit, the segregation index is 0.71 (see Clotfelter, 1999, p. 494).

2.3 MEASURING RESIDENTIAL SEGREGATION

Residential segregation is defined as inequality in the ethnic composition of neighborhoods within towns. The formulae used for measuring segregation are analogous to those used for measuring school segregation, with the number of residents and the fraction of Roma residents in neighborhoods substituted for the number of students and the fraction of Roma students in schools, respectively. In contrast to the ethnic composition of schools, no comprehensive data exist on the ethnic composition of neighborhoods.³

We collected data on the ethnic composition of neighborhoods within the 100 towns of our analysis by asking local experts in each town to estimate the number or fraction of Roma residents in small neighborhoods (electoral wards). In each town, four local experts were asked to review the map of their town and provide estimates of the Roma population. Table 3 identifies the experts we asked and the information we sought from each.

³In principle, the national census data are the best source of information as they cover the entire country and provide figures for very small geographic units, the census tracts. Unfortunately, however, ethnicity is not measured well in the census.

Table 3.

Sources of information for the residential data, units of measurement and conversion to population figures.

	Unit of measurement	Conversion to population figures
Local Roma organization	Number of Roma families	Multiplied by average family size in towns and cities from the Roma Survey of 2003
Director of family support services in the municipality	Number of Roma children	Multiplied by the ratio of population to children, from the Roma Survey of 2003
Chief infant health visitor (travelling nurse who visits families with newborns)	Number of Roma children of age 0 to 3	Multiplied by the ratio of population to 0-3-year-old children from the Roma Survey of 2003
Director of the office of education in the municipality	Number of Roma children in primary schools (grades 1 through 8)	Multiplied by the ratio of population to primary school students (1-8 grades) from the Roma Survey of 2003

Unfortunately, we could collect valid information from all four sources of information from only 38 of the 100 towns (the numbers of valid cases and average answer values are shown in Table 4). Three sources were available in another 30 towns, 25 towns provided information from two sources, and six towns from only one source. The estimated share of the Roma population, overall, is very similar from the four different sources of information when all four are available (see the last columns in the table). This validates both the individual sources (on average) and our method of converting their estimates to population shares using outside data sources. At the same time, when all available information is used for the various sources, the Roma organizations and the educational offices provide significantly higher figures (the first columns in the table). Together with the previous results, this suggests that the share of the Roma population is most likely higher than average in the towns where values are missing from the other two sources (i.e., from the health visitors and the family support services).

Table 4.

Estimated share of Roma population in the towns based on the four sources of information

	All non-missing information by source		Restricted to the towns with non-missing information from all four sources	
	Mean share of Roma population	Number of towns	Mean share of Roma population	Number of towns
Local Roma organization	0.12	83	0.09	38
Director of family support services in the municipality	0.08	74	0.08	38
Chief health visitor (travelling nurse who visits families with newborns)	0.08	76	0.08	38
Director of the office of education in the municipality	0.10	65	0.08	38

Where information is available, all four measures provide useful data. Correlations between the shares of the Roma population across information sources are moderate, ranging from 0.48 to 0.84, according to Table 5. This suggests that one must combine all the information.

Table 5.

Pairwise correlation of the estimated share of the Roma population in election wards by the four sources of information

	Local Roma organization	Family support services	Infant health visitors	Education office
Local Roma organization	1.000			
Family support services	0.483	1.000		
Infant health visitors	0.540	0.712	1.000	
Education office	0.394	0.837	0.550	1.000

To maximize the information content in the estimates and minimize their noise content, we took the average population figure for each election from all information that was available. For further checks, we compared these estimates to corresponding figures calculated from the national census of 2001. We obtained census track-level information on the Roma population from the census of 2001. The census Roma data are very imperfect and strongly downward biased as the estimated share of the Roma population is below 2 per cent compared to corresponding estimates of

approximately 6 per cent using other, more reliable data sources (Kemény and Janky, 2006). As census tracks are smaller units than election wards, we aggregated the census-track level data.⁴ Consistent with the assumption that they are lower estimates, we use the census figures to identify election wards where our estimates of the Roma population were too small and were below the census numbers. In case of such conflicts, we replaced our estimates with the census figures.

2.4 MEASURING THE INTEGRATIONIST/SEGREGATIONIST TENDENCIES OF LOCAL EDUCATIONAL POLICIES

Information on educational policies was collected from the director of educational services in each municipality. During the interview, the respondent complemented preloaded school-level information and answered a questionnaire on policy measures and events in the town during the past 5 years. The interviewer collected all of the relevant documents from the municipality to back up oral information with official written documents.

The questionnaire followed the logic of the policy instrument measures that had been designed to characterize local educational policies. In addition to the policy instrument measures, the questionnaire provided information for a variable that measures the general attitudes of the administration with respect to equal opportunities in the school (discussed herein in this section). The detailed definition of the policy instruments is contained in Appendix C, in the form of decision trees that code the information into relevant variables. The questionnaire itself can be found in Appendix E. Each policy instrument variable measures whether the municipality of the town used the instrument in the past five years and its reasons for using the instrument.

Policy instruments are defined as measures that the educational administration of the municipality can take, and which measures can have a direct impact on the ethnic composition of schools in town. To facilitate the statistical analysis, for each instrument, we created a variable that can take on three values, 0, 1, and -1. These numbers denote whether the instrument was used, and if yes, whether its usage had the intended direction of increasing or decreasing school segregation. Value 0 was assigned if the instrument was not used, or if by using it, the administration did not interfere with spontaneous tendencies in the town. In other words, value zero was assigned to an instrument in a town where the administration did not actively use that instrument to increase or decrease school segregation. We assigned value 1 if the administration in the town used the instrument in a way that, in principle, should have *increased* between-school segregation. Analogously, we assigned value -1 if the administration in the town used the instrument in a way

⁴In some cases, census tracks belonged to multiple election wards, and we assigned them to the election ward to which the largest part of them belonged – data limitations prevented us from splitting them across wards.

that, in principle, should have *decreased* between-school segregation. Importantly, it is not the actual effect that determined whether we coded each instrument as -1, 0 or 1. Instead, the value was determined a priori, based on whether the mechanism induced by the instrument (or the way the instrument was implemented) could increase or decrease between-school segregation in the institutional context of Hungarian education. When the administration used a particular instrument more than once, we coded each occurrence separately and calculated the average.

Table 6 provides an overall account of our policy instruments including distributions of towns with respect to the use of different local educational policy instruments. In the event of the multiple use of an instrument in a town, average values were calculated. A value of 0 for each instrument represents a passive attitude on the part of the municipality; positive values denote active steps that point to increased ethnic inequality, and negative values denote active steps towards decreasing inequality. Some of the instruments capture the failure of the municipalities to take administrative steps that they are legally required to take. These failures were coded as active segregationist steps.

Four of the ten instruments show no particular tendencies on average, another four show mild segregationist tendencies on average, and two are strongly segregationist. Starting with the strongest, most municipalities fail to maintain the representation of Roma students in mostly non-Roma schools (whether municipal or non-municipal schools). Quite a few municipalities let their higher status (“elite”) schools practice admission policies that are segregationist, and many allow segregated Roma schools to exist. Some but not many municipalities use school mergers and modifications of school district boundaries to increase inequalities between schools.

In principle, the policy instruments may be used as substitutes, as complements, or as independent from each other. They are substitutes if municipalities use one instrument instead of the other to achieve their goals (or simply to comply with or meet the forces within the system). The instruments are complements if using one reinforces the effects of another one, and thus, using two together is more effective than the sum of using either. It turns out that there are no clear patterns in the usage of instruments that would indicate systematic relationships between or among them. As shown in Table 7, the individual policy instruments are very weakly correlated with each other. Of the 43 correlation coefficients, only 4 are significant, and even those are weak. Most importantly, we see no significant negative correlations that would indicate the use of one to occur systematically when another policy is avoided. The lack of correlations, and negative correlations in particular, implies a very straightforward aggregation procedure. That is, we simply average the values of the 10 instruments and compose a one-dimensional policy index.

Table 6.

Local educational policy instruments (P): Their content and distribution across towns

Policy Instruments	Number of towns with instrument values					N. of valid cases (towns)	Mean values	Std. Deviations
	-1	-1 to 0	0	0 to 1	1			
P1. Closing of schools	4	1	76	0	6	87	0.02	0.34
P2. Merger of schools	0	0	71	9	6	86	0.12	0.28
P3. Reducing the number of school districts on a large scale	0	0	89	0	11	100	0.11	0.31
P4. Merging school districts or modifying school catchment area boundaries	15	1	72	0	10	98	-0.06	0.51
P5. Changing the school provider: transforming municipal schools into parochial or not for profit private schools	0	0	93	0	1	94	0.01	0.10
P6. Admission policies of municipal elite schools	1	0	68	3	25	97	0.26	0.46
P7. Ensuring proper representation of Roma students in municipal schools where the proportion of Roma students is low	4	1	33	8	54	100	0.52	0.57
P8. Supporting the establishment of new parochial or not for profit private schools	0	0	91	0	8	99	0.08	0.27
P9. Intervention against segregation targeting non-municipal schools (to meet Roma proportion benchmarks)	7	0	26	1	48	91	0.57	0.63
P10. Policies towards segregated Roma schools	6	1	51	4	32	94	0.29	0.58

Notes. The values of each instrument are coded as follows:
v = 0 non-activist position (or the instrument is not used);
v =1 segregationist attitude / behavior;
v = -1 integrationist attitude / behavior

Table 7.

Correlation matrix of the Local Educational Policy Instruments I1 through I10

	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
I1	1.000									
I2	0.053	1.000								
I3	0.082	0.066	1.000							
I4	0.006	0.146	0.038	1.000						
I5	-0.010	-0.048	-0.036	0.223*	1.000					
I6	-0.111	-0.172	-0.205	-0.098	0.173	1.000				
I7	0.130	0.038	-0.005	-0.118	-0.098	0.044	1.000			
I8	-0.019	0.211	0.013	0.107	0.365**	-0.002	0.051	1.000		
I9	-0.079	0.064	-0.087	-0.090	0.076	0.054	-0.008	0.146	1.000	
I10	0.035	0.108	-0.016	-0.054	n.a.	-0.025	0.063	0.043	-0.064	1.000

* Significant at the 5 per cent level. ** Significant at the 1 per cent level.

In addition to policy instruments, we collected information on administrative measures that do not have a direct effect on the composition of schools, but rather reflect the general attitudes of the administration with respect to equal opportunities in the schools. Table 8 provides an overall account of these attitude instruments and their statistics. The detailed definitions are contained in Appendix D.

Three out of the five measures point to more segregationist attitudes on average, while two measures are, on average, neutral. Municipalities from the 100 towns in the sample are slightly more likely to classify students into “home schooling” status, and they have a slight tendency to restrict kindergarten access in a selective way, against poor children, in the event of capacity constraints. A stronger tendency is observed in neglecting the problem of the registration of students with “multiple disadvantages”. The remaining two measures are balanced, and these include classifying students into the special educational need (SEN) status and encouraging/discouraging Roma children to participate in kindergarten education.

Table 8.

General educational policy attitudes (A): Their content and distribution across towns

Attitude instruments	Number of towns with instrument values			N. of valid cases (towns)	Mean values	Std. Deviations
	-1	0	1			
A1. Restricting the practice of exceedingly classifying students into SEN status	4	76	6	87	0.02	0.34
A2. Classifying students into “home-schooled” status	0	71	6	86	0.12	0.28
A3. Preventing poor children from being crowded-out of kindergarten in case of lack of facilities	0	89	11	100	0.11	0.31
A4 .Encouraging participation of Roma children in kindergartens	15	72	10	98	-0.06	0.51
A5. Neglecting the problem of registration of students with “multiple disadvantages”	6	51	32	94	0.29	0.58

Notes. The values of each instrument are coded as follows:

v = 0 for neutral position;

v =1 for neglecting equal opportunities;

v = -1 for enhancing equal opportunities.

3. LEVEL AND TRENDS IN SCHOOL SEGREGATION

We measure the ethnic composition of primary schools and segregation between schools using data from the Hungarian National Assessment of Basic Competences (NABC) for the years of 2006 through 2010. Primary schools in Hungary include students in grade 1 through grade 8. Section 2.1 described the data in more detail. Table 9 shows the ethnic composition of primary schools and the measures of ethnic segregation within the 100 towns. The table shows weighted averages where the weights are the size of the student population in each town.

The fraction of Roma students in the 100 towns averages 11 per cent, and this statistic is stable across the five years in the sample. The exposure of non-Roma students to Roma students averages 8 per cent throughout the period. The average exposure of Roma students to non-Roma students has increased from 69 per cent in 2006 to 73 per cent in 2010. The index of segregation, measuring the distance from actual exposure to its theoretical maximum, decreased from 0.23 to 0.19. Virtually all of the decreases in segregation occurred between 2006 and 2008. Note, however, that as we indicated in section 2.2 above, missing data on the ethnic composition of schools can be handled in various ways. Our benchmark imputation, used for the calculations presented in Table 9,

represent our best estimates for the missing information. Alternative imputations may (and, as we shall see, do) result in numbers that can be very different.

Table 9.

Ethnic composition and ethnic segregation of primary schools in 100 Hungarian towns, 2006 through 2010. The fraction of Roma students, the indices of exposure and the index of segregation.

Average values	2006	2007	2008	2009	2010	Change between 2006 and 2010
Fraction of Roma students	0.11	0.11	0.11	0.11	0.11	0.00
Exposure of non-Roma students to Roma students	0.08	0.08	0.09	0.08	0.08	0.00
Exposure of Roma students to non-Roma students	0.69	0.70	0.73	0.73	0.73	0.04
Index of segregation	0.23	0.22	0.19	0.19	0.19	-0.04

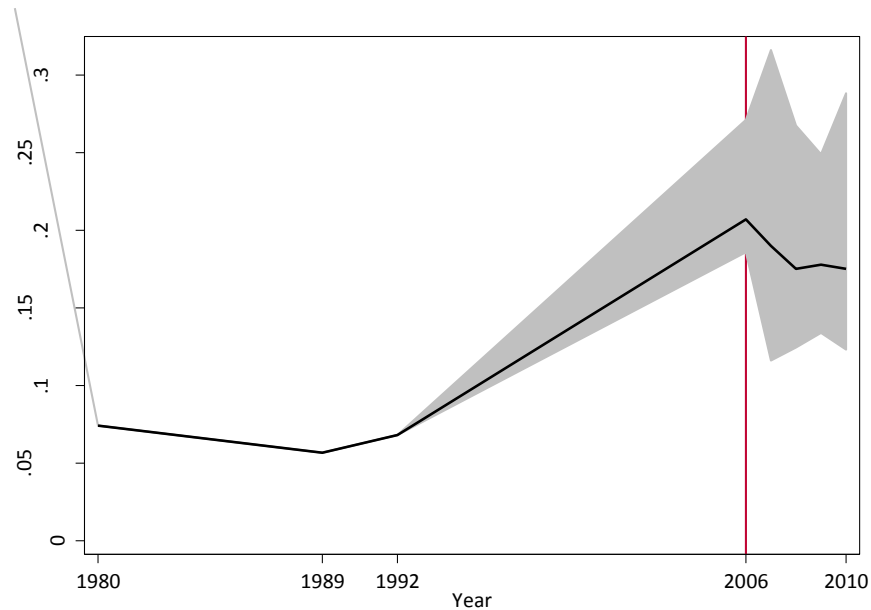
Notes. Average values using the benchmark imputation weighted by student population.

Figure 2 puts the observed changes in historical context and shows bounds for four calculations using alternative imputations for the missing data in 2006 to 2010. The figure shows the time series of the index of segregation from 1980 through 2010 averaged over the 100 towns in the sample. We accessed administrative school data (the predecessor of KIR-STAT) for 1980, 1989 and 1992, and all files contained information on the number of Roma students in each school.⁵ Beginning with 2006, the average segregation index is based on our benchmark imputations. The figure indicates the range of the maximum and minimum potential values by a grey area. Strictly speaking, the index of segregation can be anywhere within this area. However, our best estimate is the continuous black line.

⁵ During these years (1980, 1989, 1992), there were no multiple-school institutions, and every school provided data on the number of Roma students. The collection of data on Roma students was discontinued after the school year of 1992/3.

Figure 2.

**The time series of the ethnic segregation index
between primary schools.
Average index of 100 Hungarian towns,
1980 through 2010.**



Black line: our benchmark imputations for missing data.
Grey area: theoretical lower and upper bounds using alternative imputations.

The ethnic segregation of the primary schools in the 100 towns in our study increased substantially between 1992 and 2006. This increase is significantly large in magnitude and is also robust with respect to the imputation method we choose for missing data in 2006. As previously documented, our best estimate for the index shows a significant decline of between-school segregation in the 100 towns between 2006 and 2008. The slope of the decreasing trend is comparable to the slope of the previous increase, thus resulting in a small drop because of the short period. However, in contrast to the previous increase, the decrease is not at all robust to the imputation method. As presented in

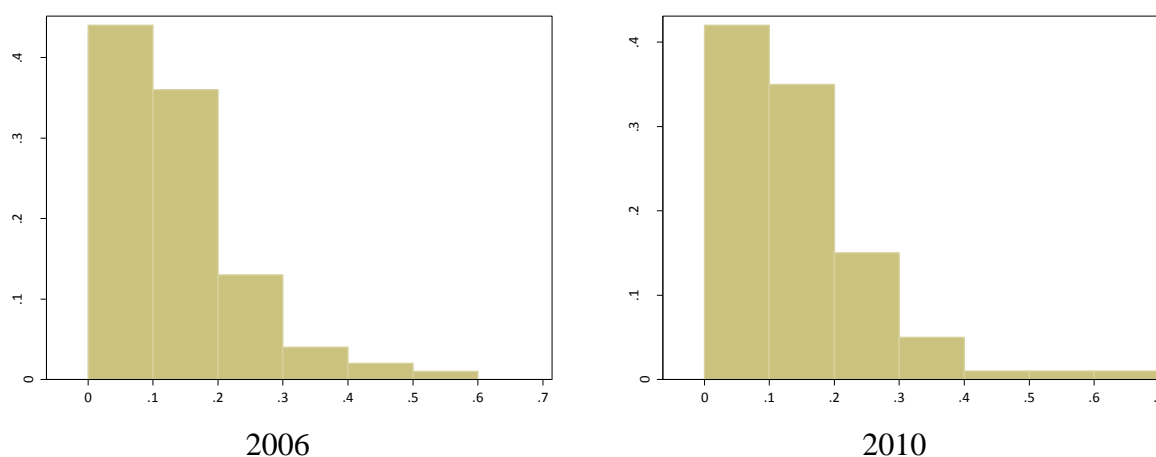
Table, our best estimates indicate a slight increase in between-school segregation after 2008, though this trend is not robust to the imputation method. The grey area in Figure 2 suggests that while our best estimate for the index of segregation in 2006 is 0.21, it could, in principle, range between 0.19 and 0.27. By 2008, our best estimate puts the index at 0.17, but this could, in principle, range anywhere from 0.12 and 0.27. Obviously, changes of different directions and

magnitudes are possible between the points of these two intervals. The missing information in the NABC database prevents us from identifying trends after 2006.⁶

The averages hide wide dispersions. In 2010, the fraction of Roma students in the 100 towns varied from as low as 2 per cent to as high as 63 per cent. However, between 2006 and 2010, not only has the mean but the distribution across the 100 towns has also remained stable (the histograms are shown in Figure 3). This is not surprising, however, as the five year sample period is a short time for any substantial changes to occur in the fraction of Roma students.

Figure 3.

The distribution of the fraction of Roma students across 100 Hungarian towns. 2006 and 2010.



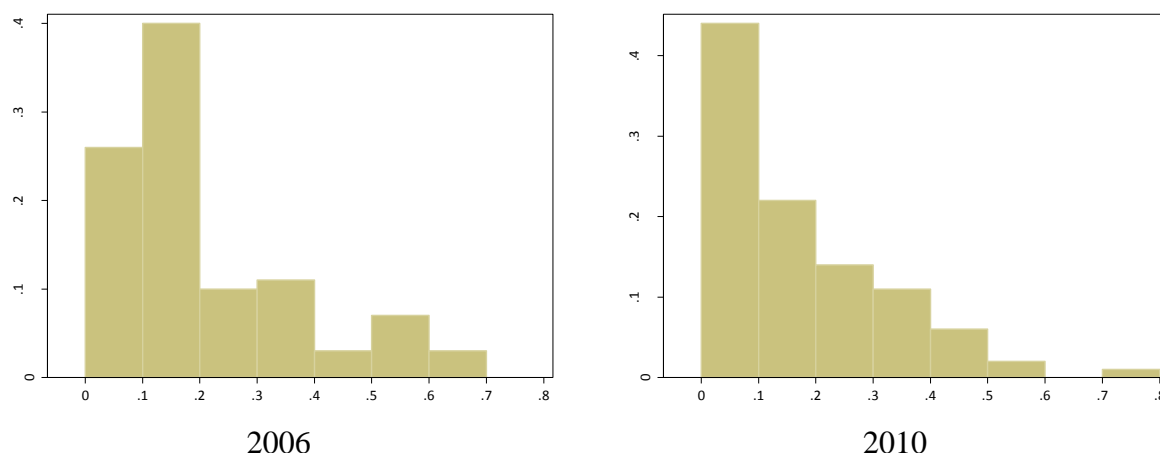
The index of segregation is even more dispersed. In 2010, it varied between 0 and 0.72 (according to our benchmark imputations). Contrary to the overall fraction of Roma students in the towns, the distribution of the index of segregation has changed between 2006 and 2010 (the histograms are shown in Figure 4). The share of towns with index value less than 10 per cent increased from 26 per cent to over 40 per cent. The share of towns between 10 and 20 per cent decreased from 40 per cent to 20 per cent. Similar changes are observed at the right tail of the distribution: the mass of the distribution shifted to the left a little bit (except for the one outlier in 2010). Similarly to the average changes, these particular shifts in the distribution are not robust to

⁶ In a recently published paper (Kertesi and Kézdi, 2012), we used data on the ethnic composition of all Hungarian schools to document the degree of between-school segregation at the national level. That analysis considered school segregation within school catchment areas, which were defined as clusters of villages, towns and cities that were closed in terms of student commuting. Typically, the 100 towns analyzed in this study are parts of school catchment areas that include the towns as well as some of the surrounding villages. The trends of school segregation within catchment areas around towns and cities are very similar to the trends within the towns shown we document in this study.

the treatment of the missing data. However, they indicate that between-school segregation may have decreased significantly in some of the towns.

Figure 4.

The distribution of the index of ethnic segregation across 100 Hungarian towns, 2006 and 2010. Benchmark imputations.



4. RESIDENTIAL SEGREGATION AND STUDENT MOBILITY

Without school choice, residential segregation and the boundaries of school catchment areas would determine school segregation. However, school choice can alter the picture in significant ways. In principle, school choice could lead to lower levels of segregation if minority students could commute to schools in neighborhoods dominated by majority students. With all likelihood, however, incentives and information structures in the Hungarian school system work the other way around. Majority students tend to commute more, thus leaving students from the disadvantaged minority cluster in schools even more than what residential segregation and area boundaries would imply. There may also be “tipping points” in the fraction of minority students in schools above which “white flight” may occur, leading to an ever increasing fraction of minority students being left behind.

Using the estimates of the share of the Roma population in election wards (see the data section) and the overall population, we constructed the residential segregation index in a way that is analogous to the school segregation index. Figure 5 shows the histogram (empirical density function) of the residential segregation index (which we denote by L) in the 100 towns of our analysis. The mean of the index across towns is 0.17, and the standard deviation is 0.16 (figures

weighted by population are essentially the same). The lowest residential segregation index is 0, the highest is 0.63, and the median is 0.11.

Figure 5.

**Distribution of the residential segregation index (L)
across 100 Hungarian towns in Hungary**

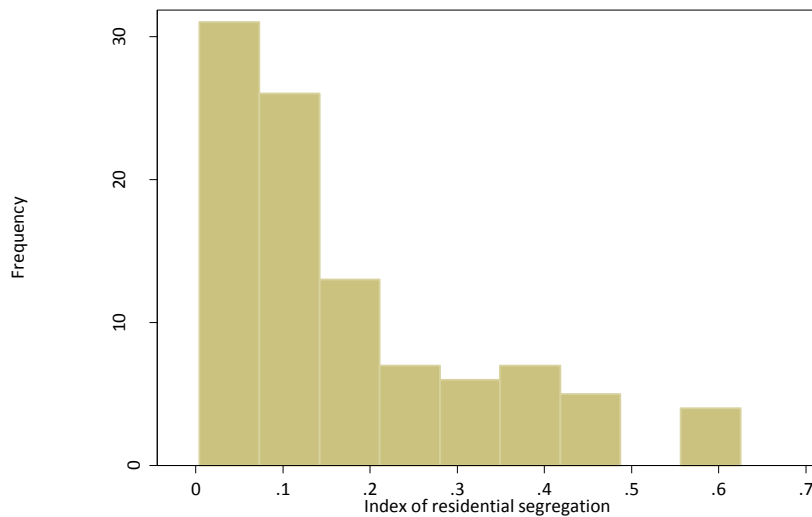
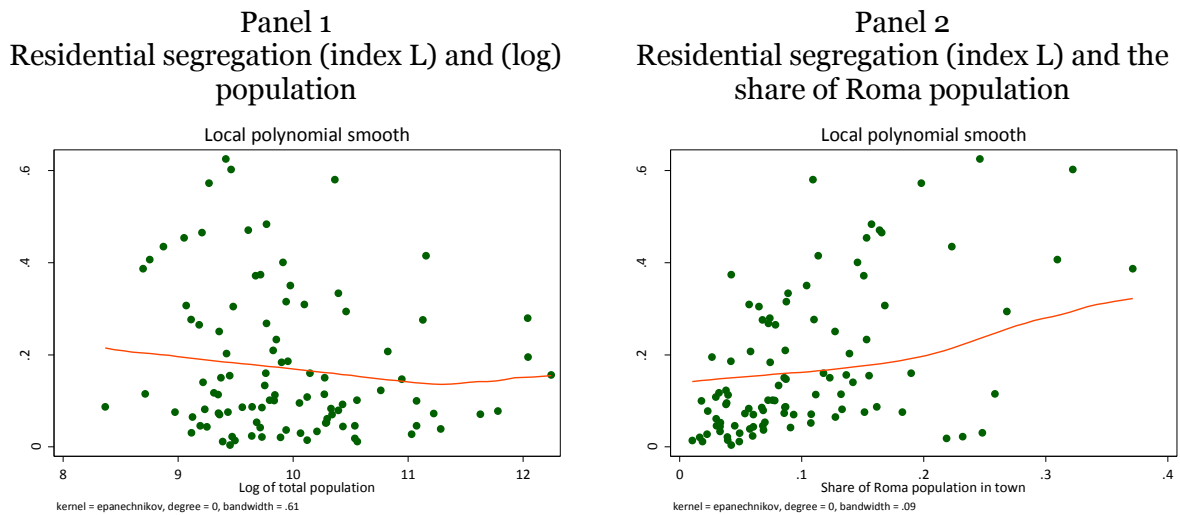


Figure 6 shows the relationship of residential segregation denoted by index L, on the one hand, and town size measured by the (log of) total population and the share of Roma population, on the other hand. The figure suggests that the relationship between residential segregation and town size is weakly negative in terms of the mean and that the heterogeneity of towns in terms of their residential segregation also decreases with size. The opposite is true for the relationship between residential segregation and the share of the Roma population. A larger share of the Roma population is associated with slightly higher levels of residential segregation. Importantly, however, these relationships are all very weak. Towns differ in terms of their residential segregation because of factors that are unaccounted for by conventional measures of size and ethnic composition.

Figure 6.

Residential segregation (index L), population and the share of the Roma population across 100 Hungarian towns in Hungary

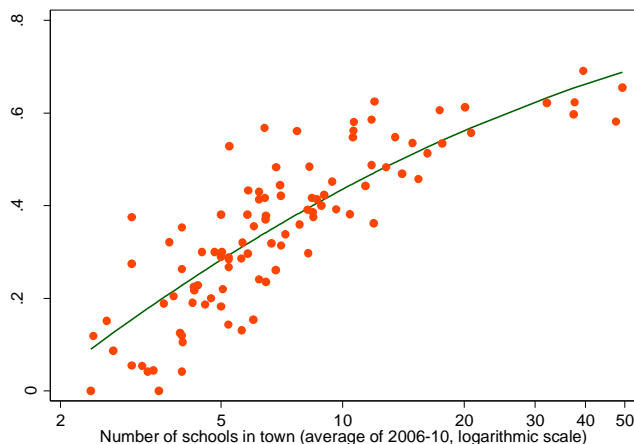


The role of residential segregation in school segregation can be modified by commuting. Commuting to schools that are not the closest to the student's residence is a key feature of the Hungarian primary school system because of school choice. Commuting is socially selective. Student background data from the National Assessment of Basic Competences (NABC) show substantial differences in the social status of commuters. In the population of 8th grade students in the 100 towns in 2009, less than 25 per cent of the lower status students (mother's education is 8 grades or less) commuted to a school outside their own school catchment area. The same figure for higher status students (mother's education is 12 grades or more) is 50 per cent. Mobile students are looking for "better" schools than the school in their own district, which may mean either better teachers and facilities or "better" (higher status or higher ability) schoolmates.

There is a clear and strong positive association between the number of schools in a town and the mobility of higher-status children to schools outside the catchment area of their residence. Figure 7 shows the scatter plot. The association is strongly positive, and it is close to linear in the log of the number of schools. This implies a positive but concave relationship in terms of the number of schools in the town. The magnitude of the association is very strong. In towns with only a few schools, less than 20 per cent of middle-class students commute to schools that are not the closest to their residence. In towns with 10 schools, this fraction is over 40 per cent. In towns with 40 schools, the fraction is approximately 60 per cent.

Figure 7.

Student mobility and the size of the educational market

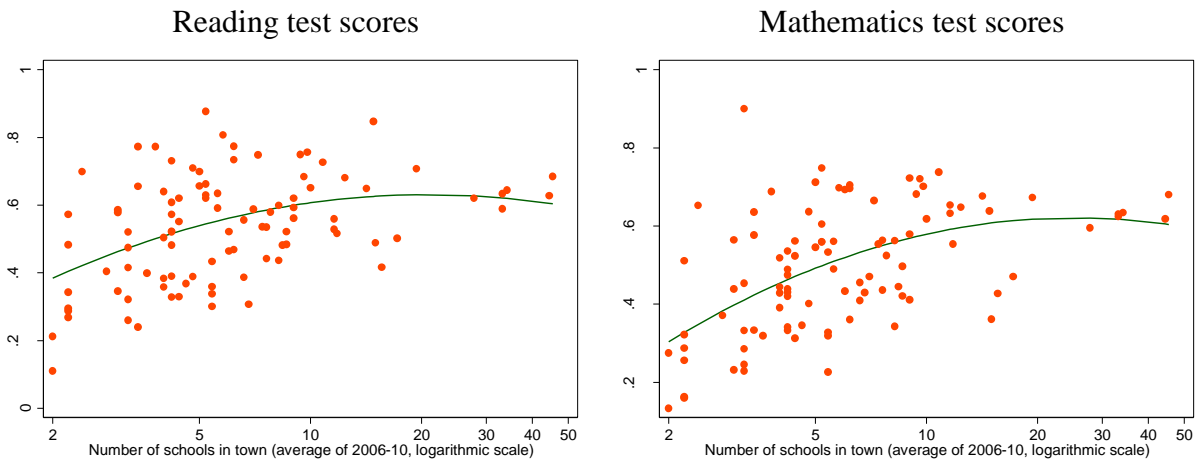


The fraction of high status students (mother's education: general secondary or diploma) attending a school that is not in the school catchment area of their residence (vertical axis) and the number of schools in the town (horizontal axis; average between 2006 and 2010, logarithmic scale)

In towns with larger educational markets, the number of schools is greater, and thus there is more room for diversity and, in turn, more room for hierarchical sorting as well. Figure 8 shows that larger educational markets are, indeed, characterized by more diverse schools. The figure shows the association between the number of schools within the town and the heterogeneity of schools in the town in terms of test scores. This heterogeneity is measured by the between-school standard deviation of the school-level average test scores measured in 8th grade, and both this standard deviation and the number of schools in the town are averaged across the years of the investigation (2006 through 2010).

Figure 8.

Between-school heterogeneity and the size of the educational market.



Standard deviation of school-level average test scores in 8th grade within each town (vertical axis) and the number of schools in the town (horizontal axis; average between 2006 and 2010, logarithmic scale)

Figure 8 shows a positive association between the size of the educational market and the heterogeneity schools. The association is stronger for the mathematics test scores, and it is concave in the number of schools (the concavity is strong as the relationship is log-concave and seems to level out above 20 schools).

Taken together, the evidence shown in Figures 7 and 8 clearly supports the sorting argument. The argument is as follows. If there is a clear hierarchy across the schools in terms of their perceived quality, children with better prior skill signals (kindergarten results, admission test results or social status signals) will strive to gain admittance into the top segment of the school hierarchy. Worse signals mean weaker chances to be enrolled into the top schools. Schools in the bottom rank are filled with children with the worst signals. The process is regulated by the commuting behavior of high status children during the kindergarten-school transition (enrollment into grade 1), and, in larger cities, also after 4th or 6th grade when students can transfer to the most prestigious high schools (gymnasiums) that admit students into grade 5 or grade 7, as well as the modal admission of grade 9.

5. SCHOOL SEGREGATION, RESIDENTIAL SEGREGATION AND POLICIES: REGRESSION ANALYSIS

In this section, we create an overall picture to better reveal and understand the mechanisms that lead to higher or lower levels of between-school segregation of Roma students in Hungarian towns. We estimate a statistical model that is structural in the sense that it separates the mechanisms in ways that are guided by theory. It is a system of linear regressions that is not structural in the strict econometric sense as we do not claim exogenous variation in our explanatory variables. Instead, our estimates present associations (conditional on other explanatory variables) that may or may not support the presence of the structural theoretical mechanisms in our data.

As documented herein, there is substantial heterogeneity in the degree of segregation across the 100 towns in our analysis. The index of segregation varies from zero to 75 per cent, with a mean of 15 per cent and a standard deviation of 16 percent. Theoretical considerations suggest four mechanisms that may explain such heterogeneity. When we describe the mechanisms, we indicate variable names that will be used in the regression models.

First, ethnic school segregation (S) is expected to be large when ethnic residential segregation (L) is high. In this case, Roma and non-Roma students filling nearby schools exclusively, leave little room for mixing.

Under the regime of free school choice, school segregation can be high even in the case of low residential segregation if students commute between school districts. High levels of commuting among higher status students (M for mobility) can result in the unequal ethnic composition of schools. Whereas only a quarter of the lower status students are mobile in this respect, 50 per cent of the higher status students are enrolled in schools outside the catchment area of their residence. As mobile students are usually seeking better schools than those in their own district, the increased number of higher status students may suggest that the schools offer either better teachers and facilities or better classmates with respect to their status and academic abilities.

Third, local educational policies (P) practiced over a longer period (through instruments that can directly affect the sorting or mixing of students in the local school system) can also impact school segregation outcomes.

Fourth, sorting and the small size of most of our towns are likely to induce a positive correlation between the share of Roma students in town (R) and segregation. In small towns with few Roma students, even if all Roma students end up in the same school, they will have non-Roma peers; thus

they are not completely segregated. Conversely, in small towns with many Roma students, sorting may lead to stronger segregation as the number of Roma students can support an all-Roma school.

The regression implied by these mechanisms assumes the following form (where, as before, index j denotes the towns):

$$S_j = \beta_0 + \beta_1 L_j + \beta_2 M_j + \beta_4 P_j + \beta_5 R_j + u_j$$

Taking one step back in the causal chain, we have three auxiliary equations, all of which represent one of the following important transmission mechanisms: (i) the determination of the mobility of high status students, (ii) the determination of the local educational policy instruments that can directly affect segregation outcomes, or (iii) the determination of the residential segregation. Accordingly, the three regressions assume the following forms:

$$M_j = \gamma_0 + \gamma_1 \log I_j + \gamma_2 L_j + \gamma_3 P_j + v_j$$

$$P_j = \pi_0 + \pi_1 L_j + \pi_2 R_j + \pi_3 A_j + w_j$$

$$L_j = \lambda_0 + \lambda_1 R_j + \lambda_2 \log N_j + \omega_j$$

Table 10 shows the summary statistics of the variables used in the model. Because the regressions are run without weights, summary statistics are computed without weights, too. The unweighted average of the segregation index is lower than the weighted average because smaller towns are, on average, less segregated. The unweighted average fraction of Roma students is, on the other hand, higher than the weighted average because smaller towns have a higher proportion of Roma students.

Table 11 shows the regression estimates of the coefficients in the equation for between-school segregation (S). The table lists the right-hand side variables, the estimated coefficients (β_0 through β_5 plus an additional coefficient for A_j to show that that one is zero), the standard errors, the corresponding t-statistics and the p-values of the tests of $H_0: \beta_k=0$. The standard error estimates are consistent under heteroskedasticity.

Table 10.

Summary statistics of the variables in the regression model (unweighted means and standard deviations; number of observations = 99)

Variable	Description	Mean	Std. dev.
S	Between-school segregation index (source: NABC, 2010)	0.14	0.14
L	Residential segregation index (source: 100 towns survey, 2011 and 2001 census)	0.17	0.16
M	Percentage of high status (mother's education = general secondary or diploma) attending a school not in their own school district (source: NABC, mean value of the 2006 to 2010 years)	0.34	0.17
P	Local Educational Policy Index (source: 100 towns survey, 2011)	0.19	0.15
R	Percentage of Roma students in the primary grades (1 to 8) (source: NABC, 2010)	0.14	0.11
I	Number of schools in the town (NABC, 2010)	8	8
log(I)	logarithm of I	1.85	0.68
N	Population in the town (in thousands; source: TSTAR, 2010)	2,534	2,764
log(N)	logarithm of N	7.51	0.73
A	General Educational Policy Attitude Index (source: 100 towns survey, 2011)	0.27	0.25

The last column of the table shows the standardized Beta coefficients that correspond to associations measured in standard deviation units. These standardized coefficients are easier to interpret than the original regression coefficients because the dependent variable (S) and most of the right-hand side variables have no natural unit of measurement. For example, consider the standardized coefficient of the policy index P, which shows that towns with a one standard deviation higher value for the policy index P are characterized by a between-school segregation index that is 0.16 higher on average (all other factors being equal).

Table 11.

Results of the main regression model. Dependent variable: S (index of the between-school segregation); number of observations: 99. R²=0.28

	Coefficient	Standard error	Beta-coefficient
L = residential segregation	0.10	0.12	0.11
M = mobility	0.27	0.08**	0.31
P = educational policy index	0.16	0.07*	0.17
R= proportion of Roma students in the town	0.67	0.12**	0.52
Constant	-0.09	0.04	

Standard errors are robust to heteroskedasticity.

* Significant at the 5 per cent level. ** Significant at the 1 per cent level.

“Beta” coefficients are standardized regression coefficients

The results are strong, especially when we consider the size of the sample and the fact that our dependent variable and most of our right-hand side variables are measured with considerable noise. The association between school segregation and residential segregation (L) is weak. Our point estimate reveals a modest correlation, but it is imprecise, and thus, it is not statistically significant. At the same time, the association between school segregation and inter-district student mobility (M) is strong and highly statistically significant. According to the standardized coefficients, primary schools in towns that are characterized by a higher standard deviation with respect to the inter-district mobility of middle-class students tends to be more segregated by approximately one-third of a standard deviation with respect to the segregation index. Local educational policies (P) play a smaller though non-negligible role. Policies that are expected to enforce segregation do, indeed, lead to higher levels of between-school segregation, though the association is weaker than that with mobility. That is, towns that are characterized by a one standard deviation or more with respect to more segregationist local policies are also characterized by one-sixth of a standard deviation higher level of segregation. The strongest association, however, is estimated between segregation and the proportion of Roma students in the town (R), with a standardized coefficient of 0.52.

The estimates of the auxiliary regressions are displayed in Table 12. These estimates uncover associations between mobility and policies as well as other right hand-side variables. We also looked for associations with residential segregation. The structure of these tables is the same as structure of the previous table.

Table 12.

Results of the auxiliary regression models. Number of observations: 99.

	Dep. var.: M			Dep. var.: P			Dep. var.: L		
	Coeff.	S.E.	Beta	Coeff.	S.E.	Beta	Coeff.	S.E.	Beta
L	-0.09	0.06	-0.09	0.19	0.09*	0.20			
P	0.04	0.07	0.03						
logI	0.20	0.02**	0.79						
R				-0.10	0.16	-0.07	0.65	0.16**	0.47
A				0.13	0.06*	0.22			
Log(N)							0.02	0.02	0.10
Constant	-0.01	0.03		0.14	0.03**		-0.08	0.14	

Standard errors are robust to heteroskedasticity.

* Significant at the 5 per cent level. ** Significant at the 1 per cent level.

Beta coefficients are standardized regression coefficients

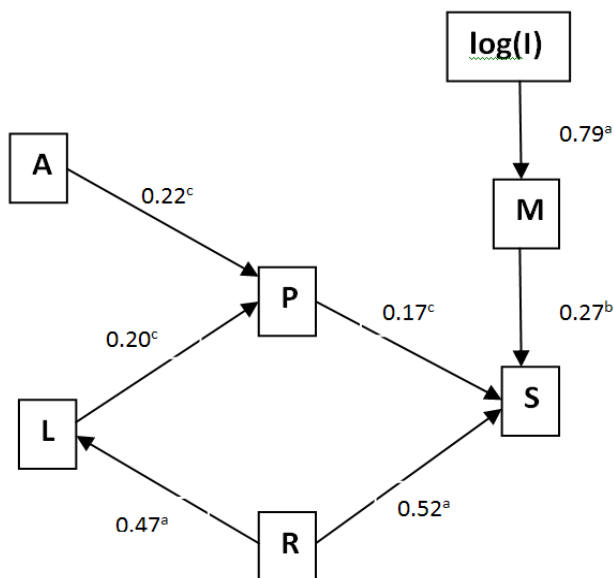
To see the estimates together, Figure 9 shows a path graph of the regression results with the estimated standardized coefficients. Pointed links on the graph represent statistically significant regression coefficients from the right-hand side variables to left-hand side variables, conditional on the other right-hand side variables. Relationships that are not significant are not included in the graph.

Figure 9.

Results of the regression models

(beta coefficients from Table 12 and Table 13)

(^a significant at 0.001, ^b significant at 0.01, ^c significant at 0.05. Insignificant coefficients (paths) are not depicted)



We summarize the most important results in the following way. Ethnic segregation of primary schools in Hungarian towns and cities is strongly related to the inter-district mobility of higher status students and local education policies, as well as the proportion of the Roma population. Interestingly, residential segregation has no direct impact on the level of school segregation, presumably because inter-district mobility makes actual residence less important under the regime of free school choice (and because commuting costs in the towns under analysis are rather minimal).

Inter-district mobility is strongly related to the (log) number of schools. This relationship provides evidence of the effect of the size of the educational market on skill-based sorting. According to evidence documented by Figure 8, an important reason for that effect may be the fact that larger educational markets are associated with greater levels of heterogeneity of schools.

Local educational policies, as measured by index P , are related to the broad policy context (as measured by attitude variable A). That is, the more anti-poor the attitudes, the more segregationist the measures taken by the local educational administration. Somewhat surprisingly, the educational policy index is not directly related to the proportion of the Roma population in the town, but rather, it is related to the degree of the ethnic residential segregation. It seems, therefore, that educational policy is more segregationist when the Roma population is concentrated in segregated areas of the town, and accordingly, residential segregation of the Roma population is greater if the Roma population is relatively large in the town.

These results are all consistent with our theoretical model for the causes of ethnic segregation among Hungarians schools. We outlined the model in section 1 in more detail, and according to our argument, the ethnic composition of schools within a town are different primarily because of the sorting of students into schools by skills and by broader family background factors. The primary school system in Hungary is characterized by free choice, and the commuting costs in most of the towns in our analysis are low. Students and their families choose the “best” school in terms of prestige and social composition of peers, while school admissions are a result of rationing. The primary mechanism behind sorting is commuting or, in other words, the inter-district mobility of students. As a result, the role of residential segregation, which could be the strongest source without school choice, is greatly diminished by this mechanism. The structural regressions results clearly support these implications: inter-district mobility is strongly associated with ethnic segregation, while residential segregation is, at most, weakly related. The strongest driving force behind inter-district mobility is the size of the educational market, which supports our theory of sorting by perceived quality and differentiation of schools.

Local educational policies can modify the degree of school segregation, and we show a great deal of heterogeneity in local educational policies. The sources of that heterogeneity are difficult to identify, but our indicators of the broader policy context capture some of those sources. Interestingly, residential segregation is associated with educational policies, which may be related to more general social norms and attitudes within towns, though this association is speculative. We find that the proportion of the Roma population in the town is not associated with the segregationist tendencies of local educational policies. This fact supports the argument that the primary source of school segregation may not be the direct avoidance of Roma students by non-Roma families but rather a sorting by perceived school quality and perceived abilities that is made possible by school choice and low commuting costs. If this is true, the Roma become the victims of the system in an indirect way.

Our results identify one more important factor that shapes between-school segregation: the proportion of the Roma population in the town. Our sorting model implies the existence of such a relationship because the number of Roma students in a typical town is less than the capacity of a single school. Accordingly, there is an inevitable mixing of Roma and non-Roma students even if all Roma students were to attend the same school. However, the magnitude of the estimated relationship appears to be too strong to be caused by such a simple mechanism. In fact, the strong positive association is likely to reflect mechanisms that are beyond color-blind sorting. In particular, ethnicity may be used as a strong signal of student quality in towns that have a higher proportion of Roma students. Such a mechanism would introduce a direct ethnic aspect into the sorting phenomenon described above, and it can further reinforce the social stigma attributed to Roma students. However, the data requirements for disentangling these effects are beyond the scope of our analysis.

Our data and analysis provide strong support for the significant role of inter-district student mobility as a major factor contributing to school segregation, while the role of residential segregation is weak presumably because of that mobility. We also found that local educational policies have a limited but non-negligible role in shaping between-school segregation in Hungarian towns.

6. CONCLUSIONS

The findings of our research are centered on the role and the impact of residential segregation and local educational policies on school segregation in 100 Hungarian towns. We focused on the ethnic segregation of primary schools (grades 1 through 8) and the extent to which Roma and non-Roma students attend the same schools and are, therefore, exposed to each other within the school environment. We used all available national data to accurately assess school segregation.

Residential segregation and local educational policies were measured using our own surveys. The measurement of the segregationist or integrationist tendencies of local educational policies is a major innovation of our study. Using data from questionnaire-based interviews with the heads of the municipal educational offices, we constructed ten instruments that each town could use to influence, either way, between-school segregation. The data show that, on average, Hungarian towns tend to implement educational policies that promote increased between-school segregation in addition to that which student mobility would imply. This segregationist tendency is, on average, rather moderate. There is, however, substantial heterogeneity across towns, with some towns even promoting ethnic distribution across schools, and other towns practicing policies that are considerably segregationist.

Our results indicate that school segregation is moderate in Hungarian towns. The data also show that, on average, school segregation within Hungarian towns increased substantially between 1992 and 2006, decreased from 2006 to 2008 and then increased again thereafter. However, data limitations prevent us from identifying robust trends after 2006.

Using the segregation indices, on the one hand, and the measures of residential segregation, student mobility and local education policies, on the other hand, we estimated a statistical model to assess the relative importance of the causal mechanisms behind school segregation of the Roma students in the 100 Hungarian towns.

Our results show that school segregation is significantly associated with student mobility, with the majority of the Roma population and with local educational policies. These associations hold conditional on each other. In other words, for a given share of the Roma population and a given educational policy environment, a higher mobility of middle class students is associated with higher levels of school segregation. At the same time, for a given level of mobility of middle class students and a given educational policy environment, a higher share of Roma students is associated with higher levels of school segregation. Finally, for given levels of mobility and Roma representation, towns with municipalities that implement segregationist (integrationist) educational policies in

their objectives tend to have higher (lower) levels of school segregation. Furthermore and contrary to student mobility, residential segregation is not significantly related to school segregation.

These results are consistent with a simple theory of school choice that includes differentiation in the (perceived) quality of schools as well as sorting by ability and family background into schools. Our data and analysis provide strong support for the significant role of inter-district student mobility as a major justification for school segregation. The role of residential segregation is weak, presumably because of the inter-district student mobility. We also demonstrated that local educational policies play a limited but non-negligible role in shaping between-school segregation in Hungarian towns.

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Appendix A. The sample

Table A.1. The sample of 100 towns

Name of city or town	County	No. election wards	Estimated fraction of Roma students	No. all students
Ózd	Borsod-Abaúj-Zemplén	40	49.4%	3586
Tiszavasvári	Szabolcs-Szatmár-Bereg	10	35.4%	1374
Nyírbátor	Szabolcs-Szatmár-Bereg	10	34.6%	1629
Hajdúhadház	Hajdú-Bihar	11	34.2%	1674
Heves	Heves	11	29.3%	1153
Bátonyterenye	Nógrád	14	27.0%	1092
Békés	Békés	21	26.9%	1378
Sajószentpéter	Borsod-Abaúj-Zemplén	10	26.0%	1612
Sátoraljaújhely	Borsod-Abaúj-Zemplén	22	26.0%	1599
Balmazújváros	Hajdú-Bihar	21	25.1%	1468
Vásárosnamény	Szabolcs-Szatmár-Bereg	8	24.1%	1024
Edelény	Borsod-Abaúj-Zemplén	10	22.1%	1179
Salgótarján	Nógrád	42	18.6%	3846
Komló	Baranya	32	18.0%	1950
Siklós	Baranya	11	17.7%	1154
Mezőkövesd	Borsod-Abaúj-Zemplén	17	16.3%	1447
Miskolc	Borsod-Abaúj-Zemplén	184	15.5%	12134
Püspökladány	Hajdú-Bihar	14	15.4%	1283
Oroszlány	Komárom-Esztergom	19	15.4%	1801
Kiskunhalas	Bács-Kiskun	29	15.0%	2348
Gyál	Pest	10	14.7%	1564
Monor	Pest	15	14.2%	1312
Mohács	Baranya	22	14.1%	1464
Törökszentmiklós	Jász-Nagykun-Szolnok	20	13.5%	1810
Berettyóújfalu	Hajdú-Bihar	17	13.2%	1261
Balassagyarmat	Nógrád	19	13.2%	1261
Bicske	Fejér	11	13.1%	1149
Gyomaendrőd	Békés	20	12.5%	1064
Kisvárd	Szabolcs-Szatmár-Bereg	15	12.2%	1813
Mezőtúr	Jász-Nagykun-Szolnok	19	12.2%	1388
Nagyatád	Somogy	10	12.0%	1159
Mátészalka	Szabolcs-Szatmár-Bereg	13	11.2%	1623
Karcag	Jász-Nagykun-Szolnok	20	11.1%	1750
Cegléd	Pest	35	11.0%	3095
Esztergom	Komárom-Esztergom	27	10.9%	2071
Sárospatak	Borsod-Abaúj-Zemplén	18	10.8%	1003
Tatabánya	Komárom-Esztergom	67	10.2%	5818
Nagykőrös	Pest	30	10.2%	1827
Kazincbarcika	Borsod-Abaúj-Zemplén	40	10.0%	2835
Sárbogárd	Fejér	20	10.0%	1195
Kalocsa	Bács-Kiskun	17	9.9%	1421
Csongrád	Csongrád	20	9.4%	1367
Kaposvár	Somogy	54	9.2%	5650
Siófok	Somogy	22	9.0%	1803
Ráckeve	Pest	9	9.0%	1051
Kiskunfélegyháza	Bács-Kiskun	33	8.9%	2476
Szentes	Csongrád	36	8.1%	2495
Pápa	Veszprém	28	7.9%	2614
Tiszaföldvár	Jász-Nagykun-Szolnok	10	7.9%	1064
Szolnok	Jász-Nagykun-Szolnok	70	7.7%	6364
Pécs	Baranya	160	7.6%	11444
Makó	Csongrád	30	7.5%	1766

Table A.1. The final sample of 100 towns, continued

Name of city or town	County	No. election wards	Estimated fraction of Roma students	No. all students
Zalaegerszeg	Zala	53	7.5%	4430
Dombóvár	Tolna	22	7.4%	1565
Szarvas	Békés	22	7.4%	1108
Hódmezővásárhely	Csongrád	60	7.4%	3297
Kecskemét	Bács-Kiskun	92	7.3%	8317
Nyíregyháza	Szabolcs-Szatmár-Bereg	92	7.3%	8183
Tapolca	Veszprém	18	7.1%	1340
Eger	Heves	48	7.0%	5278
Gödöllő	Pest	23	6.9%	2795
Körmend	Vas	11	6.8%	1235
Keszthely	Zala	20	6.8%	1412
Újfehértó	Szabolcs-Szatmár-Bereg	11	6.7%	1581
Tata	Komárom-Esztergom	24	6.6%	1259
Jászberény	Jász-Nagykun-Szolnok	30	6.6%	2206
Hajdúböszörmény	Hajdú-Bihar	29	6.3%	2835
Dabas	Pest	10	6.2%	1336
Paks	Tolna	20	6.0%	1811
Sárvár	Vas	19	5.9%	1372
Érd	Pest	43	5.9%	4220
Bonyhád	Tolna	13	5.8%	1320
Szekszárd	Tolna	34	5.8%	3295
Ajka	Veszprém	31	5.8%	2207
Hatvan	Heves	21	5.7%	1957
Celldömök	Vas	10	5.4%	1108
Tiszaújváros	Borsod-Abaúj-Zemplén	18	5.4%	1855
Baja	Bács-Kiskun	37	5.2%	2576
Vác	Pest	28	5.0%	3075
Gyöngyös	Heves	28	4.8%	2060
Fót	Pest	10	4.6%	1455
Nagykanizsa	Zala	48	4.3%	3904
Dunaharaszti	Pest	16	4.3%	1136
Dorog	Komárom-Esztergom	10	4.2%	1176
Orosháza	Békés	40	4.2%	1960
Dunakeszi	Pest	25	4.2%	2088
Szombathely	Vas	67	4.1%	5675
Várpalota	Veszprém	21	4.0%	1697
Hajdúnánás	Hajdú-Bihar	20	3.9%	1455
Győr	Győr-Moson-Sopron	104	3.7%	9278
Kőszeg	Vas	10	3.7%	1176
Mór	Fejér	11	3.4%	1397
Békéscsaba	Békés	61	3.4%	4381
Hajdúszoboszló	Hajdú-Bihar	20	3.4%	1724
Szeged	Csongrád	129	3.3%	11551
Székesfehérvár	Fejér	87	3.3%	8347
Szentendre	Pest	10	3.3%	2175
Debrecen	Hajdú-Bihar	166	3.2%	15004
Budaörs	Pest	18	3.1%	2015
Vecsés	Pest	20	3.0%	1415
Mosonmagyaróvár	Győr-Moson-Sopron	30	3.0%	2039

Appendix B. Robustness checks using alternative imputations for the missing data on the ethnic composition of schools

Table B1. Summary statistics of the variables using alternative imputations (unweighted means and standard deviations; number of observations = 99)

Variable	Description	Imputation							
		no		1		2		3	
		Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.	Mean	Std. dev.
S	Between-school segregation index (source: NABC, 2010)	0.15	0.16	0.14	0.14	0.12	0.13	0.23	0.23
R	Percentage of Roma students in the primary (1-8) grade students (source: NABC, 2010)	0.13	0.11	0.13	0.11	0.13	0.11	0.13	0.11

Table B2. Results of the structural regression (left hand-side variable: school segregation) using alternative imputations

Dep. var: S	Imputation			
	no	1	2	3
L	0.12 [0.12]	0.10 [0.12]	0.07 [0.10]	0.08 [0.16]
M	0.25 [0.08]**	0.27 [0.08]**	0.25 [0.07]**	0.40 [0.13]**
P	0.17 [0.09]+	0.16 [0.07]*	0.13 [0.05]*	0.10 [0.15]
R	0.58 [0.13]**	0.67 [0.12]**	0.69 [0.11]**	0.86 [0.23]**
Constant	-0.07 [0.04]+	-0.09 [0.04]*	-0.10 [0.03]**	-0.07 [0.06]
Observations	99	99	99	99
R-squared	0.28	0.37	0.42	0.23

Table B3. Results of the structural regression (left hand-side variable: policy) using alternative imputations

Dep. var: P	Imputation			
	no	1	2	3
L	0.19 [0.09]*	0.19 [0.09]*	0.20 [0.09]*	0.24 [0.09]**
R	-0.10 [0.15]	-0.10 [0.16]	-0.10 [0.16]	-0.23 [0.15]
A	0.13 [0.06]*	0.13 [0.06]*	0.13 [0.06]*	0.15 [0.06]*
Constant	0.14 [0.03]**	0.14 [0.03]**	0.14 [0.03]**	0.15 [0.03]**
Observations	99	99	99	99
R-squared	0.09	0.08	0.09	0.11

Table B4. Results of the structural regression (left hand-side variable: residential segregation) using alternative imputations

Dep. var: L	Imputation			
	no	1	2	3
R	0.63 [0.15]**	0.65 [0.16]**	0.66 [0.16]**	0.62 [0.13]**
logN	0.02 [0.02]	0.02 [0.02]	0.02 [0.02]	0.02 [0.02]
Constant	-0.06 [0.14]	-0.08 [0.14]	-0.09 [0.15]	-0.07 [0.15]
Observations	99	99	99	99
R-squared	0.18	0.18	0.2	0.2

Appendix C

The definition of the local educational policy instruments

Local Educational Policy Instruments (P):

- P1. Closing of schools
- P2. Merger of schools
- P3. Reducing the number of school districts on a large scale
- P4. Merging school districts or modifying school districts' boundaries
- P5. Changing the school provider: transforming municipal schools into parochial or not for profit private schools
- P6. Admission policies of municipal elite schools
- P7. Ensuring proper representation of Roma students in municipal schools where the proportion of Roma students is low
- P8. Supporting the establishment of new parochial or not for profit private schools
- P9. Intervention against segregation targeting non-municipal schools (to meet Roma proportion benchmarks)
- P10. Policies towards segregated Roma schools

Legend:

In red boxes: Question numbers from the Educational Policy Questionnaire

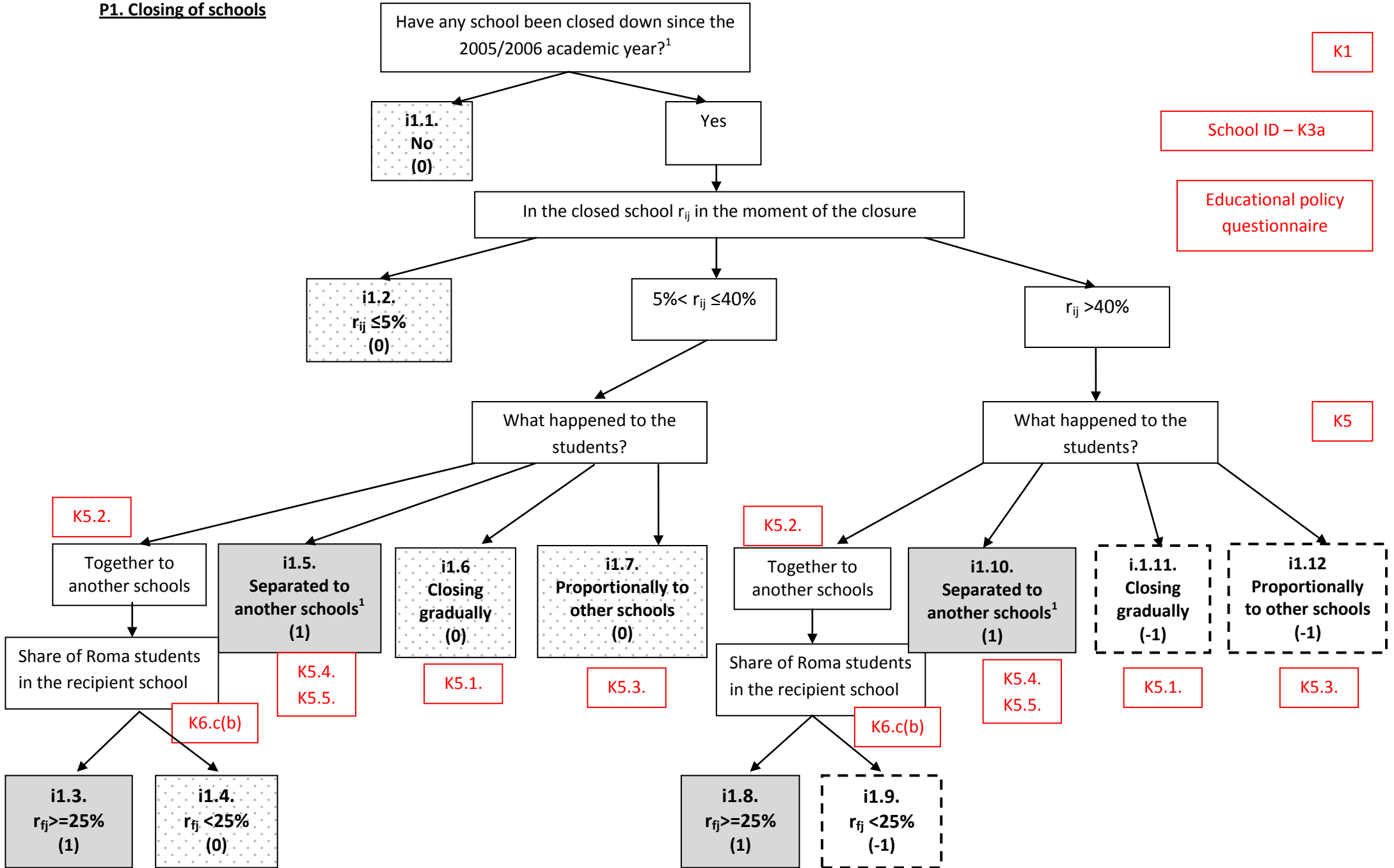
Endpoints (from 1 to y) of a given Graph (x) are marked by symbols from ix.1 to ix.y.

0, 1, or -1 integer values are assigned to the endpoints of the Graphs depending on the attitude/behavior of the educational administration with regard to the local school system:

- v = 0:** non-activist position (or the instrument is not used)
- v = 1:** segregationist attitude / behavior
- v = -1:** integrationist attitude / behavior

endpoint is marked by:
dotted area in the box
gray area in the box
dashed lines bordering the box

P1. Closing of schools



K1

School ID – K3a

Educational policy questionnaire

K5

K5.2.

K5.2.

K6.c(b)

K6.c(b)

K5.4.
K5.5.

K5.1.

K5.3.

K5.4.
K5.5.

K5.1.

K5.3.

Notes1:

1 – Separated to another schools: Roma and non-Roma students go separated to recipient schools; or the assignment depends on NABC test results; or schools screen the students on the basis of previous school achievement. (NABC: National Assessment of Basic Competences)

Documents:

Resolution on school closing

Council action plan for operating and developing the local school system

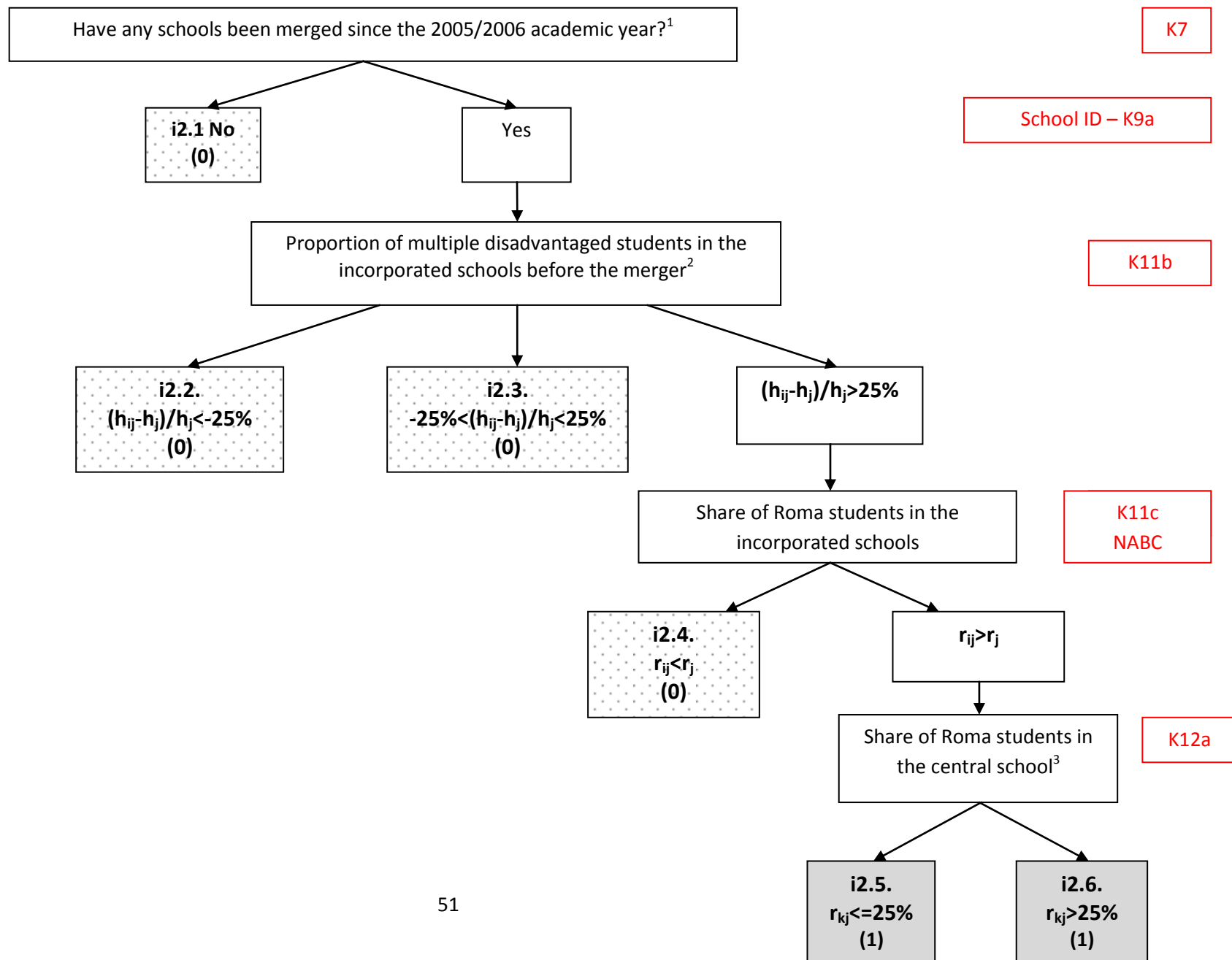
Action plan of equal opportunities in public education

Notation

r_{ij} – share of Roma students in school i in city j

r_{fj} – share of Roma students in the recipient school in city j

P2. Merger of schools



Notes 2:

NABC: National Assessment of Basic Competences

1 – School merger: education is continued in the participating schools

2 – Prerequisite of participation in school integration programs: the proportion of multi-disadvantaged students may differ from the proportion of multi-disadvantaged students calculated for the whole of the town or village by 25 per cent at most

3—Central school: usually the larger school which is incorporating another independent school

Documents:

Resolution on merger of schools,

Council action plan for operating and developing the local school system [Act No. LXXIX of 1993 on Public Education, Article 85 (4)]

Action plan of equal opportunities in public education

Notation

h_j – share of multiple disadvantaged students in city j

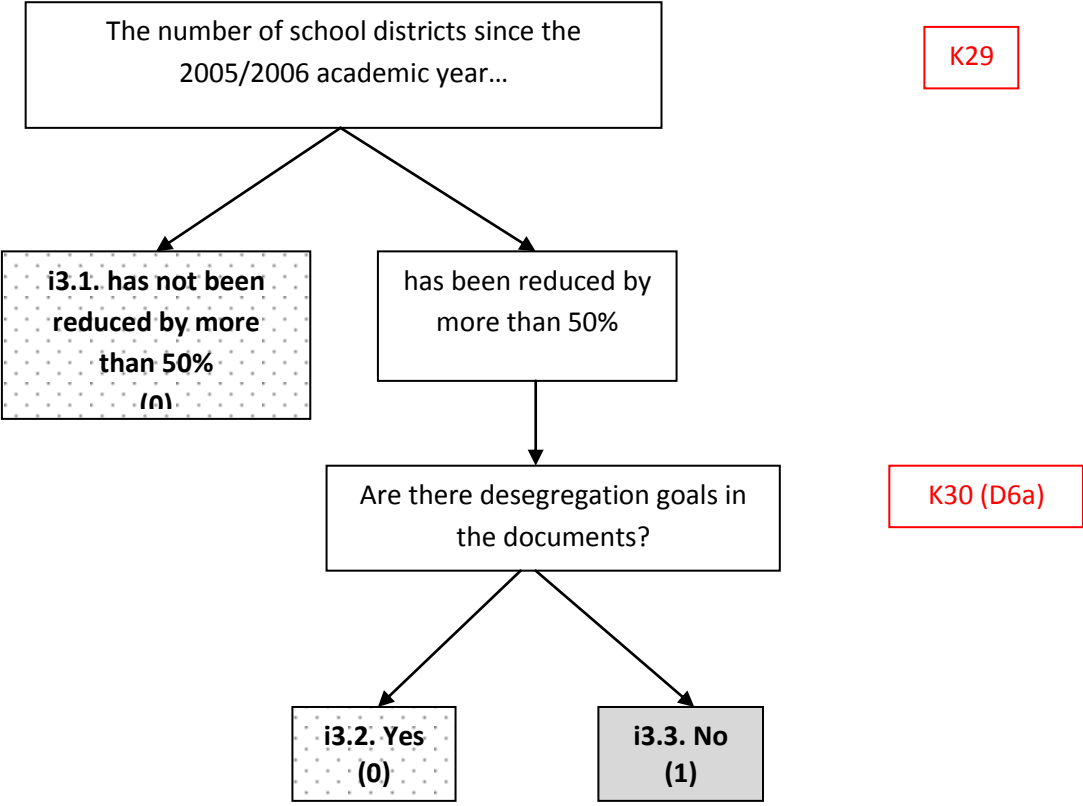
h_{ij} – share of multiple disadvantaged students in school i in city j

r_j – share of Roma students in city j

r_{ij} – share of Roma students in school i in city j

r_{kj} – share of Roma students in the central school in city j

P3. Reducing the number of school districts on a large scale



Notes 3:

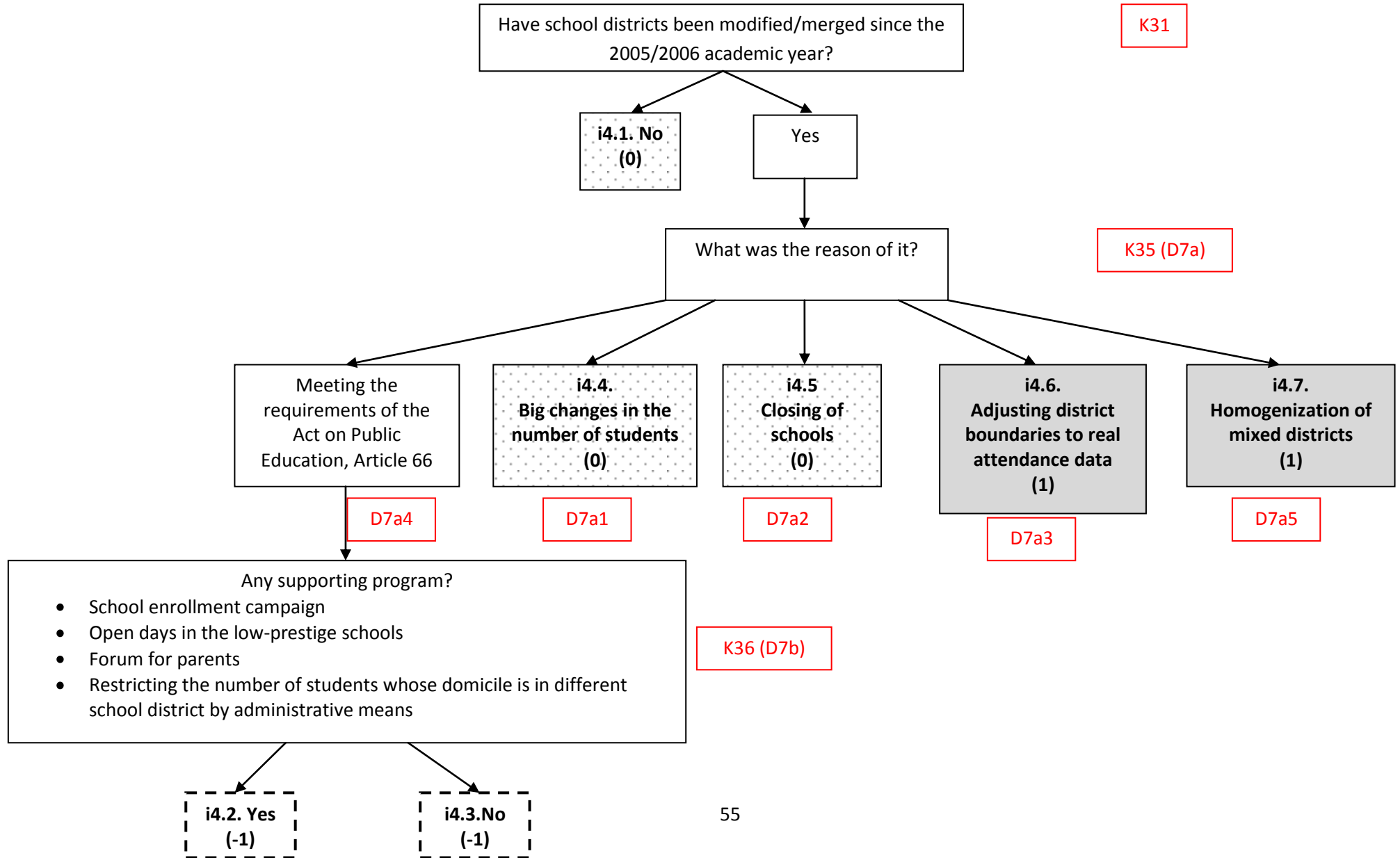
Documents:

Resolutions on reducing the number of school districts

Council action plan for operating and developing the local school system

Action plan of equal opportunities in public education

P4. Merging school districts or modifying school districts' boundaries



Notes 4:

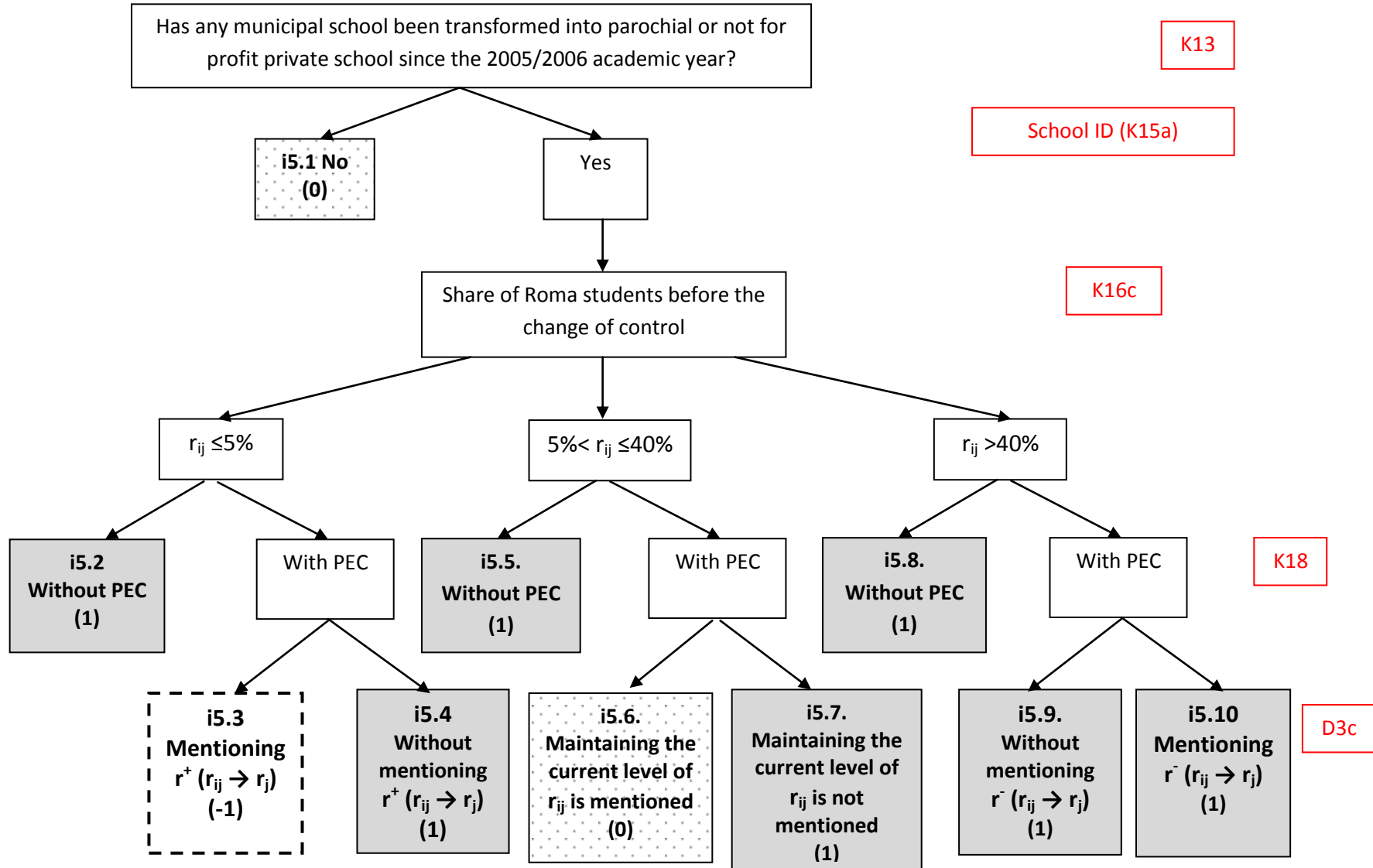
Explanations:

- Adjusting district boundaries to real attendance data: adjusting school district boundaries with regard to inter-district mobility of students
- Meeting the requirements of Act on Public Education, Article 66: „If there are more primary schools operating in the village or town, the proportion of multi-disadvantaged students calculated for each school may not exceed the proportion of multi-disadvantaged students calculated for the whole of the town or village by more than 25 per cent.”

Documents:

Resolution on modifying school districts,
Action plan of equal opportunities in public education,
Documents on the supporting programs

P5. Changing the school provider: transforming municipal schools into parochial or not for profit private schools



Notes 5:

PEC: public education contract (contract between the educational provider and the local administration responsible for the operation of the local school system)

Documents:

The local council's resolution on the transformation of the municipal school

Council action plan for operating and developing the local school system

Action plan of equal opportunities in public education

Contracts with the educational providers (PEC-s)

Notation

r_{ij} – share of Roma students in school i in city j

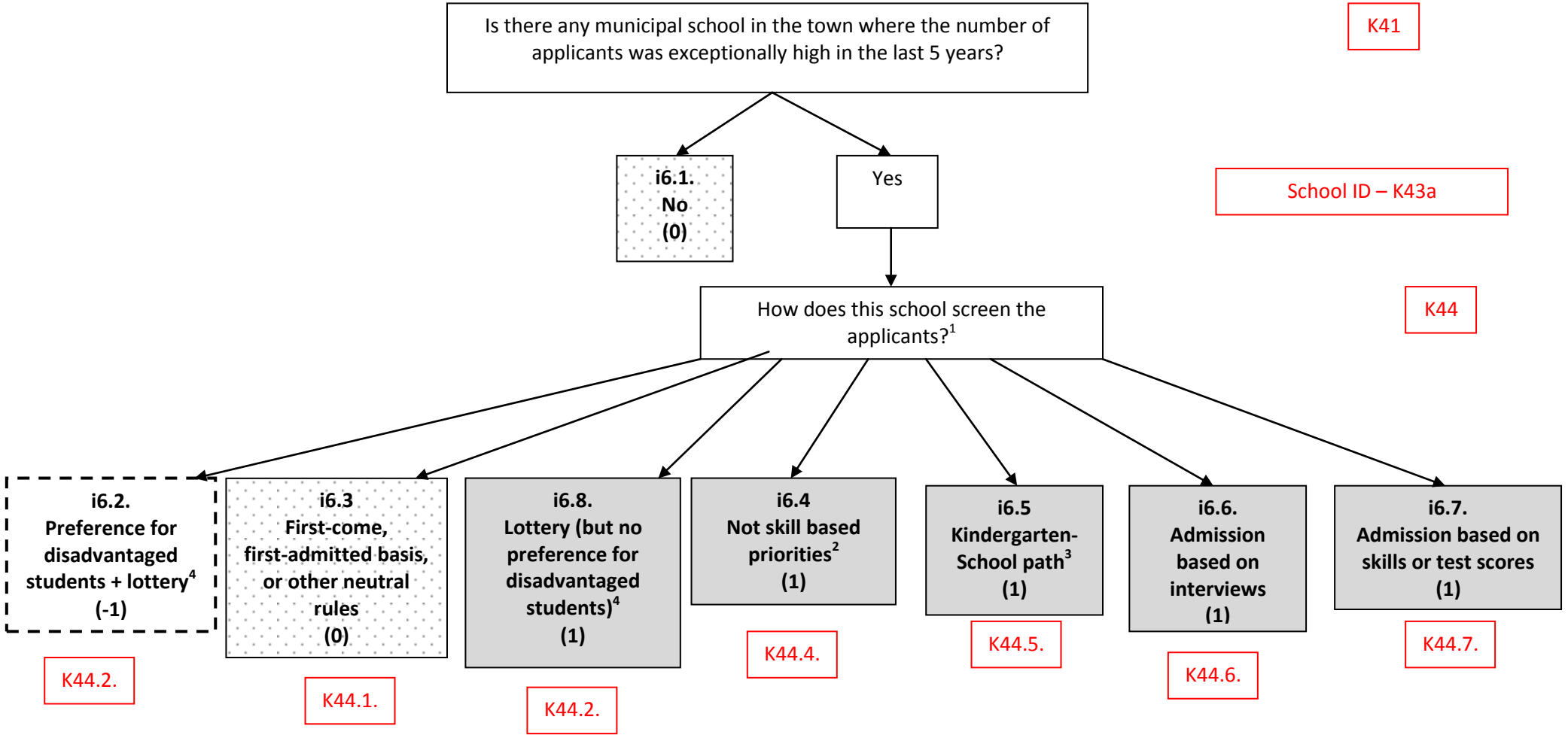
r_j – share of Roma students in city j

r^+ – increasing the share of Roma students, integration

r^- – decreasing the share of Roma students, integration

$(r_{ij} \rightarrow r_j)$ – convergence of the share of Roma students to the town's average

P6. Admission policies of municipal elite schools



Notes 6:

1 – In the case of multiple screening code the highest.

2 – Not skill based priorities: Decision made by the school headmaster; not skill based selection (e.g.: brother/sister is in the school, parents work near to the school, etc.)

3 – Kindergarten-school path: the admission is an automatically ensured from certain kindergarten

4 - Act No. LXXIX of 1993 on Public Education, Article 66: "If a primary school cannot grant all the applications for admission due to lack space according to the given order, they decide between the applicants belonging to the group affected by drawing lots."

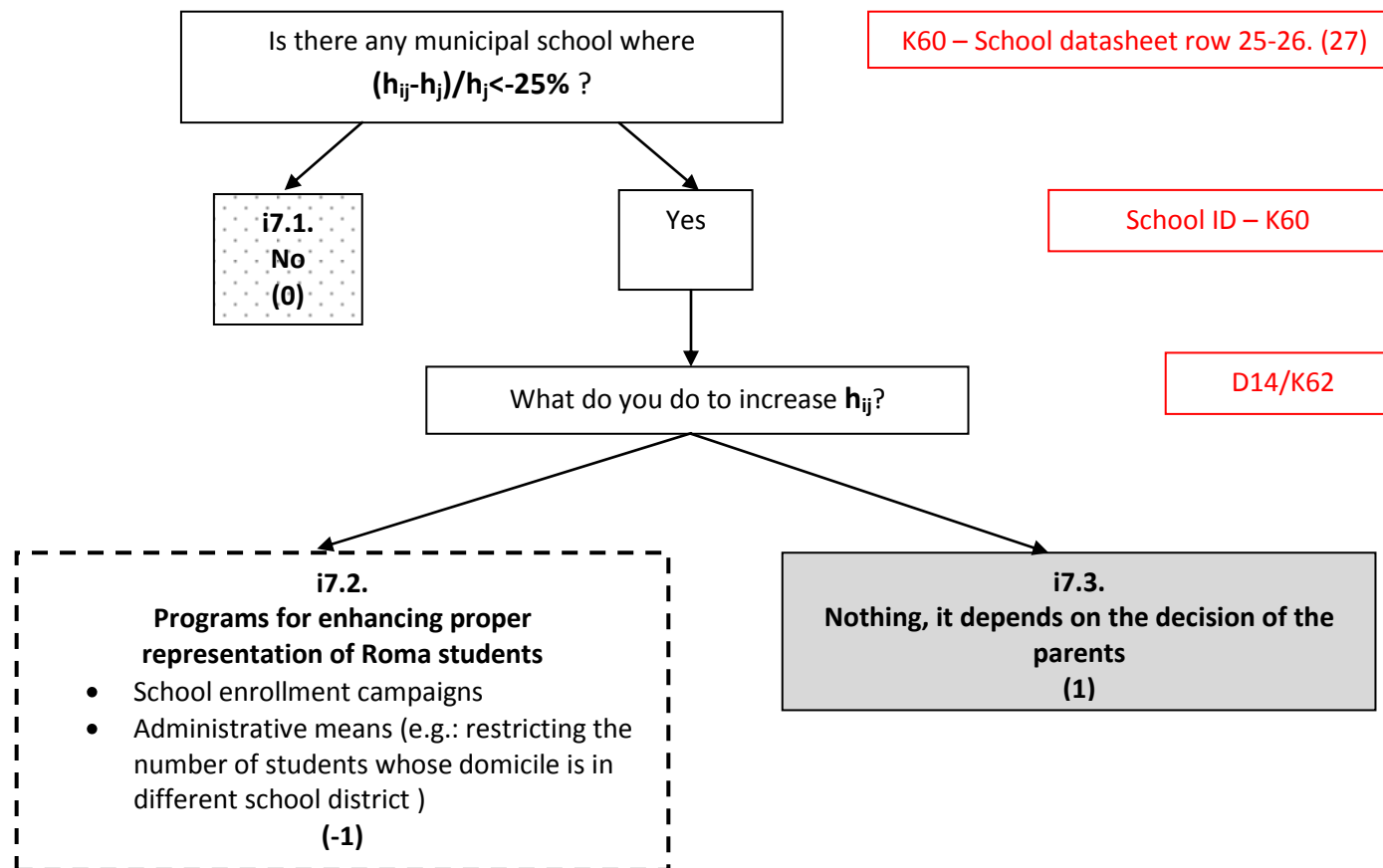
Documents:

Documents on the selection forms,

Council action plan for operating and developing the local school system

Action plan of equal opportunities in public education

P7.Ensuring proper representation of Roma students in municipal schools where the proportion of Roma students is low



Notes 7:

Documents:

Local council resolution (draft resolution) on the programs

Programs reports

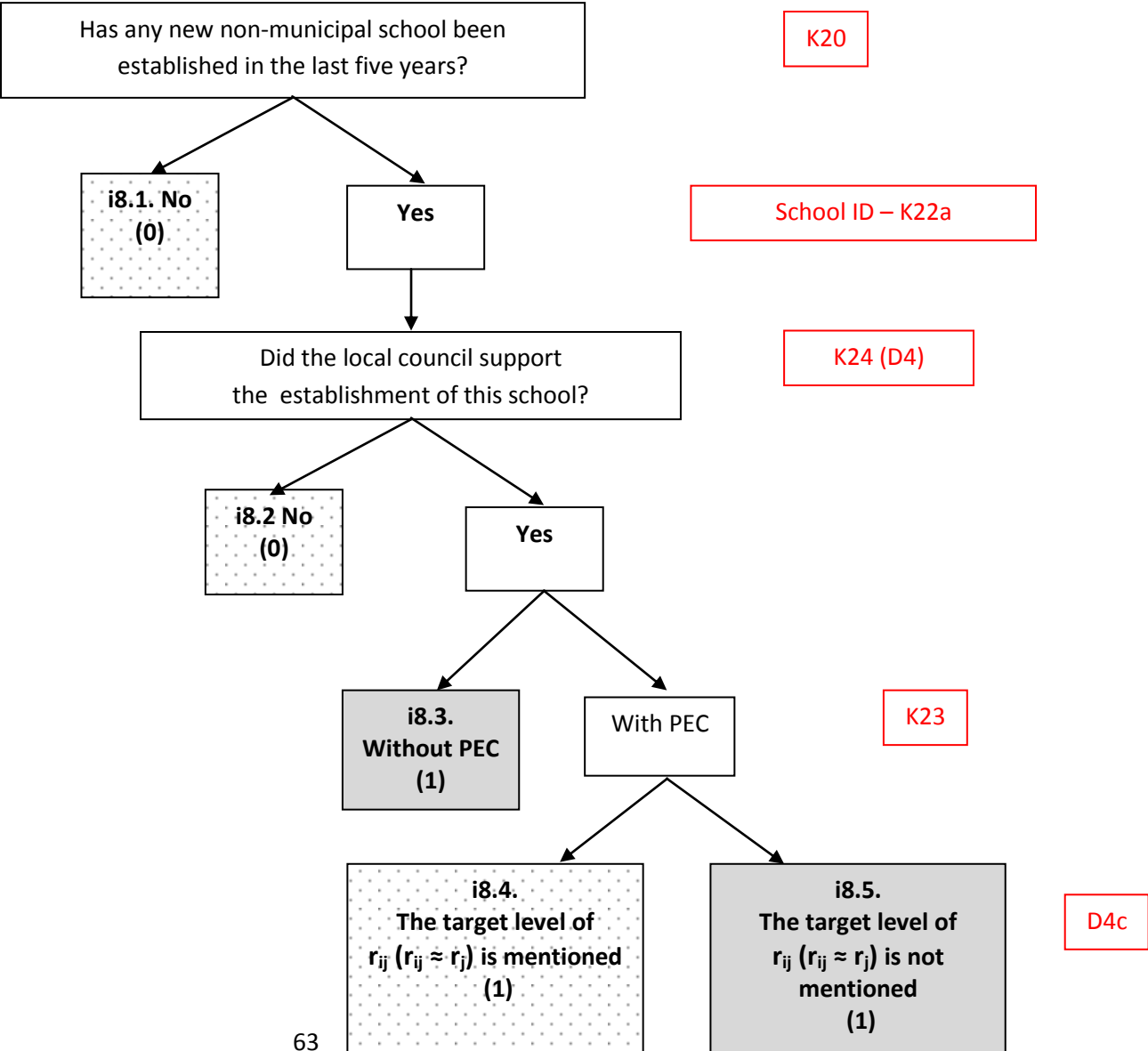
Action plan of equal opportunities in public education

Notation:

h_j – share of multiple disadvantaged students in city j

h_{ij} – share of multiple disadvantaged students in school i in city j

P8. Supporting the establishment of new parochial or not for profit private schools



Notes 8:

Documents:

PEC: public education contract (contract between the educational provider and the local administration responsible for the operation of the local school system)

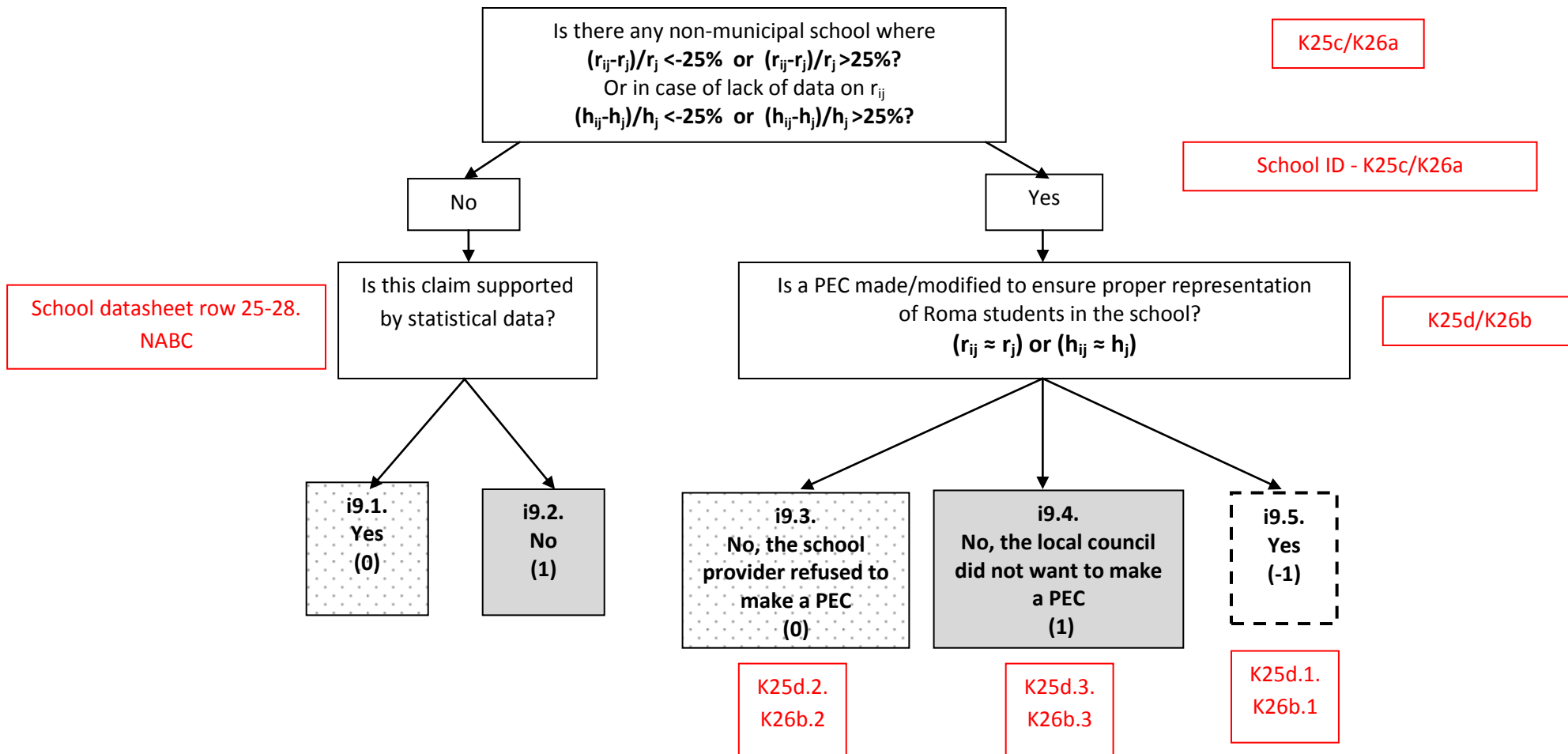
Resolution/draft resolution on the support/financial aid of the new parochial or not for profit private school

Notation:

r_{ij} – share of Roma students in school i in city j

r_j – share of Roma students in city j

P9. Intervention against segregation targeting non-municipal schools (to meet Roma proportion benchmarks)



Notes 9:

Documents:

PEC-s: public education contracts (contracts between the educational providers and the local administration responsible for the operation of the local school system)

Notation:

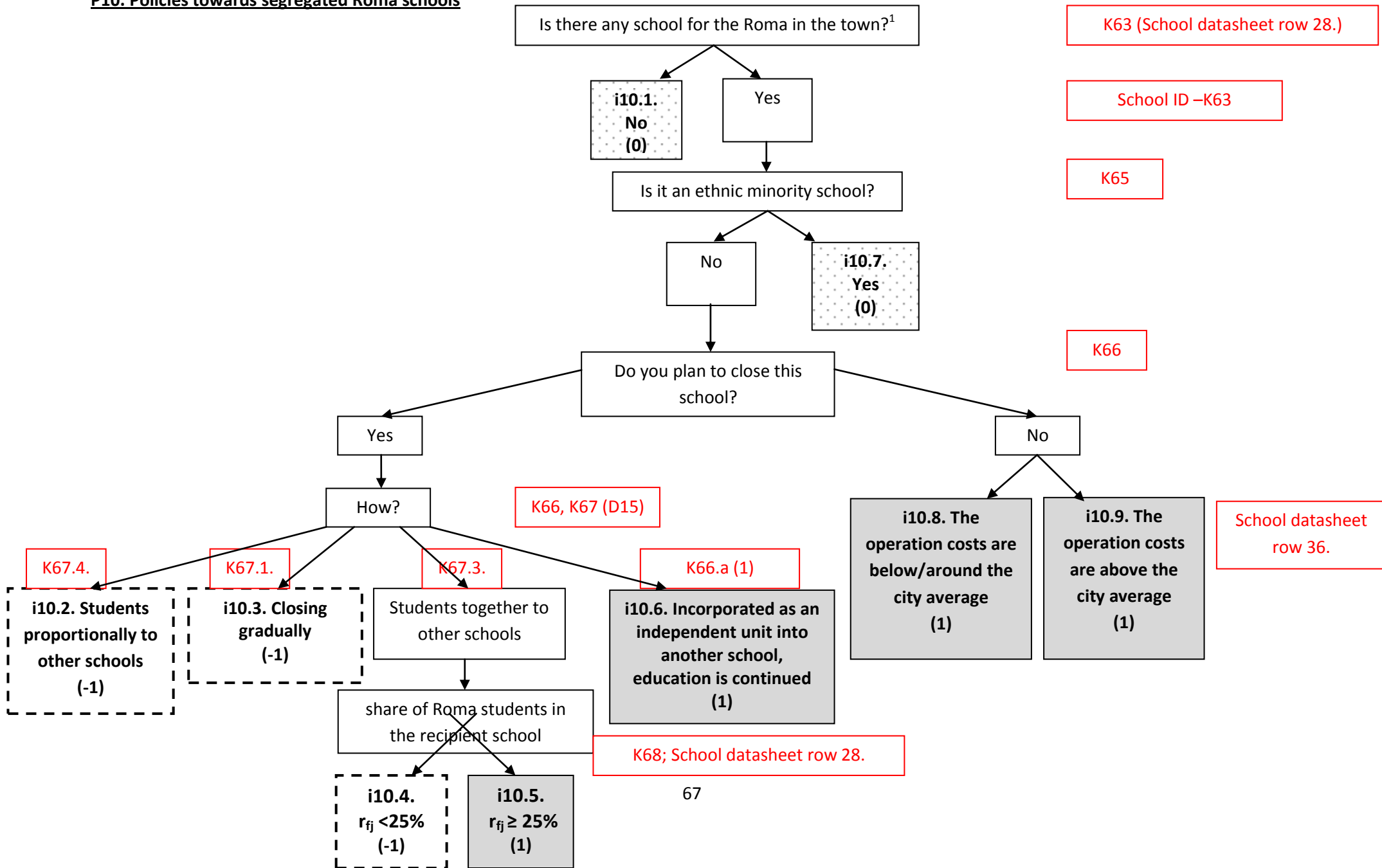
h_j – share of multiple disadvantaged students in city j

h_{ij} – share of multiple disadvantaged students in school i city j

r_{ij} – share of Roma students in school i in city j

r_j – share of Roma students in city j

P10. Policies towards segregated Roma schools



Notes 10:

1 – “School for the Roma”: share of Roma students is over 40%

Documents:

Resolution on closing the Roma school

Council action plan for operating and developing a network of institutions

Founding charter of the ethnic minority school

Action plan of equal opportunities in public education

Notation:

r_{fj} – share of Roma students in the recipient school in city j

Analysis and assessment of municipal documents: stereotypes, panels, linguistic clichés

1. Segregationist attitude/goals

- Prejudices, stereotypes, generalizations against Roma/multiple disadvantaged students;
- Emphasising of cultural differences between the Roma and majority population;
- Emphasising cultural conflicts;
- Identifying Roma/multiple disadvantaged students with bad social/family background;
- Identifying Roma/multiple disadvantaged students with students who hinder the others in learning;
- Treating Roma/multiple disadvantaged students as homogeneous group and indentifying them with low-ability students;
- Arguments for the development of segregated institutions; emphasizing the achievements, results of the segregated institutions;

2. Emphasising separation interests of the majority

- Students have the right to receive education and teaching in compliance with their abilities
- Progress/improvement of schools are hindered by low-ability/behavior/socialization of certain students
- Supporting ability tracking;
- Supporting tracking on the basis of motivation, diligence. Sentences with “who do not want to learn...”
- Referring to the middle class flight;

3. Integrationist/desegregationist attitude/goals

- The proportion of Roma/multiple disadvantaged students calculated for each school district should be around the proportion of Roma/multiple disadvantaged students calculated for the whole of the city;
- Providing equal access to quality education;
- Emphasizing the role of education in *equalizing the opportunities*;
- Multiculturalism, integrated education;
- Dangers of segregation;
- Equal opportunities;
- Causes of failures: structural causes as opposed to blaming the poor and Roma pupils/families

4. Hidden (implicit) segregationist attitude combined with explicit integrationist goals

- Treating Roma students as homogeneous group and supporting different education on the basis of students' ability
- Emphasizing the special characteristics of Roma students and the competencies (special pedagogical knowledge) which are needed for their education
- Generalization against Roma parents, condemnation;
- Using integration in a narrow manner ("first it is necessary to be able for integration", etc.)
- Romology, Roma-pedagogy, Roma minority education as primary approach
- Causes of failures: family background, motivation, social environment, "inner" causes
- Emphasizing biological differences ("early/premature growing", etc.)

Appendix D

The definition of the general policy attitudes measures of the local educational administration with respect to equal opportunities

Policy attitudes measures (A)

- A1. Restricting the practice of exceedingly classifying students into SEN¹ status
- A2. Classifying students into “home-schooled” status²
- A3. Preventing poor children from being crowded out of kindergarten in case of short supply in facilities
- A4. Encouraging participation of Roma children in kindergartens
- A5. Neglecting the problem of registration of students with “multiple disadvantages”

Legend:

In red boxes: Question numbers from the Educational Policy Questionnaire

Endpoints (from 1 to y) of a given Graph (x) are marked by symbols from ix.1 to ix.y.

0, 1, or -1 integer values are assigned to the endpoints of the Graphs depending on the attitude/behavior of the educational administration with regard to equal opportunities:

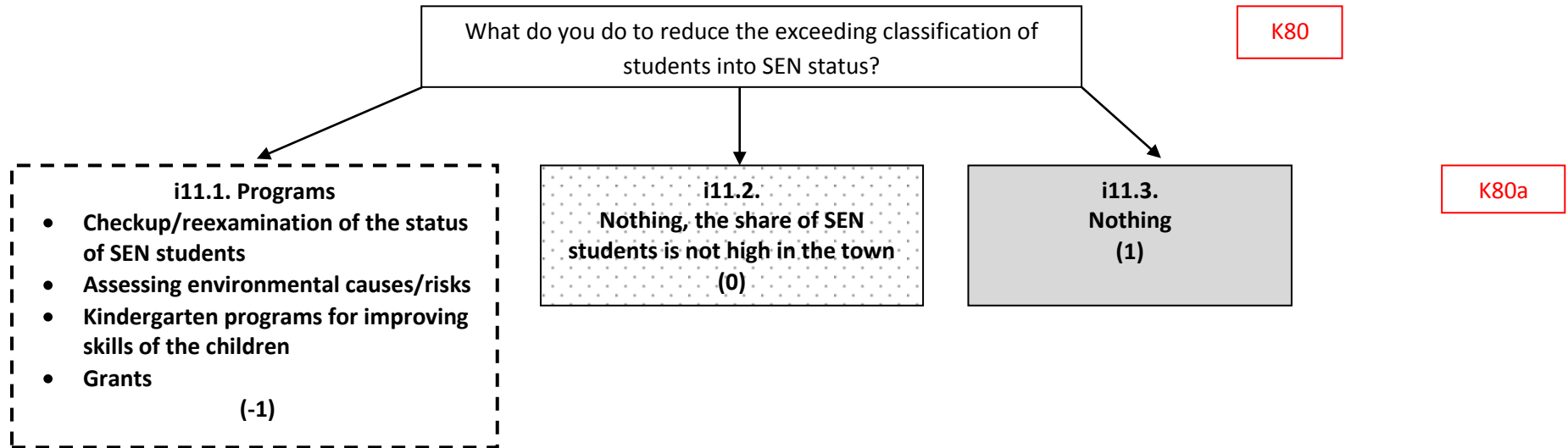
v = 0: neutral position (or irrelevant issue in the town)
v = 1: neglecting equal opportunities
v = -1: enhancing equal opportunities

endpoint is marked by:
dotted area in the box
gray area in the box
dashed lines bordering the box

¹ SEN = special educational needs

² Home-schooled students are exempted from all compulsory classes at school. Certain schools try to get rid of overage or difficult -to-manage children this way.

A1: Restricting the practice of exceedingly classifying students into SEN³ status



³ SEN = special educational needs

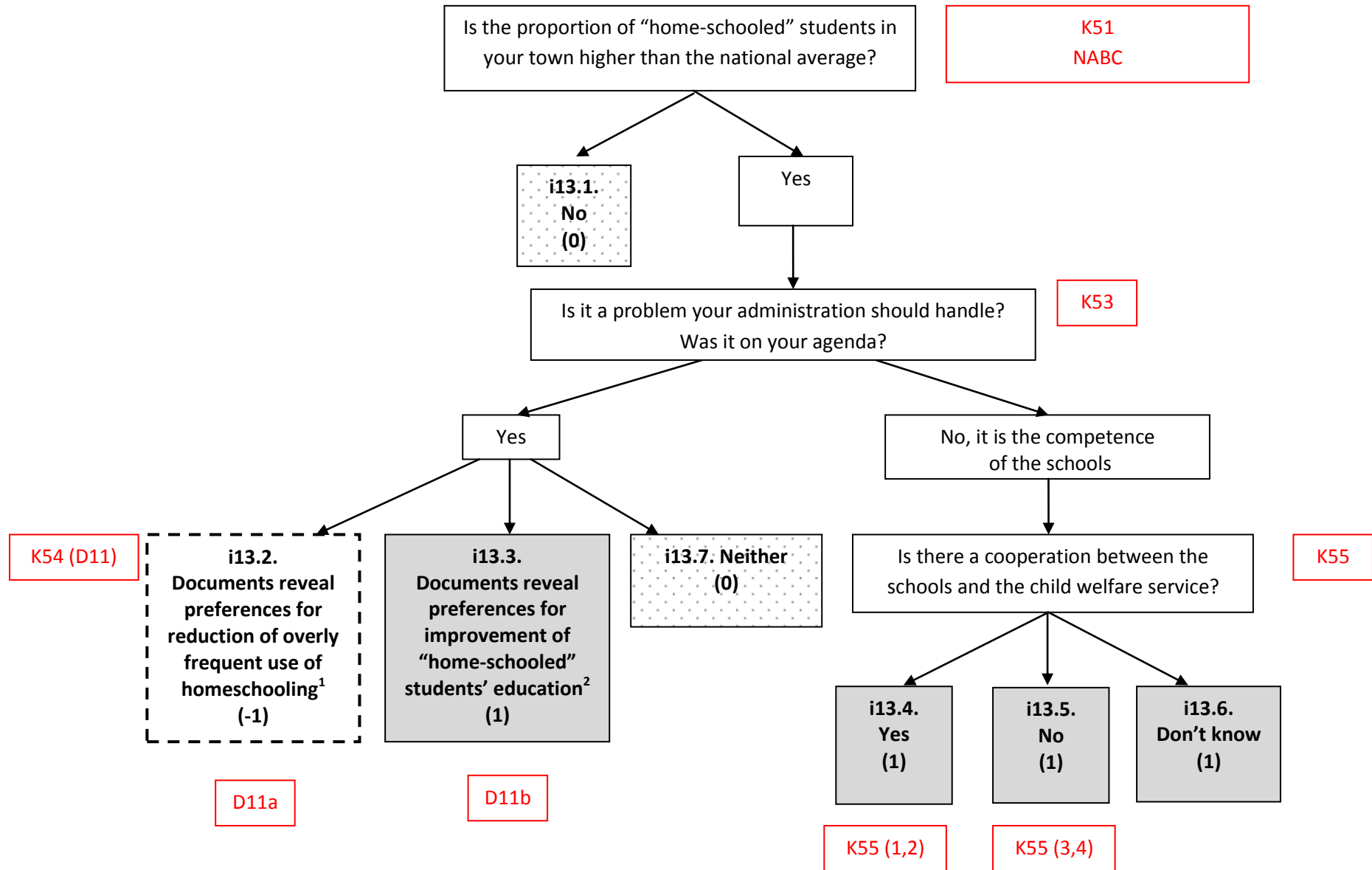
Notes 1:

Documents:

Resolution(s) on the programs

Action plan of equal opportunities in public education

A2: Classifying students into “home-schooled” status



Notes 2:

NABC: National Assessment of Basic Competences

1 – Examples: in-service training of teachers, improving cooperation with parents/NGOs; Roma mentor, etc.

2 – Improvement of “home-schooled” student’s education. This can drive the increase of the number of “home-schooled” students.

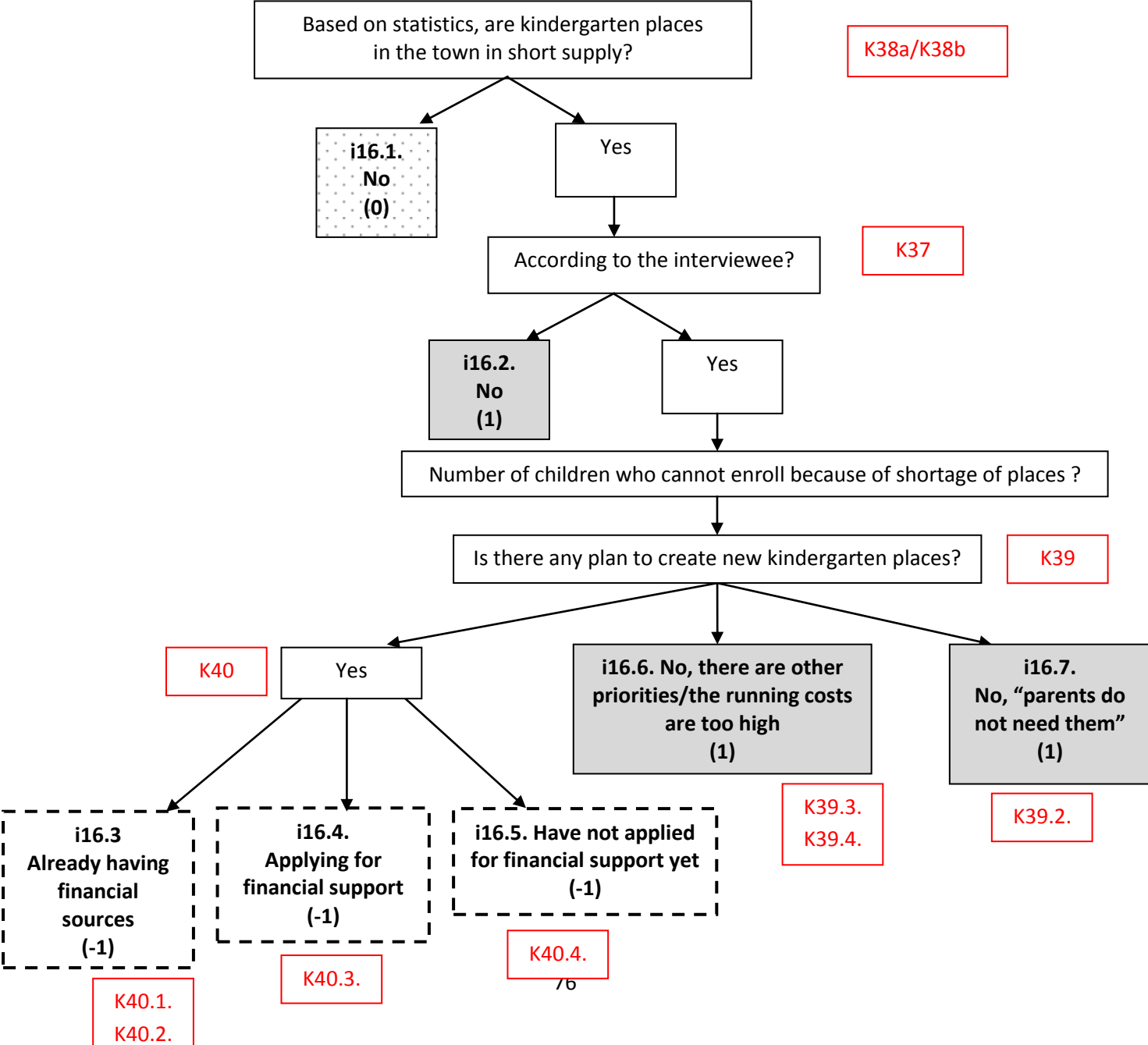
Documents:

Resolution(s) on the programs dealing with private students

Council action plan for operating and developing the local school system

Action plan of equal opportunities in public education

A3: Preventing poor children from being crowded out of kindergarten in case of short supply in facilities



Notes 3:

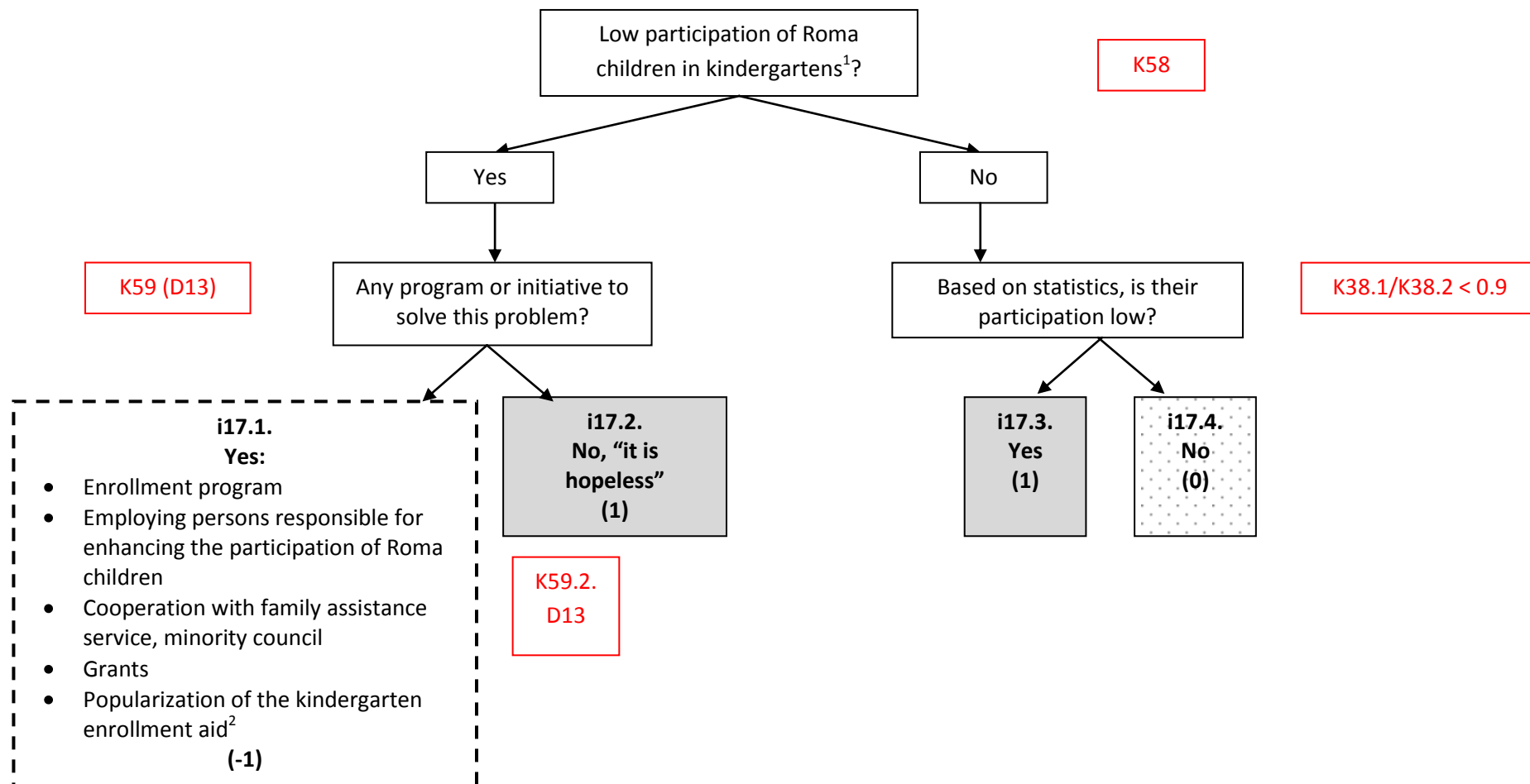
Documents:

Council action plan for operating and developing the local school system

Action plan of equal opportunities in public education,

Plans, tenders on enlargement/development of kindergartens

A4: Encouraging participation of Roma children in kindergartens



Notes 4:

1 – Low participation of Roma children in kindergartens: a) low enrollment rate before the age of 5, b) absentism

2 – Kindergarten enrollment aid: a nationwide conditional cash transfer program, introduced in January 2009

Documents:

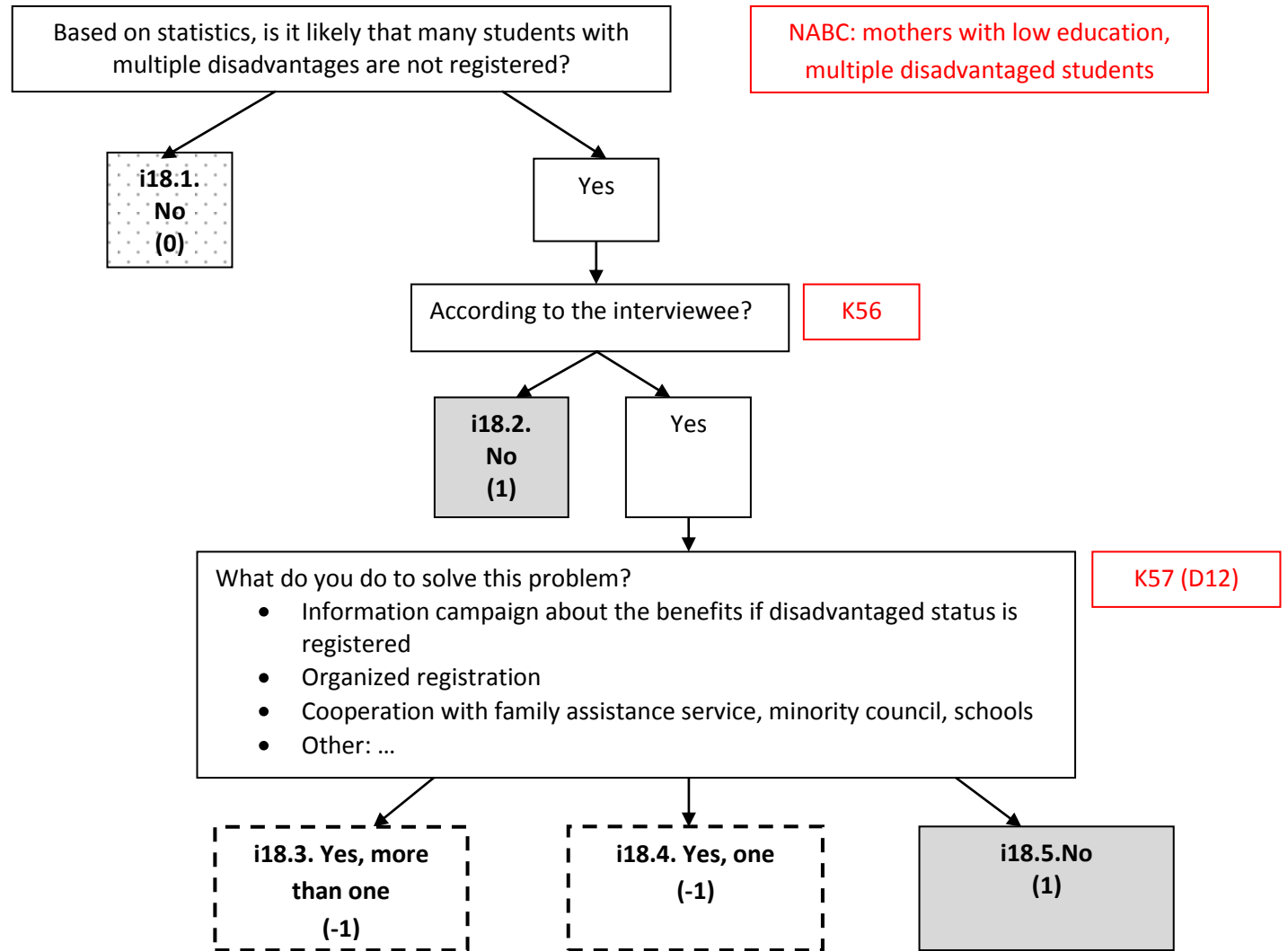
Documents on programs/initiatives,

Council action plan for operating and developing a network of the local school system

Action plan of equal opportunities in public education,

Plans, tenders on enlargement/development of kindergartens

A5: Neglecting the problem of registration of students with “multiple disadvantages”



Notes 5:

NABC: National Assessment of Basic Competences

Documents:

Action plan of equal opportunities in public education,

Local council resolution (draft resolution) on the programs

Analysis and assessment of municipal documents: stereotypes, panels, linguistic clichés

1. Segregationist attitude/goals

- Prejudices, stereotypes, generalizations against Roma/multiple disadvantaged students;
- Emphasising of cultural differences between the Roma and majority population;
- Emphasising cultural conflicts;
- Identifying Roma/multiple disadvantaged students with bad social/family background;
- Identifying Roma/multiple disadvantaged students with students who hinder the others in learning;
- Treating Roma/multiple disadvantaged students as homogeneous group and indentifying them with low-ability students;
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2. Emphasising separation interests of the majority

- Students have the right to receive education and teaching in compliance with their abilities
- Progress/improvement of schools are hindered by low-ability/behavior/socialization of certain students
- Supporting ability tracking;
- Supporting tracking on the basis of motivation, diligence. Sentences with “who do not want to learn...”
- Referring to the middle class flight;

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- The proportion of Roma/multiple disadvantaged students calculated for each school district should be around the proportion of Roma/multiple disadvantaged students calculated for the whole of the city;
- Providing equal access to quality education;
- Emphasizing the role of education in *equalizing the opportunities*;
- Multiculturalism, integrated education;
- Dangers of segregation;
- Equal opportunities;
- Causes of failures: structural causes as opposed to blaming the poor and Roma pupils/families

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- Generalization against Roma parents, condemnation;
- Using integration in a narrow manner ("first it is necessary to be able for integration", etc.)
- Romology, Roma-pedagogy, Roma minority education as primary approach
- Causes of failures: family background, motivation, social environment, "inner" causes
- Emphasizing biological differences ("early/premature growing", etc.)

EDUCATIONAL POLICY RESEARCH

2011

QUESTIONNAIRE

Town: ID:

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START OF INTERVIEW:
2011. month day hour min

I. CHANGE OF LOCAL INSTITUTIONS BETWEEN THE 2005/06 – 2010/11 ACADEMIC YEARS

1. CLOSING OF SCHOOLS

CLOSED SCHOOLS WORKSHEET!
For every closed down school where the education is stopped!

k1. Have any school been closed down since the 2005/2006 academic year? (according to the Closed schools worksheet)

1 – Yes

Cross-check with the Closed schools worksheet!

2 – No



Go to **k7**

k2. How many schools have been closed?

school(s)

Fill out new section for every closed down school!
In the questionnaire you find enough space for only a few cases. For more cases use supplementary sheets!
Important: Every case is about only one closure!

1. CASE, CLOSING OF SCHOOLS

k3. a. Please, give some details of the closure!

a. Closed school, ID number	b. Address	c. Last year of the education? /..... academic year	d. Replacement school(s)?		
			ID number	Short name!	Address

k4. a. What was the reason behind the decision to close the school?

.....

.....

Because of the different educational programs of schools the transition can be complicated.

k5. a. What was the mechanism of the assignment of students to new school(s) in this case?

- 1 – closing gradually
- 2 – together to another school,
- 3 – proportionally to other schools (multiple disadvantaged students and other students are assigned proportionally)
- 4 – the assignment depends on test results, skills
- 5 – screening the applicants

k6. a. IF THE STUDENTS OF THE CLOSED SCHOOL REPLACED TOGETHER TO ANOTHER SCHOOL!
(k5. a.=2)

About what percentage of students in the replacement school was SEN/multiple disadvantaged/Roma/high ability student before the closure? Do you remember the proportion of these certain group of students?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

2. CASE, CLOSING OF SCHOOLS

k3. b. Please, give some details of the closure!

a. Closed school, ID number	b. Address	c. Last year of education? /..... academic year	d. Replacement school(s)?		
			ID number	Short name!	Address

k4. b. What was the reason behind the decision to close the school?

.....

.....

Because of the different educational programs of schools the transition can be complicated.

k5. b. What was the mechanism of the assignment of students to new school(s) in this case?

- 1 – closing gradually
- 2 – together to another school,
- 3 – proportionally to other schools (multiple disadvantaged students and other students are assigned proportionally)
- 4 – the assignment depends on test results, skills
- 5 – screening the applicants

**k6. b. IF THE STUDENTS OF THE CLOSED SCHOOL REPLACED TOGETHER TO ANOTHER SCHOOL!
(k5. b.=2)**

About what percentage of students in the replacement school was SEN/multiple disadvantaged/Roma/high ability student before the closure? Do you remember the proportion of these certain group of students?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Resolution on school closing				
Case 1: <i>Write the name here!</i>	1 2			
Case 2:	1 2			
Council action plan for operating and developing the local school system				
Case 1:	1 2			
Case 2:	1 2			
Action plan of equal opportunities in public education				
Case 1:	1 2			
Case 2:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			

2. MERGER OF SCHOOLS

WORKSHEET!
FOR EVERY INCORPORATED SCHOOL WHERE THE
EDUCATION IS CONTINUED!

k7. Have any schools been merged since the 2005/2006 academic year?

1 – yes

Cross-check with the WORKSHEET!

2 – no



GO TO **k13**

k8. How many cases are there?

cases

Fill out new section for every merger!
In the questionnaire you find enough space for only a few cases. For more cases
use supplementary sheets!
Important: Every case is about only one merger!

1. CASE, MERGER OF SCHOOLS

k9. a. Please, give some details of the merger!

a. Incorporated school, ID number	b. Address	c. Year of the merger? /..... academic year	d. Host school(s)?		
			ID number	Short name!	Address

k10. a. What was the reason behind the decision of the merger of these schools?

.....

.....

k11. a. About what percentage of students in the incorporated school was SEN/multiple disadvantaged/Roma/high ability student before the merger? Do you remember the share of these certain group of students?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

k12. a. About what percentage of students in the host school was SEN/multiple disadvantaged/Roma/high ability student before the merger?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

2. CASE, MERGER OF SCHOOLS

k9. b. Please, give some details of the merger!

a. Incorporated school, ID number	b. Address	c. Year of the merger? /..... academic year	d. Host school(s)?		
			ID number		

k10. b. What was the reason behind the decision of the merger of these schools?

.....

.....

k11. b. About what percentage of students in the incorporated school was SEN/multiple disadvantaged/Roma/high ability student before the merger? Do you remember the share of these certain group of students?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

k12. b. About what percentage of students in the host school was SEN/multiple disadvantaged/Roma/high ability student before the merger?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Resolution on merger of schools				
Case 1: <i>Write the name here!</i>	1 2			
Case 2:	1 2			
Council action plan for operating and developing the local school system				
Case 1:	1 2			
Case 2:	1 2			
Action plan of equal opportunities in public education				
Case 1:	1 2			
Case 2:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			

3. CHANGING OF SCHOOL PROVIDER

EVERY CASE!

k13. Has any municipal school been transformed into parochial or not for profit private school since the 2005/2006 academic year?

1 – Yes

Consider only changes where **municipal school has been transformed into parochial or not for profit private school.**

2 – No



GO TO k20

k14. How many such transformation are there?

cases

Fill out new section for every case!
In the questionnaire you find enough space for only a few cases. For more cases
use supplementary sheets!
Important: Every case is about only one changing of school provider!

1. CASE, CHANGING OF SCHOOL PROVIDER

k15. Please, give some details of the transformation!

a. ID number of the school	b. Address	c. Year of the transformation?
	/..... academic year

k16. About what percentage of students in this school was SEN/multiple disadvantaged/Roma/high ability student before the transformation? Do you remember the proportion of these certain group of students?

a. SEN students?	%
b. Multiple disadvantaged students?	%
c. Roma students?	%
d. High ability students?	%

k17. Can you summarize in a few words what was the goal of the transformation?

.....

.....

k18. Did you make a public education contract with the new educational providers?

- 1 – Yes
- 2 – No

k19. Please tell me on a score of 1-5 how much has the municipality's expectation about the changing of school provider realized? (5 = absolutely, 1 = not at all)

not at all
absolutely

1
2
3
4
5

DOCUMENTS

Type	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Relevant public education contracts (PEC)	1 2			
The local council's resolution on the transformation of the municipal school	1 2			

4. ESTABLISHMENT OF NON-MUNICIPAL SCHOOLS

EVERY CASE!

k20. Has any new non-municipal school been established since the 2005/2006 academic year? (The question is not on changing of school provider!)

1 – Yes

2 – No →

k21. How many non-municipal schools have been established?

school(s)

Fill out new section for every case!
In the questionnaire you find enough space for only a few cases. For more cases
use supplementary sheets!
Important: Every section is about only one case!

1. CASE, ESTABLISHMENT OF NON-MUNICIPAL SCHOOLS

k22. a. Please, give some details of the establishment!

a. ID number of the school	b. Address	c. First year of education?
	/..... academic year

k23. a. Did you make a public education contract with the educational providers?

- 1 – Yes
- 2 – No

k24. a. Did the local council support the establishment of this school with...?

- 1 – financial support (operation costs)
- 2 – providing building
- 3 – discount rent of school building
- 4 – financial support for investments

MULTIPLE ANSWERS ARE ALLOWED!

2. CASE, ESTABLISHMENT OF NON-MUNICIPALITY SCHOOLS

k22. b. Please, give some details of the establishment!

a. ID number of the school	b. Address	c. First year of education?
	/..... academic year

k23. b. Did you make a public education contract with the educational providers?

- 1 – Yes
- 2 – No

k24. b. Did the local council support the establishment of this school with...?

- 1 – financial support (operation costs)
- 2 – providing building
- 3 – preferential rent of school building
- 4 – financial support for investments

MULTIPLE ANSWERS ARE ALLOWED!

DOCUMENTS

Type	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Relevant public education contracts (PEC)				
Case 1:	1 2			
Case 2:	1 2			
Resolution/draft resolution on the support/financial aid of the new parochial or not for profit private school				
Case 1:	1 2			

Case 2:	1	2		
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5. COOPERATION WITH NON-MUNICIPAL SCHOOLS

EVERY CASE!

There are cities where most of the high-ability and/or well-to-do students study in non-municipal schools, so municipal public schools have to deal with the education of disadvantaged students (SEN, multiple disadvantaged, Roma students). On the other hand in some cases non-municipal schools try to enroll these groups of disadvantaged students.

k25. a. Is there any non-municipal school in the town where the proportion of **high ability students** is significantly different (higher or lower) from the average of the town? If there are more than three such schools, please, consider those three schools where the difference is the greatest.

0 – there is no such school →

GO TO k25. c.

CHECK THE WORKSHEET!

Proportion of high ability students:	1 – higher	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:
	2 – lower	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:

k25. b. Did you make/modify a public education contract with the educational providers to ensure proper representation of **high ability students** (to converge their proportion to the average of the town) in the school?

	ID number	Did you make/modify a public education contract?	Does the contract explicitly refer to this group?	Year of the contract
1. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
2. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
3. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	

k25. c. Is there any non-municipal school in the town where the proportion of **Roma students** is significantly different (higher or lower) from the average of the town? If there are more than three such schools, please, consider those three schools where the difference is the greatest!

0 – there is no such school



GO TO **k26. a.**

Proportion of Roma students:	1 – higher	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:
	2 – lower	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:

k25. d. Did you make/modify a public education contract with the educational providers to ensure proper representation of **Roma students** (to converge their proportion to the average of the town) in the school?

	ID number	Did you make/modify a public education contract?	Does the contract explicitly refer to this group?	Year of the contract
1. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
2. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
3. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	

k26. a. Is there any non-municipal school in the town where the proportion of **multiple disadvantaged students** is significantly different (higher or lower) from the average of the town? If there are more than three such schools, please, consider those three schools where the difference is the greatest!

CHECK THE WORKSHEET!

0 – there is no such school → GO TO THE DOCUMENTS
OR TO **k27**

Proportion of multiple disadvantaged students:	1 – higher	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:
	2 – lower	ID number of the school:	Address:
		ID number of the school:	Address:
		ID number of the school:	Address:

k26. b. Did you make/modify a public education contract with the educational providers to ensure proper representation of **multiple disadvantaged students** (to converge their proportion to the average of the town) in the school?

	ID number	Did you make/modify a public education contract?	Does the contract explicitly refer to this group?	Year of the contract
1. School		1 – Yes GO TO THE NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
2. School		1 – Yes GO TO NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	
3. School		1 – Yes GO TO NEXT! 2 – No, the provider refused 3 – No, because of other reason	1 – Yes 0 – No, because:.....	

DOCUMENTS

Type	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Relevant public education contracts (PEC)				
ID number of the school:	1 2			
ID number of the school:	1 2			
ID number of the school:	1 2			
Other:				
ID number of the school:	1 2			
ID number of the school:	1 2			
ID number of the school:	1 2			

6. REDUCING THE NUMBER OF SCHOOL DISTRICTS ON A LARGE SCALE

EVERY CASE!

k27. How many school districts are there in the town at the moment?

district(s)

k28. How many school districts were there in the town in the 2005/06 academic year?

district(s)

k29. Was there any change since the 2005/2006 academic year when the number of school districts has been **reduced by more than 50%**?

1 – Yes

2 – No →

k30. What was the reason of this change?X

.....

.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Resolutions on reducing the number of school districts	1 2			
Council action plan for operating and developing the local school system	1 2			
Action plan of equal opportunities in public education	1 2			
Other:	1 2			

7. MERGING SCHOOL DISTRICTS OR MODIFYING SCHOOL DISTRICTS' BOUNDARIES

Beyond the previous transformation on a large scale!

k31. Have school districts been significantly modified/merged since the 2005/2006 academic year (beyond the previous changes)?

1 – yes

2 – no →

k32. How many significant modifying/merger have been in the town?

1. CASE, MERGING SCHOOL DISTRICTS OR MODIFYING SCHOOL DISTRICTS' BOUNDARIES

k33. a. Which school(s) were involved?

School(s)		
ID number	Short name	Address

k34. a. Before what academic year did it happen?

...../..... academic year

k35. a. What was the reason of it?X

.....

k36. a. Modifying school districts in itself do not change the school choice decision of parents. Did you support these decisions with any programs?

1 – Yes \longrightarrow

k36a.a. What were these programs? X

.....

2 – No

2. CASE, MERGING SCHOOL DISTRICTS OR MODIFYING SCHOOL DISTRICTS' BOUNDARIES

k33. b. Which school(s) were involved?

School(s)		
ID number	ID number	ID number

k34. b. Before what academic year did it happen?

...../..... academic year

k35. b. What was the reason of it?X

.....

k36. b. Modifying school districts in itself do not change the school choice decision of parents. Did you support these decisions with any programs?

1 – Yes \longrightarrow

k36b.a. What were these programs? X

.....

2 – No

3. CASE, MERGING SCHOOL DISTRICTS OR MODIFYING SCHOOL DISTRICTS' BOUNDARIES

k33. c. Which school(s) were involved?

School(s)		
ID number	ID number	ID number

k34. c. Before what academic year did it happen?

...../..... academic year

k35. c. What was the reason of it?X

.....

k36. c. Modifying school districts in itself do not change the school choice decision of parents. Did you support these decisions with any programs?

1 – Yes \longrightarrow

k36c.a. What were these programs? X

.....

2 – No

DOCUMENTS

Type	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Resolution on modifying school districts				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Council action plan for operating and developing the local school system				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Action plan of equal opportunities in public education				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Documents on the supporting programs				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			

8. KINDERGARTEN PLACES IN THE TOWN

There are many towns where kindergarten places are in short supply.

k37. What do you think are kindergarten places in your town in short supply?

- 1 – Yes
- 2 – No

k38. Please help me fill out this table!

1 – Number of kindergarten places in the town:places

2 – Number of children who are old enough to attend kindergarten:
: children

3 – Number of local children who attend kindergarten: children

4 – Number of **non-local children** who attend kindergarten:..... children

5 – Number of local children who cannot enroll because of shortage of
places: children

k39. Is there any plan to create new kindergarten places?

- 1 – Yes
- 2 – No, there are shortage, but the application rates are not high
- 3 – No. there are other priorities.
- 4 – No, the running cost would be too high.

**ONLY 1 ANSWER,
THE MOST RELEVANT!**

IF k39=1!

k40. Where do you stand now in the implementation process of this plan?

- 1 – (Re)construction is under way
- 2 – Detailed plan and the necessary financial sources are available
- 3 – Applying for financial support.
- 4 – Have not applied for financial support yet

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Plans, tenders on enlargement/development of kindergartens	1 2			
Council action plan for operating and developing the local school system:	1 2			
Action plan of equal opportunities in public education	1 2			

Other:	1 2			
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II. EDUCATION OVERVIEW: SPECIAL GROUPS OF STUDENTS

II.I. HIGH ABILITY STUDENTS

9. ELITE SCHOOLS IN THE TOWN

k41. Is there any municipal school in the town where the number of applicants was exceptionally high in the last 5 years? X

1 – Yes

CROSS-CHECK WITH THE DATASHEET!

2 – No



GO TO **k48**

k42. How many such schools are there?

Small towns: consider only a couple of schools (not all of them)
Big towns: consider maximum 5 schools!

1. CASE, ELITE SCHOOLS IN THE TOWN

k43. a. School ID, Name:

ID number	Short name	Address

k44. a. We already have information about this school, but we don't know the enrollment process. How does this school screen the applicants? X

MULTIPLE ANSWERS ARE ALLOWED!

- 1 – First-come, first-admitted basis.
- 2 – Preference for disadvantaged, non-local students
- 3 – Lottery among non-local applicants
- 4 – Admission is based on details, family background is considered
- 5 – Kindergarten-school path (the admission is an automatically ensured from certain kindergarten)
- 6 – Interview.
- 7 – Admission is based on skills or test scores.

k45. a. Has this process changed over the last 5 years?

- 1 – Yes \longrightarrow **k45a.a.** How? _____ Codes from the previous question!
- CODE \longrightarrow CODE
- 2 – No

If k45=1!

k46. a. Is this change of the admission process are supported/initiated by the municipality?

- 1 – Yes
- 2 – No

IF K46=1!

k47. a. Why did you consider the change of the admission process important?

.....

.....

.....

2. CASE, ELITE SCHOOLS IN THE TOWN

k43. b. School ID, Name:

ID number	Short name	Address

k44. b. We already have information about this school, but we don't know the enrollment process. How does this school screen the applicants? X

MULTIPLE ANSWERS ARE ALLOWED!

- 1 – First-come, first-admitted basis.
- 2 – Preference for disadvantaged, non-local students
- 3 – Lottery among non-local applicants
- 4 – Admission is based on details, family background is considered
- 5 – Kindergarten-school path (the admission is an automatically ensured from certain kindergarten)
- 6 – Interview.
- 7 – Admission is based on skills or test scores.

k45. b. Has this process changed over the last 5 years?

- 1 – Yes \longrightarrow **k45b.a.** How? _____ Codes from the previous question!
- CODE \longrightarrow CODE
- 2 – No

if k45=1!

k46. b. Is this change of the admission process are supported/initiated by the municipality?

- 1 – Yes
- 2 – No

IF K46=1!

k47. b. Why did you consider the change of the admission process important?

.....

.....

.....

3. CASE, ELITE SCHOOLS IN THE TOWN

k43. c. School ID, Name:

ID number	Short name	Address

k44. c. We already have information about this school, but we don't know the enrollment process. How does this school screen the applicants? X

MULTIPLE ANSWERS ARE ALLOWED!

- 1 – First-come, first-admitted basis.
- 2 – Preference for disadvantaged, non-local students
- 3 – Lottery among non-local applicants
- 4 – Admission is based on details, family background is considered
- 5 – Kindergarten-school path (the admission is an automatically ensured from certain kindergarten)
- 6 – Interview.
- 7 – Admission is based on skills or test scores.

k45. c. Has this process changed over the last 5 years?

- 1 – Yes \longrightarrow **k45c.a.** How? _____ Codes from the previous question!
- CODE \longrightarrow CODE
- 2 – No

if k45=1!

k46. c. Is this change of the admission process are supported/initiated by the municipality?

- 1 – Yes
- 2 – No

IF K46=1!

k47. c. Why did you consider the change of the admission process important?

.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Documents on the selection forms				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Council action plan for operating and developing the local school system				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Action plan of equal opportunities in public education				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			

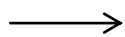
10. ABILITY TRACKING

DATASHEET!
ADVANCED CLASSES COLUM: CODE 4,5,7!

Let's see the schools with advanced language, science, humanities courses which give an advantage in the enrollment in secondary education!

k48. In which schools are there advanced classes? (Consider Datasheet-Schools worksheet row 31-33. - code 4, 5, 7.)

0 – There is no such school



GO TO k51

Schools			
	ID number	Short name!	Address
1. case			
2. case			
3. case			
4. case			
5. case			

1. CASE, ABILITY TRACKING

k49. a. Do students from the surrounding villages attend in advanced class(es)?

1 – Yes \longrightarrow **k49a.a.** About what percentage of students in the advanced class(es) is non-local?

%

2 – No

k50. a. How does the school screen the applicants for these advanced class(es)?

- 1 – First-come, first-admitted basis
- 2 – Interview
- 3 – Admission is based on skills or test scores
- 4 – Other form of screening (write in):

2. CASE, ABILITY TRACKING

k49. b. Do students from the surrounding villages attend in advanced class(es)?

1 – Yes \longrightarrow **k49b.a.** About what percentage of students in the advanced class(es) is non-local?

%

2 – No

k50. b. How does the school screen the applicants for these advanced class(es)?

- 1 – First-come, first-admitted basis
- 2 – Interview
- 3 – Admission is based on skills or test scores
- 4 – Other form of screening (write in):

3. CASE, ABILITY TRACKING

k49. c. Do students from the surrounding villages attend in advanced class(es)?

1 – Yes \longrightarrow **k49c.a.** About what percentage of students in the advanced class(es) is non-local?

%

2 – No

k50. c. How does the school screen the applicants for these advanced class(es)?

- 1 – First-come, first-admitted basis
- 2 – Interview
- 3 – Admission is based on skills or test scores
- 4 – Other form of screening (write in):

DOCUMENTS

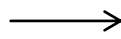
Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Documents on the selection forms				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Council action plan for operating and developing the local school system				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Action plan of equal opportunities in public education				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			

11. PRIVATE (“HOME SCHOOLED”) STUDENTS

The issue of “home schooled” students is related on the one hand to high ability students, on the other hand to multiple disadvantaged students. Let’s talk about it.

k51. How many “home schooled” students are in the town?

0 – there is not any “home schooled” student



GO TO k56

“home schooled” students

k52. About what percentage of “home schooled” students are overage and/or conduct disorder?

%

k53. Is it a problem your administration should handle? Was it on your agenda in the last 5 years?

- 1 – Yes
- 2 – No

IF k53=1!

k54. What were the most important decisions? X

.....

.....

.....

k55. Is there cooperation between the schools and the child welfare service?

- 1 – Yes, the cooperation is good
- 2 – There is cooperation, but it has to be improved
- 3 – There is not cooperation
- 4 – The municipality does not intervene in the cooperation between the schools and the child welfare service

DOCUMENTS

Name	1 – Paper	2 - Electronic	Page	Waiting for it	Received
Resolution(s) on the programs dealing with private students	1	2			
Program documents	1	2			
Council action plan for operating and developing the local school system	1	2			
Action plan of equal opportunities in public education	1	2			
Other:	1	2			

II.II. MULTIPLE DISADVANTAGED AND ROMA STUDENTS

12. THE PROBLEM OF REGISTRATION OF STUDENTS WITH “MULTIPLE DISADVANTAGES”

Parents of multiple disadvantaged children have the right to receive financial subsidy for schooling the children. To this a registered multiple disadvantaged status is necessary. However, the statistics show that it is likely that many students with multiple disadvantages are not registered.

k56. Is it likely that many students with multiple disadvantages are not registered in the town?

1 – Yes

2 – No → GO TO k58

K56. a. About what percentage of students with multiple disadvantages do you think are not registered?

%

k57. What do you do to solve this problem? X

.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Local council resolution (draft resolution) on the programs	1 2			
Other:	1 2			

13. PARTICIPATION OF MULTIPLE DISADVANTAGED AND ROMA CHILDREN IN KINDERGARTENS

Numerous studies found that one of the reasons for lower academic performance of multiple disadvantaged and Roma students is the unsatisfactory participation in kindergartens (low enrollment rate before the age of 5, absenteeism).

k58. Is the low participation of Roma children in kindergartens a problem in your town?

1 – Yes

2 – No \longrightarrow GO TO **k60**

k59. Do you have any program or initiative to solve this problem?

1 – Yes \longrightarrow **k59.a.** What kind of programs are these? X

.....

.....

.....

2 – No, because: X **k59.b.**.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Documents on programs/initiatives	1 2			
Other:	1 2			

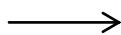
14. EDUCATIONAL PEER EFFECTS AND THE MULTIPLE DISADVANTAGED STUDENTS

Let's see the municipal schools in the town where the proportion of multiple disadvantaged and Roma students is significantly lower than the average of the town?

k60. Which are these schools?

BASED ON THE DATASHEET!

0 – There is no such school



GO TO **k63**

Schools		
ID number	Short name!	Address

k61. How many such schools are there?

school(s)

In these schools it could be beneficial to increase the share of multiple disadvantaged/Roma students because of the advantage from more interactions with higher achieving peers.

k62. What can you do for enhancing the proper representation of Roma students? X

ID number	a. What can you do?	b. What have you done?

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Local council resolution (draft resolution) on the programs				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Programs reports				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			

15. SCHOOLS FOR THE ROMA STUDENTS

k63. Is there any school for the Roma in the town, where the share of Roma students is exceptionally high?

BASED ON THE DATASHEET!
“School for the Roma”: share of Roma students is over 40%!

0 – There is no such school → GO TO **k69**

Schools for the Roma			
	ID number	Short name!	Address
1.case			
2.case			
3.case			
4.case			
5.case			

k64. How many such schools are there?

school(s)

Case 3:	1	2		
---------	---	---	--	--

16. EDUCATION FOR THE MULTIPLE DISADVANTAGED STUDENTS OUTSIDE THE CITY

EVERY AGREEMENT
about organizing education for the
multiple disadvantaged/Roma students
outside the city!

k69. Is it typical that the multiple disadvantaged/Roma students study outside the city? (not SEN students!)

1 – Yes

2 – No →

GO TO **k74**

k70. Is there any agreement with other town on organizing education for the multiple disadvantaged/Roma students outside the city?

1 – Yes

2 – No

[IF k70=1!]

k71. How many agreements are there?

1. agreement Town with which the agreement is:

2. agreement Town with which the agreement is:

3. agreement Town with which the agreement is:

.....

1. AGREEMENT, EDUCATION FOR THE MULTIPLE DISADVANTAGED STUDENTS OUTSIDE THE CITY

k72. a. What was the reason for this agreement?X

.....
.....
.....

k73. a. Do you help the student to travel to the school?

- 1 – Providing/supporting school bus
- 2 – Discount travel, financial support
- 3 – Other (write in):



2. AGREEMENT, EDUCATION FOR THE MULTIPLE DISADVANTAGED STUDENTS OUTSIDE THE CITY

k72. b. What was the reason for this agreement?X

.....
.....
.....

k73. b. Do you help the student to travel to the school?

- 1 – Providing/supporting school bus
- 2 – Discount travel, financial support
- 3 – Other (write in):



3. AGREEMENT, EDUCATION FOR THE MULTIPLE DISADVANTAGED STUDENTS OUTSIDE THE CITY

k72. c. What was the reason for this agreement?X

.....
.....
.....

k73. c. Do you help the student to travel to the school?

- 1 – Providing/supporting school bus
- 2 – Discount travel, financial support
- 3 – Other (write in):

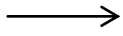
DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Agreement(s)				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			
Other:				
Case 1:	1 2			
Case 2:	1 2			
Case 3:	1 2			

17. PARTICIPATION IN SCHOOL INTEGRATION PROGRAMS AND SUPPORT

k74. Have the city participated in school integration programs in the last 5 years?

1 – No



GO TO k77

2 – Yes, integration programs and support

3 – Yes, integration programs and support AND EU grants: HEF OP 2.1.3; 2.1.5; 2.1.5b; 2.1.7; 2.1.8, TÁM OP from 3.3.2 to 3.3.5

IF k74=3!

k75. Which grants did you get?X

1. **Number:**.....**Date:**

2. **Number:**.....**Date:**

3. **Number:**.....**Date:**

IF k74=2 or k74=3!

k76. What share of schools has involved in integration support programs?

1 – All of them,

2 – 50% or more,

3 – less than 50%.

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
OOIH agreements of cooperation	1 2			

II.III. STUDENTS WITH SPECIAL EDUCATIONAL NEEDS (SEN)

18. EDUCATION OF STUDENTS WITH SPEICAL EDUCATIONAL NEEDS

k77. Please, help us to fill out the table below! We ask you about the **moderately mentally disabled students**.

Academic year	Number of moderately mentally disabled students in the town	Number of moderately mentally disabled students who are educated		
		Integrated	In special (remedial) classes	In special schools
2005/2006				
2010/2011				

k78. Has the education of the moderately mentally disabled students significantly changed since the 2005/2006 academic year?

0 – No

1 – Special (remedial) class has been **established**

2 – Special (remedial) class has been **closed**

3 – Special (remedial) school has been **closed**

4 – Special (remedial) school has been **established**

5 – Integrated education started in some schools

6 – Other (write in):

TÖBB VÁLASZ LEHET!

In the last years the integrated education of SEN students was one of the main priorities of the educational policy.

k79. Is there any school which is participated in any SEN integration programs?

1 – Yes

2 – No

k79.a. Please, give us some details of these programs! What was the reason behind them? X

.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic		Page	Waiting for it	Received
	1	2			
(Draft) Resolution(s) on the programs of integrated/segregated education	1	2			

Council action plan for performing tasks and operating and developing a network of institutions	1	2			
--	---	---	--	--	--

19. RESTRICTING THE PRACTICE OF CLASSIFYING STUDENTS INTO SEN STATUS EXCEEDINGLY

According to the figures the proportion of students with special educational needs are above the EU average.

k80. Do you have any program for reducing the classification of students into SEN status exceedingly? X

- 1 – Yes
- 2 – No

k80.a. If you have, please, give some details of these! If you do not have any programs, we also would like to know your opinion about this issue! X

.....

.....

.....

DOCUMENTS

Name	1 – Paper 2 - Electronic	Page	Waiting for it	Received
Resolution(s) on the programs	1 2			

END OF INTERVIEW:

2011. month day hour min