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## Abstract

This study observes - concerning the Hungarian relations - the diverse interactions of disadvantaged rural areas' problems, spatial dissensions of education system and internal migration. Problems are investigated primarily in the light of equal opportunities but the study discusses economic relations, too. To grab such processes numerically is very hard methodologically since the observed phenomena are really complex and there is no available individual-level data base. Thus, results of the regression analysis must be compared to the conclusions drawn from different deep interviews and literary sources.

**Keywords:** region of small villages, equal opportunities, education system, spatial mobility, internal migration

## Introduction

The starting points of my article are the two criticisms more and more frequently heard today on the subject of contemporary Hungarian society: "Hungarian society is not innovative enough" and "Hungarian society is not mobile enough" (The mobility referred to here is spatial mobility; social mobility in terms of equal opportunities etc. will be discussed later).

If we refer to the data relating to these two issues – by, for example, using numerical indicators of the number of patents granted, migration indices and so on - both hypotheses would seem to be true when viewed against similar figures relating to other societies such as West European (e. g. Archibugi – Coco 2005; Dövényi 2009).

However, I do not think it likely that the only causes of it would be the (hypothetic) inflexible attitude and the conservatism of the population. Analyzing the underlying reasons for these two problems, we need to examine, firstly, the national education system (a main factor affecting human capital) and, secondly, migration – that is, the opportunities and barriers to spatial change in terms of population.

The question is current, since the central issue of the Barca-report dealing with the renewal of EU's cohesion policy is that how the operation of EU could be more effective so that it does not interfere with equal chances and the objective of social cohesion, thereby emphasizing migration and the equal chances of children as the most important elements of cohesion policy (Barca 2009). In earlier studies, the author examined the situation in the underdeveloped, rural areas of Hungary and the opportunities of emerging in a multiply disadvantaged micro-region (that of Sásd). The conclusion was that the development of the education system, and especially of elementary and secondary school education, is probably the most decisive factor for the population of such an area (Sayed-Mohammed 2009).

Neither the long-term development of the local economy nor the migration from disadvantaged regions to advantaged ones can be imagined without well-trained human resources. By reducing the need for agricultural labor force, the need for rural labor force also decreased (Buday-Sántha 2009). By the resettlement of material- and raw material-

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intensive industries to the East, the need for low-skilled workers in the economy went down. Instead, the demand for well-trained, flexible human resources increased in the rapidly changing economic environment (Enyedi 1996).

The following article can be divided into two parts - in accordance with the two main theses. In the first chapter economic-social-spatial significance, present situation and development opportunities of education are described, while in the second one migration as an answer to regional differences and to the needs of labor market is investigated, dwelling on its development and barriers in Hungary and attempting to investigate the connection between education and migration trends concerning the rural areas of Hungary.

The article is based both on empirical studies and literary sources. In the empirical part of Chapter 1 I used the documents in connection with the control and finance of the Hungarian education system, and I made interviews with professionals dealing with education and territorial development in a disadvantaged region. In Chapter 2 - being relied on municipal level data - I observed with regression method which factors affect the birth and migration balance of small settlements, and whether it could be shown that the average level of education affects migration. I hope that this study is stimulating despite the complexity of the issue and the difficulties of the investigation methodology.

### **1.1. Economic and social role of education**

Only a few people argue that with knowledge-based society and terciarisation in economy, the significance of knowledge and other competencies in connection with working have increased (Kok 2004). However, opinions are very different about the roles of education. One extreme is that education is only a knowledge transfer on a high level, while the other is that education includes close-up of disadvantaged people, intermediation of culture, strengthening of local societies, and possibility of self-realization and transfer of competencies. Some people think of education as a service, which should be offered at market price. Others think that education is „investment in human capital” at state level, too.

I prefer the latter wider interpretation, but - due to world trends - I have to emphasize the significance of the transfer of useful knowledge and its contribution to equality of opportunity<sup>2</sup> (mainly in favor of segregation of people living in disadvantaged areas). The former aspect has not been argued very often since „Human Capital Theory” of T. W. Schultz (Schultz 1983). Moreover, adequate structure of education could be suitable when managing structural and regional unemployment.

According to the majority of group status studies (Andorka 1982, Róbert 1986, Tárki 2004), cultural mobility - and within it, education - plays a determinately (but not exclusive<sup>3</sup>) role in social mobility and equality of opportunity. Paying attention to my interviews, I concluded that education itself *is not able to reduce adequately* the disadvantage in chances of disadvantaged children and it does not always mean the transfer of useful knowledge. The next point below is dealing with the causes of this.

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<sup>2</sup> We have to emphasize that equality of opportunity is not the same as equality of incomes. It means that origin of somebody should not be a decisive factor – in other words, everyone should get the chance to change his life. Objectives like reducing the disadvantages in chances and the spatial differences are very important ones of the European Union - and the Hungarian public also deals with these issues.

<sup>3</sup> According to Halsey (1972), the social status of parents has a big influence on children’s studies, so education itself is not the primary determinative factor considering social status, it only intermediates the better social status. Moreover, according to Bourdieu (1978) contemporary culture of French schools equals to the culture of privileged groups of society - thereby their children are in beneficiary position. As a result, education system conserves social differences, giving it to future generations as heritage.

## 1.2. Situation of the Hungarian public education and its awkwardnesses in disadvantaged regions

Under „Hungarian public education” we mean elementary and secondary education. One of its spatial features is that even in settlements having small population elementary and secondary schools are operating (former ones even in settlements having less than 1000 inhabitants, latter ones in settlements having 4-5000 inhabitants) (Annex 1)<sup>4</sup>. Therefore, the problems of disadvantaged areas with small villages combine with the awkwardnesses of education in some regions of Hungary (mainly in South-Transdanubia and in the North-Hungarian region). The effects of these two strengthen each other throughout institutional-financial system of education and social-economic situation of the students.

The conclusions of the next point are based on legislation, statistical data, literary sources and the experiences of ten deep interviews made in the summer of 2008 with professionals and leaders of education and territorial development in a small disadvantaged area (micro-region of Sásd) (Annex 2).

In multiply disadvantaged areas like the micro-region of Sásd, the problem is not only the fragmented spatial structure of the settlements, the heavy accessibility resulting from this and the poor institutional background. It is a significant problem, too, that these regions are very far from the country’s development axis and also far from urban agglomeration (Annex 3). As a result, significant number of people is unemployed in these areas, many of them totally eliminated from labor market. Younger, better-skilled people move to other regions in quite a big ratio, their properties become undervalued and often bought by impoverished persons being on the periphery of the society.<sup>5</sup> Therefore - mainly resulting from children’s disadvantages in socialization -, a kind of segregation has started in case of some village schools. A part this new generation has parents being dropped from labor market - making child poverty, deviant behavior (gambling addiction, alcoholism etc.) common phenomena. This reference group (family and urban environments) has negative effects considering the socialization of children. The performance of such a child reduces and his behavior becomes worse, thereby forcing pedagogues to work even harder.

According to the interviews, this phenomenon is particularly frequent among Roma families, but we can experience it in other (usually deprived) families, too. The problem is further intensified by the demographic features - different from mainstream society - of the Roma families: early family formation and high number of children. The disadvantages in chances could only be compensated by a perfect elementary and secondary education structure, but - considering competency tests (e.g. Bodor 2006) - it is not common in these regions. It leads to further disadvantages on labor market, causing permanent unemployment - and the „vicious circle” is closed (Annex 4).

The problem is complex and many factors are difficult to quantify (e.g. disadvantages in socialization), so I did not undertake to produce a complex model - however, some interrelations (easy to quantify) are investigated with regression method in point 2.4. Instead, I publicize some institutional-financial problems in public education which - in my point of view - further complicate the present situation.

The biggest part of elementary and secondary schools have been operating as municipal fiscal organs in Hungary since the change of the regime (Annex 5), therefore having incomes

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<sup>4</sup> *1st annex* shows the fragmentation of spatial structure and the institutional fragmentation in elementary education in the two regions mentioned above - as the „control group” I show data of the Northern Great Plain consisting mainly of bigger settlements.

<sup>5</sup> Target areas of social migration (poorer families’ removal in the hope of cheaper cost of living) and suburbanization (removal of the well-to-do for more peaceful and cleaner environment) are usually well separated from each other (Beluszky-Sikos-T. 2007).

from two main sources: normative state subventions - about the same amount of money per student - and municipal support depending strongly on the situation - amount of incomes and expenditure - of the local government in the given settlement (local government act 1990). Moreover, in certain cases the poorest local governments regroup a part of the normative subvention to other (not educational) objectives (Varga 2009). In principle, expenditures consist of operational (e.g. wages of pedagogues, tool procurement) and accumulative (e.g. institutional enlargement) ones. However, the lack of monetary resources make it possible for poorer local governments to cover only *operational expenses* or only *part of these* in many cases. Sometimes sources can be completed with the help of applications, but liquidity of schools are also destroyed by the fact that these sources are usually post-financed ones.

So, financial problems occur in regions which are mostly in need of good-quality education, in order to compensate the disadvantages coming from socialization - thereby making close-up possible. Available resources here are not only less in absolute value than in areas having better social composition, but the extent of differences is even bigger „relatively” if considering duties not performed.

Professional considerations are often retarded by the fact that *council board members* in case of schools financed by local governments exert influence on control (e.g. employers’ rights, appointment of institutional leaders, supervision of actions, right to force people report and right to give instructions) (Law on financial bodies 2008). However, time capacity of this organ is not always enough to complete tasks like these and in certain cases, the lack of competences is also a problem.

Fragmentation of the institutional system and the mentioned social and financial inequalities lead to a high-level heterogeneity of educational standards. It is aggravated by the fact that there is no systematic, uniform, outer professional evaluation and control. The profession is about to standardize neither the educational methods<sup>6</sup>, nor the contents of the subjects<sup>7</sup>. This is illustrated by the example of quality: though, it has been being compulsory to operate some kind of quality management system since 2000, the type of this system is various in the different institutions. Therefore, we cannot speak about a unified quality assurance system. In practice, it often occurs that the main points of quality management approach - which would be assessment, optimization, control and if needed, correction (feedback mechanism) of resources needed in the workflow, and not only documentation (creating records) - do not prevail.

Interviews made in the micro-region of Sásd show that behavioral problems of students often occur as well as the fact that pedagogues in such situations do „not have word”, since parents and school leaders do not co-operate with them (it has been argued three times). According to the data of the public education development plan of Sásd micro-region (Bodor 2006), results of competency tests in the given school move together with the ratio of disadvantaged students, from which we can conclude that socialization is mainly determined by the family - children spend little part of the time in schools, and that is why education cannot play determinately role in close-up. During the interviews it was repeatedly stated that relationship between disadvantaged situation and Roma origin is frequent, which seems to be strengthened by local data showing that social securities and origins of the inhabitants in the micro-region move together (6th annex). However, the subjects emphasized that these problems are specific not only in Roma families and that „not Roma issue but poverty exists” in Hungary.

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<sup>6</sup> Although, National Core Curriculum of basic education has been existing since 2003, it is only a syllabus within bounds and therefore, it gives big freedom to local plans in education.

<sup>7</sup> The List of textbooks in public education (2010/2011) contains a concise list on 1,084 pages (Source: Ministry of Education and Culture 2010 <http://www.okm.gov.hu/tankonyvjegyzek/aktualis/kozokttankonyvjegyzek.pdf> ).

### **1.3. Expected consequences of the expansion of higher education**

Of course, there is no higher education in small villages and towns, but we must investigate if qualification could be an outbreak point for the people of disadvantaged regions.

Before the political system changed in Hungary, elite education had been going on at universities and colleges. It means that only 4-5% of the given age-group could enter higher education - with very strict entry requirements (Andorka 1982). Among others, it also plays a role in the fact that in settlements of South-Transdanubia having a population of less than 1000 people the rate of people with academic qualification is 2,5% in average (KSH 2009). Urban disadvantages also contribute to this, leading to migration of the intellectuals into cities.

However, considering the 18-25 year-old generation we can speak about mass education (expansion), since 46,6% of them studied in higher education in 2005 (Kozma 2008). It is often the subject of debates, whether the national economy would need so many graduates or not. In reality, the need for highly qualified people has increased together with the tertiarization in economy, the pushing forward of lifelong learning and the expansion of secondary education (Davidson - Schleicher 2008) - and both the qualification structure of the unemployed and the different status group studies show that graduates can be more successful on the labor market and in the society than the lower-skilled classes. If the ratio remains unchanged, the rate of graduates considering the whole society (every age-group) will be high over time - so the „oversupply of graduates” will be reality.

A further problem is that in the input part of higher education general teaching dominates; therefore specialization is postponed in time. As a result, graduates are older when they appear on the labor market and both the concerned young people and the parents' generation are to bear the opportunity cost of it. And if the number of classes - required for filling positions - increases, it seemingly will lead to a worse situation of the children of the poor - in many cases, villager - but talented people. Thus, in my opinion, secondary education should be strengthened to reduce that cost. For this, it would be inevitable to increase the standard of education concerning the whole education system.

Together with numerical expansion, entry requirements have decreased, thereby leading to the deterioration of quality in higher education. It is further intensified by the mentioned heterogeneity of output in secondary education and by the lack of an independent, outer control in higher education, too (Barakonyi 2009). And the normative support system of students in higher education (and in case of tuition fee paying courses, the tuition fee) impedes quality selection.

### **1.4. Some development alternatives in Hungarian education system**

Which institutional-financial changes could enhance the improvement of educational quality and its contribution to the realization of equal opportunities?

Relying on the financial-management problems mentioned above it seems obvious to conclude that management and finance of public education should be sent to a higher level - instead of local one - which would be able to equalize the various financial positions of schools in different villages (Varga 2009). I believe that this should be regional (NUTS 2) level (at the very least) or an even bigger territorial unit. (The differences are big between NUTS 2 and NUTS 3 regions and these differences affect the finance of institutions throughout local taxes and social payments, to say nothing of LAU 1 micro-regional level.) The harmonization of educational institutions' activities with each other and with the needs of

labor market would be beneficial as well as the strengthening of regional planning in public education.

In my opinion, elementary schools (in many cases, with 4 or 6 grades or with consolidated grades) of segregated settlements - having inadequate standard in education - should be eliminated and instead, teaching of students should be provided by larger settlements<sup>8</sup>. Otherwise, law makes it possible (Public education act). However, if such measurements are taken, these should be based - as well as the outer control of educational quality - on nationwide uniform criteria, taking as much factors as possible into consideration. It would be inevitably important to solve the problem of travelling (e.g. with school buses financed by more settlements<sup>9</sup>).

Appropriate afternoon activities and daycare centers are also able to reduce social disadvantages, but they are not available within each settlement. Moreover, it would seem a clever idea to me if the number of beds for multiply disadvantaged children in students' hostels were increased - complemented with benefits in kind, starting even with lower school students.<sup>10</sup> However, many believe that it would disrupt the family unit, as it has been revealed in the interviews. In my opinion, however, these kinds of programmes could prevent certain social classes from dropping soon, and I am afraid that trends began will grow into unstoppable, self-excitation processes in the lack of overall educational- and social-political measures.

## **2.1. Possible social-economic effects of migration**

Migration at individual level - similar to education - is usually a kind of investment in human capital; a decision, from which people want costs to be recovered in the long run (Schultz 1990). However, opinions are different whether the phenomenon is beneficial at public level or not.

Costs of migration are mainly the expenses in connection with buying, building or renting a home (and the price differences in comparison with the original place of residence). In case of job related migration, the return of the investment comes from the higher income in the target area while in case of housing related migration the determinatory factor is the extra utility of the living environment (Walker 2006). Of course, other reasons can also contribute to the decision of removal - reasons like education related migration or the phenomenon when poorer urban classes move to rural areas because prices of properties are cheaper as well as (in many cases just thought)<sup>11</sup> costs of rural life. In my opinion, it cannot be considered as an investment in human capital. Indeed, it is a stopgap, an attempt to reduce and cover the costs of living - which is, unfortunately, quite frequent in case of cheap properties of small Hungarian villages.

In my opinion, among these forms social policy should stressed focus on work-related migration since it could contribute to the management of structural and regional problems of labor market and to the facilitation of entering work in the most disadvantaged regions (if the

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<sup>8</sup> For example, in Sásd micro-region - in Baranyajenő - a school was closed in September 2008. In this school, the rate of disadvantaged students was 86% and within it 50% was multiply disadvantaged - which caused a significant fall in the quality of education. Even before the school of Baranyajenő was closed, well-to-do parents had sent their children to the elementary school of Sásd, which is the centre of the micro-region and is just 5 kilometers far from Baranyajenő.

<sup>9</sup> Such measurements have contributed to the close-up of Afro-American children in the USA since the 1950s (Orfield 1999).

<sup>10</sup> For example, in Sásd micro-region there is no students' hostel - neither for secondary, nor for primary schools.

<sup>11</sup> Moreover, certain authors state that also in case of job related migration, migrators decide mainly on the basis of expected, estimated wage-level. According to the Harris-Todaro model, they also take the (estimated) probability of getting work in the city into consideration (Harris-Todaro 1970).

number of jobs is not enough locally). It is possible that in case of educational development and strengthening of mobility, the number of unemployed and inactive people - nationwide - would decrease. So, budget incomes would go up, social burdens would decrease and skilled manpower could contribute to economic competitiveness, too. This approach to equal opportunities would be able to ease the contrast between the objectives of efficiency and social justice (Barca 2009).

However, the rate of internal migration is usually the greatest in countries where territorial differences are big (Mulhern 2009). In case of Hungary, developmental differences between regions are growing and the differences between levels of settlement hierarchy have been being significant since the 1960s and 1970s (Beluszky-Sikos T. 2007). Nevertheless, migration rate is really low in comparison with Europe (Dövényi 2009). As Annex 8 reveals, migration from regions having high unemployment rate to areas with stronger economy is significant - but we cannot speak about equalization.

The following section will show migration trends from the 1950s till the present. Then I will turn to analyze the causes of low migration willingness.

## **2.2. Migration trends in Hungary from the 1960s till now**

Migration in Hungary was as big as never before between the end of World War II and the beginning of the 1960s. Earlier, Hungary was described as an agricultural country. In the 20th century, huge overpopulation and poverty has come into being in agriculture which could only be absorbed by cities, as an effect of forced industrialization<sup>12</sup> in the 1950s (Dövényi 2009). At the beginning, interregional migration was typical from rural to Budapest and to industrialized cities. Later on - as a result of OTK<sup>13</sup> (1971) and rural industrialization -, intraregional migration came into focus, but the main trend remained rural to urban migration. However, the significance of country towns (in comparison with Budapest) increased.

The process was in line with the needs of labor market of the era but infrastructural development in cities followed industrialization later - and this kind of under-urbanization (lack of flats, supply difficulties) led to tensions in cities (Konrád-Szelényi 2000). In smaller settlements (areas from where people migrated) the migration of the younger, active population (labor) led to unfavorable age structure and further loss of function.

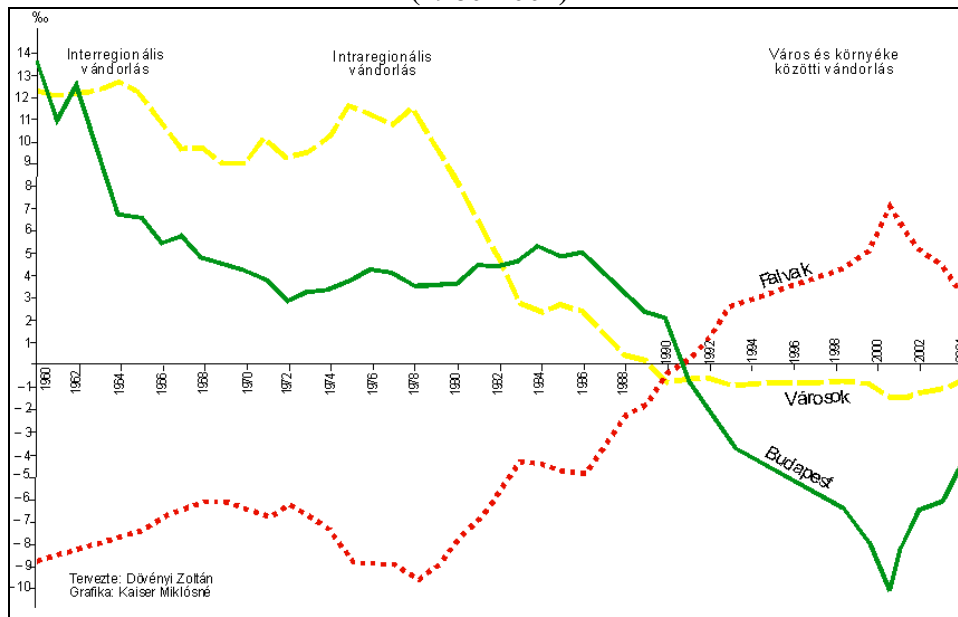
After the system had changed in Hungary, internal migration fell back parallel to the appearance of huge economic difficulties (mainly to the appearance of large-scale unemployment). This fall you can see from the beginning of the 1980s (Dövényi 2009), and then you can observe a growth in inland migration until 2007. However, 2008 was the year when it started falling again (Gödri-Spéder 2009). As a result, it seems logical that „migration is recession-sensitive”, so people in time of economic crises are less willing and less able to change residence as they are in time of a better economic period. However, this correlation should be examined from more aspects since migration is a very complex phenomenon and other factors could also affect the trend. Moreover, the prevailing direction of migration also changed after the changes of the system: the population of Budapest and other cities started to fall for the benefit of a part of the villages (communities), which - as I have mentioned alre-

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<sup>12</sup> At the beginning of the period 35% of the national income was spent on (mostly heavy industrial) investments (Sántha Buday, 2001)

<sup>13</sup> National Network Development Concept of Settlements (OTK). In the network of settlements, the program pointed out upper-, secondary- and basic-level centers (usually cities, but in case of the latter, large villages as well) nationwide, where - since then - developments focused. In settlements being „in lack of functions” (mostly small villages) infrastructural and other developments were stopped. The objective was to rationalize task performance and maximize total economic output by relying on the centers (Faragó 2005). I think that the main problem of OTK was that it could not ensure appropriate access to services and their availability to the inhabitants of small villages. It further strengthened rural to urban migration.

**Diagram 1: The change of migration balance according to settlement categories (1960-2004)**



Source: Dövényi 2009

ady - usually affects other social classes than rural to urban migration does, and has other causes and consequences, too<sup>14</sup>.

But what could be the reason why rural to urban migration (from which a big part could be migration in connection with places of work) fell so much after the system had changed? The next section will deal with the question.

### 2.3. Impeding factors in rural to urban migration

An obvious criterion of job related migration is that there must be any reception area in which demand for labor force exists (Mulhern 2009). However, 1,5 million people became unemployed at the time of system change. As a result, a nationwide oversupply of labor force appeared parallel to the decline of uncompetitive (market losing) heavy industry and with the closure of agricultural co-operatives. Significant part of the unemployed has never been employed in any region since then - so they became finally inactive<sup>15</sup> (Enyedi 1996). The situation was especially hopeless among low-skilled, physical and semi-skilled workers and within it, among elders and romas. The number of commuters also decreased with the lack of working places (Illés 2000).

A further problem in depressed areas (mostly in disadvantaged small villages) was that - in many cases - property of the families consisted of their houses only - and the value of their homes fell dramatically as a consequence of unfavorable economic-social processes (Illés 2000). As a result of the difference in the prices of houses, families would have had limited possibilities concerning rural to urban migration even if they had been given jobs. In Hungarian cities demand-side real estate market is prevailing and the rate of flats rented is

<sup>14</sup> Statistics can be misleading here since urban to rural migration usually means suburbanization. Thus, target areas are smaller settlements in the outskirts of cities. They are autonomous only administratively and statistically in many cases - because they are parts of the city agglomeration if concerning social-economic functions.

<sup>15</sup> Mulhern - examining the Spanish situation - drew attention to the fact that job related migration is hindered by the too little difference in wage levels and in different social aids as well.

really low<sup>16</sup>. As the case of Germany shows, opportunity of renting flats and its public acceptance - understandably - highly increase the frequency of moving within and outside the given settlement, too (Denzer-Heydenreich 2006).

In addition to the impeding factors mentioned above cities would also be able to absorb migrants to a limited extent due to under-urbanization (load of public utilities, over-exploitation of institutional capacities). Development of these would cost a lot for local authorities. With the increase of migration, immigrants appear on the labor market in the cities as labor supply which means they are rivals of the workers living there for ages. As a consequence, wages could decrease (strong trade-unions are not typical in Hungary). However, the effect of this process would be favorable from the employers' point of view and it is likely that the strengthening of social and spatial mobility would cause bigger competition - and it could contribute to the occupation of jobs by the most appropriate persons (Andorka 1982). (Under current unemployment rate, this problem does not occur sharply.)

The situation is further complicated because in many cases, removal is not a unique, rather a family decision: the actors maximize the wealth of the family. Moreover, wider family ties also provide with a kind of security and protective net for persons and families - and it is also against removal. These ties are typically stronger in villages according to sociologists.

Migration willingness can be reduced by subjective, mentality factors as well (such factors can be: fear from change, comfort criteria, pessimism). The role and importance of these can be the subject of a new investigation.

Nevertheless, I conclude that growth of mobility would be useful to the whole society despite the problems described above - mainly because of difficulties and inefficiency problems in the creation of new jobs in rural areas. And, through the decrease of social burdens (given to unemployed), mobility could be an important aspect concerning the realization of equal opportunities.

#### **2.4. Effects of qualification on internal migration - concerning the settlements of South-Transdanubia having less than 1000 inhabitants**

In this section, I would like to grab the relationship between education system and migration. Therefore, I investigate the correlation between the average level of qualification in small settlements and the ability of these settlements to retain their population. Elements of the sample are South-Transdanubian (NUTS 2-level region) settlements having less than 1000 inhabitants. It means 480 villages.

By the logical way, two contradictory effects can be imagined:

1. The higher the average level of qualification concerning the inhabitants, the bigger the rural to urban migration among them. (This is a negative correlation between qualification and migration balance.)
2. The higher the rate of intellectuals in a given community, the bigger the ability of this to retain its population. (This is a positive correlation between qualification and migration balance.)

The data base can be used to test the disadvantages in the opportunities of Romas and the demographic trends in their population, since the rate of Romas differ significantly from village to village in South-Transdanubia.

Individual level data base does not exist, so - relying on my previous literary knowledge - I collected birth, mortality and migration data covering 10 years (and I used them to generate the outcome variables) at municipal level. I included the followings as explanatory variables: number of inhabitants, rate of people with secondary qualifications, rate of graduates, rate of

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<sup>16</sup> The number of new flats built has fallen since the 1980s; most of the state tenements and the municipal apartment blocks were privatized at the time of the system change (Illés 2000).

Romas, rate of inhabitants with German origin, rate of registered unemployed, number of cars per 1000 inhabitants in the given settlement, number of registered enterprises with legal personality and - last but not least - the distance (in time) between the given settlement and the county seat (centre of the NUTS 3-level region)<sup>17</sup> (Annex 9).

To make it as clear as possible, I used migration balance of villages as result variable in the first version (I subtracted the number emigrants from the number of immigrants, 1999-2008). I concerned only the number of people with secondary qualification, the number of graduates<sup>18</sup> and the rate of Romas as explanatory variables in this version (relying on the national census of 2001).

From the study it can be concluded that - on average - 6,7% of the population of small settlements emigrated between 1999-2008. Both the rate of people with GCSE (General Certificate of Secondary Education) and the rate of graduates are very low in settlements, within the total population (8,85 and 2,54%). Examining the correlations between variables with linear regression, we can say that the model is significant but its explanatory power is only 2,5%. This would mean that the effect of the rate of graduates and the rate of people with GCSE on the ability of the given settlement to retain its population can not be proved. The value of beta (Standardized Coefficient) would be positive, 11,8 or 6,9% (and the value of the "B" was 67,1% and 19,7% (the latter is not significant at 5%) (Annex 10). So, if - for example - the rate of graduates were increased by ten, it would reduce the rate of emigration - on average - by 6,71 %.

If we add the rate of people with Roma origin as a new variable (as a factor which causes disadvantages in opportunities), the explanatory power will go up to 5,7% - which is still very low. The value of beta belonging to Roma origin would be -30% - and significant -, therefore, the rate of Romas would raise emigration according to the model, but the explanatory power is negligible (Annex 11).

In my opinion, the weakness of the model is caused by the different „relations" of qualified classes to the different settlement types. While in disadvantaged settlements school qualification of the inhabitants (growing there) is being generally lower and intellectuals are settling down in (moving to) cities, suburbanization just starts in city agglomerations and other advantaged areas. As a result, the wealthier middle class often move to (in many cases, just administratively independent) small settlements. (The relatively low rate of the studied age-groups - compared to the whole population - can also reduce the explanatory power of the model.)

Therefore, it would be important to investigate this set of problems as a little more complex group. So, I took all the possible 10 (social-economic) explanatory variables - mentioned in Annex 9 - into the regression model (Annex 12). The result of this regression is more remarkable; explanatory power went up to 35,9% (the model is significant). Among the variables, the number of registered enterprises with legal personality, the rate of people with GCSE and of graduates, and the rate of Romas did not prove to be significant variables. However, negative correlation between the change of birth and migration balances is - interestingly - strong (the value of B is -69,6% and the value of beta is -40%), and all in all, this peculiar correlation seems to be the strongest. The second strongest but positive beta-value is owned by the number of inhabitants of settlements: for example, if the number of inhabitants of a settlement is a hundred larger than the number of inhabitants of the other settlement, then the former will lose its population slower by 1,4%, and so on. The rate of

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<sup>17</sup> When determining the time of travelling, I used pieces of information from Volán schedule. I supposed that shift is between 8-16 and I calculated an average from the time of travelling by bus service to work and the time of travelling by it to home - concerning changing, in minutes. (If there was no such service, I calculated with the nearest in time.) The creation of a more complex indicator would have been too expensive.

<sup>18</sup> The rate of people with GCSE and the rate of graduates among people above 7 years.

unemployed and the distance from county seat produced the expected results: as they grow, the ability of settlements to retain the population goes down (beta-values are -19,3% and -19,1%). The number of cars and the rate of people with German ethnicity affect just a little on emigration according to the study - but their effects are significant and negative.

To study relations which are supposed but not analyzed in the regression, it is worth examining the correlations of some pairs of variables (Pearson Correlation). On this basis it seems that in a settlement having a high rate of graduates, unemployment is significantly lower (correlation coefficient is -37,7%). Settlements having high rate of Romas have high birth balance, too (correlation coefficient is 35,6%). The rate of Romas and the unemployment coefficient is 48,3%. We cannot differ the reason from the result among these factors. Moreover, the effects of other factors cannot be filtered out with this method (all the three correlations are significant).

Although regression method reveals some important effects, it has to be mentioned that the analysis has its own barriers:

1. Suburbanization and segregation are separated well territorially and their effects are contrary. Therefore, phenomena - taking place in South-Transdanubian settlements having less than 1000 inhabitants - are not the same ones. So, after performing a preliminary cluster analysis - taking many factors into consideration -, it could be useful to investigate the correlations of the concerned segregated small villages in Hungary separately (see eg. Beluszky-Sikos T. 2007).
2. Individual level data of migration were not available, so we could study aggregate data of population changes of settlements. Thus, we do not know the migratory direction (from where to where) surely. Moreover, we do not know the number of individual and family removals concerning the 10-year period (moving back, circulation).
3. Appropriate data base of real estate prices were not available. Nevertheless, this factor plays an important role in migration decisions (Farwick 2009).
4. In the lack of hard settlement data, welfare could be operationalized with the number of cars only (the advantage of that is its connection with accessibility).
5. The newest qualification and ethnic groups statistics broken down into settlements are data of the national census of 2001. These data are too old and probably changed in the last 9 years (educational expansion, demographic trends of Roma population).
6. Data of origin can be distorted by the fact that statistics contain the belonging to nationality or ethnic group to which the respondents declared themselves. In case of certain (mostly Roma) families it can occur that - being afraid of prejudices - they did not declare their real origin(s).
7. The number of registered unemployed is probably underestimated because it calculates only with the register of the Labor Centre. It would be better subtract the number of employed and entrepreneurs from the total number of the age-group being able to work. However, this indicator was not available in perfect breakdown, too.
8. Determining the time of travelling is also quite simplified - I concerned just the Volán schedule and while missing the train guide. If concerning only the distance from the county seat, the nearness or distance of small- and medium-sized towns would not appear in the study.
9. The set of problems is also in connection with several facts that are hard to operationalize, like union of local communities, talent/incapability of local leaders etc.
10. It is really hard to separate reasons from results in this group of intertwining problems.

## 2.5. Effects of education and internal migration on rural development

In fact, the three topics at issue (the education system, migration and problems in disadvantaged rural areas) are linked together in several, logical ways. Settlement structure and migration processes affect the quality of education; the required standard of education is an essential factor in migration and also in the social and economic development of rural areas.

However, practical evidence suggests that it is the better-educated elements in the population who are able to migrate the most easily from disadvantaged areas (except of suburbanization). It has further negative effects on the social-economic structure of the given settlement (decrease of local taxes, declining settlement image and social environment, age structure, decrease in the rate of economically active population, segregation etc.). Migration of local intellectuals could have another bad consequence: in the given community, no one will be able to formulate any need of the region and to set possible ways of development, as well as nobody will be able to unite the community, thereby making the area more livable<sup>19</sup>.

In case of suburbanization, the coming of economically active persons can have good effects considering local incomes, settlement image and local social standings, too. However, these processes are well separated from each other territorially and this favorable effect of migration is true only to a few, well-situated, easily available villages.

Although, the development of local economy and society is important, in my opinion, it is not only the priority to increase the ability of disadvantaged settlements to retain their population. Indeed, the institutional framework which facilitates an increase in spatial mobility needs to be evaluated. Increasing mobility - together with an integrated but market-focused education system - could have positive effects on the labor market and could also help to eliminate poverty.

### Conclusion

So far, as described I expect that mobility and innovativeness of the Hungarian population are strongly limited by „tangible” financial and institutional possibilities - probably more than by mental barriers (fear from changes, comfort factors etc.). However, the latter aspects could be the subjects of further investigations.

It is true to a greater extent when considering disadvantaged areas of small villages, being far from the country's development axis. It is to be feared that the disadvantaged areas will continue dropping behind if the world economic crisis last long and if segregation processes - in certain areas have already been seen - continue, making disadvantaged areas further drop behind, thereby making it impossible to the inhabitants to break out.

Though the development of education system and the facilitation of mobility cannot solve social-economic problems of an area, but I think it can contribute to the emergence of a better educated, more mobile and more innovative society in which every citizen can find his own position.

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<sup>19</sup> In present-day small settlements, pedagogues and cultural organizers, municipal staff, doctors and economic leaders - all working in micro-regional education centres - could create similar „intellectual focal points”.

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## Annexes

### Annex 1: Settlement structure and the state of elementary education in settlement in the Southern Transdanubian, Northern Great Plain and Northern Hungary Regions

Region/ County	Settlement size (population)								
	Population < 1000			Population between 1000-5000			Population > 5000		
	Popula- tion (person)	Number of settle- ments	Settle- ments having primary school (number)	Popula- tion (person)	Number of settle- ments	Settle- ments having primary school (number)	Popula- tion (person)	Number of settle- ments	Settle- ments having primary school (number)
Baranya	85 229	256	48	74 052	40	36	235 630	7	7
Somogy	75 239	179	45	109 131	59	59	137 827	7	7
Tolna	31 918	60	19	80 360	41	41	123 596	8	8
<b>South- Trans- danubia</b>	<b>192 386</b>	<b>495</b>	<b>112</b>	<b>263 543</b>	<b>140</b>	<b>136</b>	<b>497 053</b>	<b>22</b>	<b>22</b>
B-A-Z	92 936	224	82	228 147	116	110	380 077	18	18
Heves	23 999	41	14	155 625	74	73	134 817	6	6
Nógrád	41 046	77	30	82 727	49	47	84 854	5	5
<b>Northern Hungary</b>	<b>157 981</b>	<b>342</b>	<b>126</b>	<b>466 499</b>	<b>239</b>	<b>230</b>	<b>599 748</b>	<b>29</b>	<b>29</b>
Hajdú-B.	12 090	20	13	92 947	41	41	437 155	21	21
Jász-N-Sz	9 303	15	11	97 159	42	42	288 429	21	21
Szabolcs	57 571	101	47	251 408	113	113	256 347	15	15
<b>Northern Great Plain Region</b>	<b>78 964</b>	<b>136</b>	<b>71</b>	<b>441 514</b>	<b>196</b>	<b>196</b>	<b>981 931</b>	<b>57</b>	<b>57</b>
Hungary to	770 228	1 751	n. a.	2386 566	1 124	n. a.	6874 181	277	n. a.

Source: own construction based on the data (2009) of KSH (Central Statistics Office)

### Annex 2: Name of the subjects of the interview, their positions, place of work (settlement), population of the settlement (number), 2008

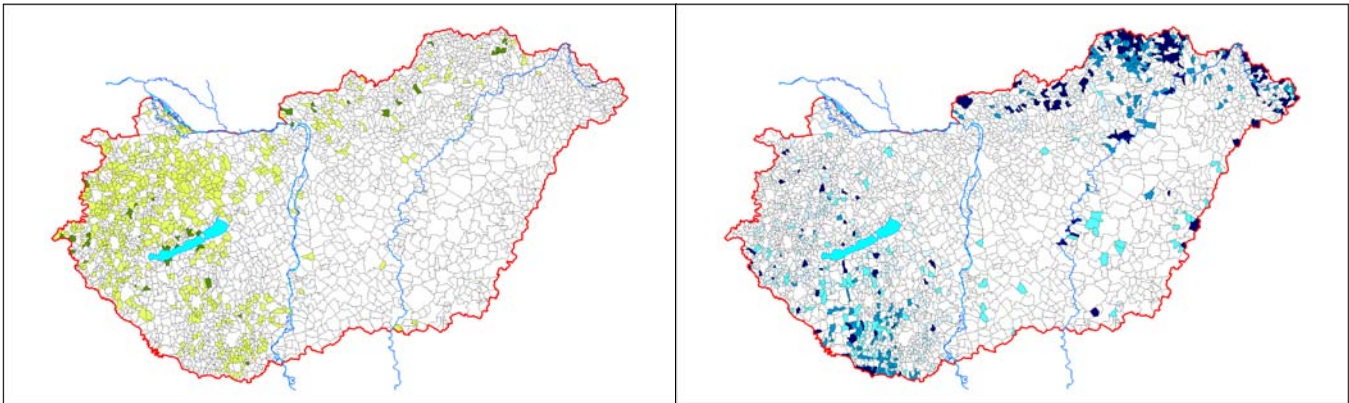
1 Szilárd Székely	Mayor	Sásd	3322*
2 László Dicső	Mayor	Alsómocsolád	349
3 Gyula Gábor	President of the Micro-regional Associations	Sásd	3322
4 István Finta	President of the LEADER Community	Vékény	115
5 Csaba Kárpáti	Council member	Alsómocsolád	349
6 Andrea Gáspár	Vocational secondary school director	Sásd	3322
7 Ilona Kocsisné Walter	Elementary school director	Sásd	3322
8 Józsefné Illés	President of the Basic Social Services Center	Sásd	3322
9 Anikó Balogh	Leader of the Community Center	Alsómocsolád	349
10 Ivett Czike	Elementary school teacher	Csikóstöttös	882
11 Melinda Papp	Education rapporteur	Sásd	3322
12 (asked for secrecy)	Employee of the Community Center	Sásd	3322

\* Sásd became element of the sample as the centre of the micro-region. 24 of the 27 settlements of micro-region of Sásd has a population of less than 1000 people. Every settlement has own local government in Hungarian administrative system, even if it cannot perform all the tasks itself.

Source: own construction

You can find the minutes of some interviews in: Sayed-Mohammed Eszter (2009): Új város és vonzáskörzete – Az aprófalvas térségek problematikája a Sásdi kistérség példáján. In: A Vidék Hangja Magazin, 2009. 05. 25.

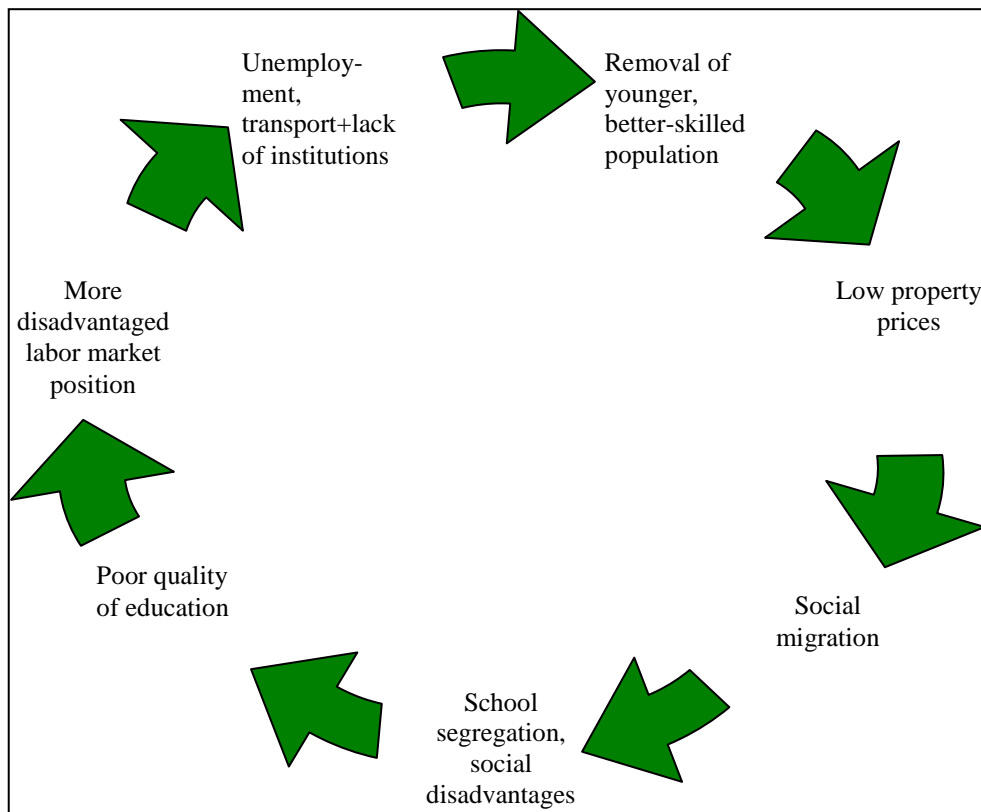
### Annex 3: Advantaged and disadvantaged small villages in Hungary, 2001



Source: Beluszky – Sikos T. 2007

- Factors of the investigation: 1. Position on the labor market\*; 2. Settlement structure – basic services; 3. Demographic status; 4. Dynamics of numeral changes in population; 5. Occupational structure - commuting; 6. Tourist industrial conditions; 7. Rate of peripheral populations; 8. Agricultural conditions

### Annex 4: Vicious circle of the multiply disadvantaged small settlements



Source: own construction

**Annex 5:** Data of elementary and intermediate educational institutions according to form of funding in the Southern Transdanubian, Northern Hungary and Northern Great Plain Regions

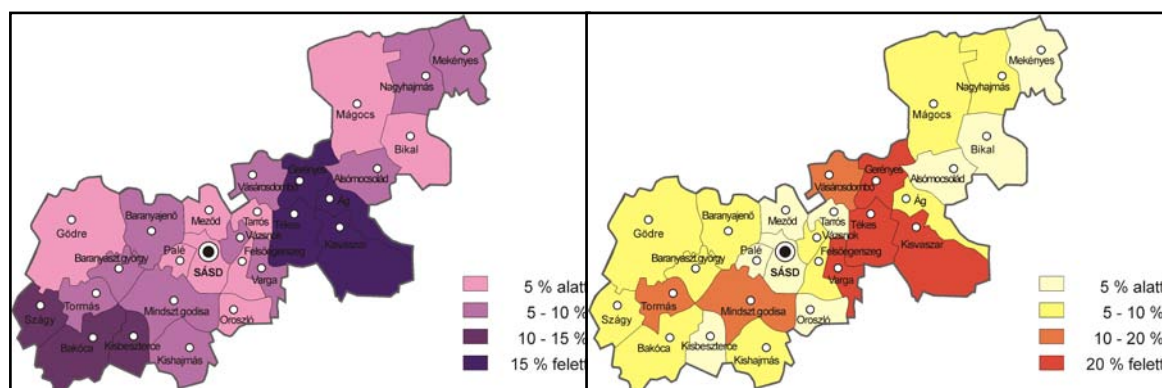
Region	School type	Number of places where tasks are completed							Together
		Maintainer							
		Local government	County council	Central budget authority	Churches, denominations	Foundations, co-operatives	Other		
South-Transdanubian Region	Primary school	340	14	4	19	5	2	384	
	Technical school*	36	18	2	4	12	3	75	
	Secondary school**	66	18	7	11	24	22	148	
	Primary school	483	17	2	23	10	1	536	
Northern Hungarian Region	Technical school	30	29	3	10	24	5	101	
	Secondary school	81	29	6	20	27	32	195	
	Primary school	468	12	5	33	4	5	527	
Northern Great Plain Region	Technical school	69	19	0	2	31	17	138	
	Secondary school	151	21	3	18	33	82	308	

\* In the earlier school system: shorthandtyping schools, technical schools and industrial schools

\*\*Data of Schools preparing for final exam and trainings based on final exam or secondary education

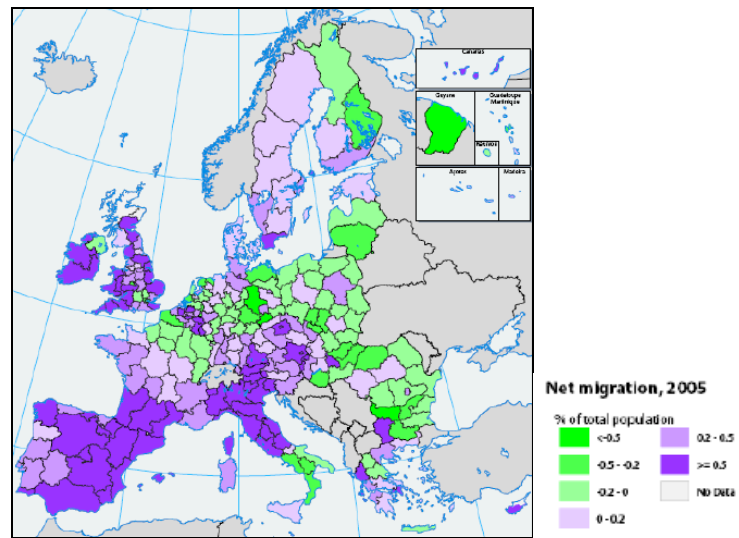
Source: own construction based on the data (2009) of KSH (Central Statistics Office)

**Annex 6:** The proportion of Roma population (2001) and the rate of people receiving regular social benefits (2005) in the micro-region of Sásd



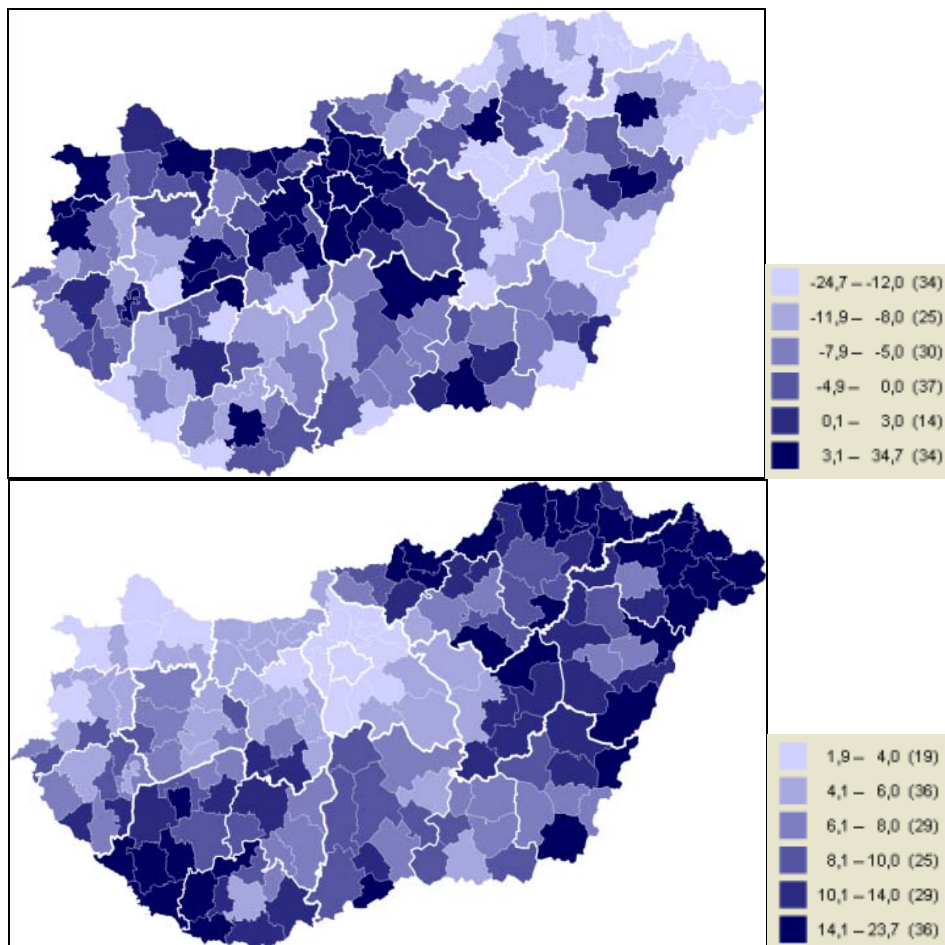
Source: own construction, based on the data from CSO (KSH)

**Annex 7: NUTS 2-level differences of migration in the European Union (2005)**



Source: Barca 2009

**Annex 8: Internal migration difference per 1000 (persons) and the differences of unemployment rate (%) in Hungary at LAU 1-level, 2008**



Source: CSO (KSH) 2009

**Annex 8:** Main social-economic indicators in case of small settlements of the South-Transdanubian Region

Variable	Mean	Std.deviation
Migration in/from the villages, 1999-2008 (persons)	-6,697	13,367
Birth balance of the villages, 1999-2008 (persons)	-5,205	7,675
Population, 2008 (persons)	379,3	226,730
Time distance from the county's center, 2010 (minutes)	81,152	43,294
Number of enterprises with legal personality, 2008 (number)	4,458	5,112
Number of cars per 100 persons , 2008 (number)	25,463	6,726
Registered unemployed in the percentage of the population, 2008 (%)	11,639	5,986
Roma ethnic group in the percentage of the population, 2001 (%)	5,505	8,490
German minority group in the percentage of the population, 2001 (%)	4,216	10,518
Graduates in the percentage of the population, 2001 (%)	2,542	2,3440
People with secondary qualification in the % of the population 2001	8,855	4,683

*Source: own construction, based on the data from CSO (KSH)*

**Annex 9:** Effect of average school qualification on the ability of small South-Transdanubian settlements to retain their population

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change	Durbin-Watson
1	,158 <sup>a</sup>	0,025	0,021	13,2273	0,002	2,05

a. Predictors: (Constant), SEC01, GRAD01

b. Dependent Variable: MIGR

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-10,147	1,314		-7,724	0
GRAD01	0,671	0,279	0,118	2,404	0,017
SEC01	0,197	0,14	0,069	1,41	0,159

a. Dependent Variable: MIGR

*Source: own construction, based on the data from CSO (KSH)*

**Annex 10:** Effect of average school qualification and of origin on the ability of small South-Transdanubian settlements to retain their population

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change	Durbin-Watson
1	,239 <sup>a</sup>	0,057	0,051	13,02088	0	2,065

a. Predictors: (Constant), ROMA01, GRAD01, SEC01

b. Dependent Variable: MIGR

*Source: own construction, based on the data from CSO (KSH)*

Coefficients

Model	Unstandardized Coefficients		Standardized Co-efficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-6,835	1,532		-4,461	0
GRAD01	0,614	0,275	0,108	2,232	0,026
SEC01	0,026	0,144	0,009	0,18	0,857
ROMA01	-0,3	0,074	-0,191	-4,031	0

a. Dependent Variable: MIGR

*Source: own construction, based on the data from CSO (KSH)*

**Annex 11:** Extension of the model - some correlations of disadvantages in regions of small villages

Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Sig. F Change	Durbin-Watson
1	,600 <sup>a</sup>	0,359	0,346	10,8113	0	1,916

a. Predictors: (Constant), SEC01, GER01, BIRTH9908, DIST10, P08, ROMA01, GRAD01, CAR08, UNE08, ENT08

b. Dependent Variable: MIGR

*Source: own construction, based on the data from CSO (KSH)*

Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2,551	3,497		0,73	0,466
BIRTH9908	-0,696	0,072	-0,4	-9,687	0
P08	0,014	0,003	0,237	4,879	0
DIST10	-0,059	0,012	-0,191	-4,764	0
ENT08	0,237	0,135	0,091	1,754	0,08
CAR08	-0,254	0,101	-0,128	-2,513	0,012
UNE08	-0,43	0,115	-0,193	-3,744	0
ROMA01	-0,026	0,071	-0,017	-0,374	0,708
GER01	-0,136	0,05	-0,107	-2,712	0,007
GRAD01	-0,213	0,265	-0,037	-0,803	0,422
SEC01	-0,191	0,136	-0,067	-1,397	0,163

a. Dependent Variable: MIGR

*Source: own construction, based on the data from CSO (KSH)*

**Annex. 12: Pairwise correlations of variables**

Correlations												
		MIGR	BIRTH 9908	P08	DIST10	ENT08	CAR08	UNE08	ROMA 01	GER01	GRAD 01	SEC01
Pe ar son cor re la ti on	MIGR	1	-0,406	0,313	-0,247	0,228	0,024	-0,351	-0,212	0	0,144	0,114
	BIRTH 9908	-0,406	1	0,044	-0,037	0,005	-0,102	0,302	0,356	-0,122	-0,067	-0,167
	P08	0,313	0,044	1	-0,168	0,586	0,082	-0,292	-0,054	0,066	0,389	0,242
	DIST10	-0,247	-0,037	-0,168	1	-0,204	-0,221	0,346	0,163	-0,086	-0,189	-0,19
	ENT08	0,228	0,005	0,586	-0,204	1	0,344	-0,326	-0,152	0,171	0,53	0,329
	CAR08	0,024	-0,102	0,082	-0,221	0,344	1	-0,473	-0,384	0,255	0,385	0,565
	UNE08	-0,351	0,302	-0,292	0,346	-0,326	-0,473	1	0,483	-0,287	-0,367	-0,446
	ROMA 01	-0,212	0,356	-0,054	0,163	-0,152	-0,384	0,483	1	-0,181	-0,173	-0,335
	GER01	0	-0,122	0,066	-0,086	0,171	0,255	-0,287	-0,181	1	0,193	0,132
	GRAD 01	0,144	-0,067	0,389	-0,189	0,53	0,385	-0,367	-0,173	0,193	1	0,384
SEC01	0,114	-0,167	0,242	-0,19	0,329	0,565	-0,446	-0,335	0,132	0,384	1	
Sig. (1- tai led)	MIGR	.	0	0	0	0	0,302	0	0	0,495	0,001	0,006
	BIRTH 9908	0	.	0,166	0,207	0,454	0,013	0	0	0,004	0,07	0
	P08	0	0,166	.	0	0	0,037	0	0,12	0,074	0	0
	DIST10	0	0,207	0	.	0	0	0	0	0,03	0	0
	ENT08	0	0,454	0	0	.	0	0	0	0	0	0
	CAR08	0,302	0,013	0,037	0	0	.	0	0	0	0	0
	UNE08	0	0	0	0	0	0	.	0	0	0	0
	ROMA 01	0	0	0,12	0	0	0	0	.	0	0	0
	GER01	0,495	0,004	0,074	0,03	0	0	0	0	.	0	0,002
	GRAD 01	0,001	0,07	0	0	0	0	0	0	0	.	0
	SEC01	0,006	0	0	0	0	0	0	0	0,002	0	.

*Source: own construction, based on the data from CSO (KSH)*