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Comments on workforce mobility in Hungary

ABSZTRAKT

A térbeli mobilitás a XX. század második felétől a gazdasági, politikai folyamatok meghatározó eleme lett, és változó jellege miatt bekerült az érdeklődés központi körébe (Rédei M. 2010). Olyan kérdéssé fogalmazódott, amelynek értelmezése és a trendek mögötti folyamatok beazonosítása, hatásvizsgálata elkerülhetetlenné vált.

A globalizáció világát éljük, ahol sok tekintetben a térbeli mobilitásra való hajlandóság alapképességgé kell, hogy váljon. Nagy területű és akár sok dialektussal is bíró országokban a térbeli mobilitás kérdésköre nem úgy merül fel, mint Magyarországon – azaz, hogy van vagy nincs –, hanem inkább abban a kontextusban, hogy mi az irány. (Gondolok itt az USA-ra, vagy Indiában a Bangalore körül kialakult „Szilícium-völgy" munkaerő-piaci telítettségére.)

A kutatásom célja annak feltérképezése, hogy a vállalkozások vezetői Magyarországon hogyan gondolkodnak a munkaerő-piaci mobilitásról, milyen támogatási eszközöket használnak, problémaként élik-e meg a magyar népesség mobilitási hajlandóságának meglehetősen alacsony szintjét.

A kutatás által vizsgálni kívánt alapsokaságot Magyarország vállalkozásai jelentették, amelyek a régiók (NUTS2) területi szintjén működnek.

A kutatás során strukturálatlan kérdőív alkalmazására került sor, amelynek segítségével kilenc, különböző típusú (zárt/nyitott/strukturált) kérdésre, 119 gazdasági társaság válaszolt. A tanulmány terjedelmi korlátai miatt a munkaerő-piac mobilitással kapcsolatos véleményekre irányuló elemzések eredményei kerülnek csak bemutatásra. A kutatási eredmények feldolgozása négyféle alaptagoltságot követ: tulajdonviszony, cégméret, ágazati tevékenység, földrajzi eloszlás.

A kutatás során bebizonyosodott, hogy mint jelenség a mobilitás alacsony szintje jelen van, és a munkaadók ezt érzékelik is, mindezek ellenére a magyarországi munkaadók közepesnél alacsonyabb problémaként élik azt meg.

Néhány konkrét számadat a kutatás alapján:

Amennyiben a társaságok többségi tulajdonosa szempontjából vizsgáljuk a kérdést, akkor megállapítható a munkaerő-piaci mobilitás alacsony szintjét 4,51 százados átlag értéken értékelik, 1 - 10-ig terjedő értékskálán.

Régiók szerinti bontásban a mobilitás alacsony szintje a legnagyobb problémát a Nyugat-Dunántúlon (6,1) és a Dél-Alföldön (5,67) jelenti, ezzel szemben Észak-Magyarország-i régióban alig jelentkezik (3,14).

Az ágazat szerinti vizsgálatnál, a mobilitás alacsony szintje a feldolgozóipar számára (5,55), míg cégméret alapján a középvállalkozásoknál (4,97) jelenti a legnagyobb problémát.

ABSTRACT

Geographic mobility has become a decisive factor of economic and political processes since the second half of the 20th century and, due to its variability, it is in focus of interest (Rédei, M. 2010). It has shaped into an issue requiring interpretation, and identification of processes behind the trends and investigation of their effects have become inevitable. We live in a globalized world where readiness for mobility shall become a mandatory capability in multiple respects. Unlike Hungary, where we debate whether there is mobility or not, in large countries, possibly, with many dialects, direction of geographic mobility is to be investigated. (I mean here the USA or the "Silicon Valley" type workforce saturation of the Bangalore region in India.) My research aims at reviewing the way of thinking of company executives in Hungary about workforce mobility, what supporting means they use and whether they regard as a problem that the readiness of the Hungarian people for mobility is rather poor. In my research, companies of Hungary working at regional level (NUTS2) were used as population to be investigated. An unstructured questionnaire with nine questions of different types (closed/open/structured) was sent to companies, and 119 questionnaires were returned. Due to scope limitations, only results of analysing workforce mobility-related responses are presented in this study. Research results are discussed in four aspects: ownership, company size, sectoral and geographical distribution. Research has confirmed that poor mobility as a phenomenon exists and is perceived by Hungarian employers, yet, they regard it as a problem of less than medium importance. Some figures resulting from the research: When investigating this issue from the point of view of majority owner of the companies, it can be stated that they evaluate the low-level mobility on average by 4.51 on a scale from 1 to 10. In regional aspect, low-level mobility is the largest problem in Western Transdanubia (6.1) and Southern Great Plain (5.67) while in the Northern region, it is hardly ever perceived (3.14). In terms of industries, the processing industries are the most concerned (5.55) by the low-level mobility and in respect of company size, medium-sized companies (4.97) regard it as most problematic.

Keywords: Hungary, workforce mobility, geographic mobility, migration, regional inequality
Kulcsszavak: Magyarország, munkaerő-piaci mobilitás, térbeli mobilitás, migráció, területi egyenlőtlenség,

INTRODUCTION

In some words I interpret the notion of mobility in order to clarify which areas of mobility I discuss in this paper.

Motion capability of individuals can be observed both as geographical, i.e. spatial mobility and mobility between and within generations, i.e. as social mobility. If spatial, i.e. geographical mobility

goes with change of residence, we speak of wandering or, with a foreign term used also in common language, migration (Eké né, Z.I. and Dövényi, Z. 2010). The other form of geographical mobility is commuting when individuals travel between their residence and work (or school) every day, weekly, bi-weekly or more rarely; they are called distant commuters. In the international literature, "commuting" is used for working adults; for students travelling to school in some cases only (Keserű, I. 2013). The Hungarian literature analyses commuters, first of all, from the aspect of employment and labour market (such as Szalkai, G. and Pénzes, J.). Therefore, this issue is out of focus of my paper.

SPATIAL STRUCTURE AND REGIONAL INEQUALITIES OF HUNGARY

After the Trianon Treaty in 1920, separate settlement structures, cut highways, railways and hydrographical embankment systems and disrupted economic co-operation have presented perceivable problems until now (Pap, N. 2007). Space organizing centres of the historical Hungary (Pozsony - Bratislava, Kassa – Košice, Munkács – Mukachevo, Nagyvárad – Oradea, Arad, Temesvár - Timişoara, Brassó - Braşov, Újvidék – Novi Sad, etc.) remained outside the borders, and sub-centres with space organizing ability (such as Miskolc, Debrecen, Szeged, Pécs, Győr) found themselves near the border. Some other cities such as Sopron, Komárom, Esztergom, Balassagyarmat, Gyula and Makó became unsuitable to play central role due to their geographical situation. The new border separated administrative areas, there are three such towns in the Carpathian Basin: Komárom, Szabadka (the periphery of the town remained in Hungary), Sátoraljaújhely (the city centre remained in Hungary). Therefore, curious town development phenomena occurred along the borders: centres have been left without agglomeration, thus, on the other side, areas with town deficit have emerged.

In the 1990s, position of these cities has been revaluated, their situation at the border has become an advantage due to economic, service and commercial connections. Joining the European Union (2004) and later becoming member of the Schengen area (termination of checks at border stations in 2007) have added to value increase of the proximity of the border.

Attractiveness of urban functions can be observed mainly in the North-Western border region. Cross-border functional attraction of the three capitals (Vienna, Bratislava and Budapest) is outstanding among the cities (Hardi, T., Hajdú, Z. and Mezei, I. 2009).

After the administrative reform in 1923, Hungary consisted of 25 counties, and after the integration of some of them in 1950, there are 19 counties in Hungary. In addition to the change in the number of counties, also their area was modified. After the regime change, two new administrative categories (with considerable prehistory), called region and micro-region, appeared as levels of administrative organization and support of regional development.

One major task of the European Union is to help catching up the undeveloped areas by allocating various financial aids to the deprived regions. For efficient operation of this system, a unified database assuring objectivity is needed. For this purpose, the Eurostat developed the NUTS system, i.e. Nomenclature of Territorial Units for Statistics in the 1970s. There are three levels in NUTS system; in 2003, two local administrative units (LAU1 and LAU2) were added to it. Hungary was divided into seven planning-statistical regions in 1999. Not all EU members use all the levels; Hungary has the following regional levels:

- 3 statistical macro-regions,
- 7 planning-statistical regions,
- 19 counties and Budapest,
- 175 statistical micro-regions, and
- 3152 settlements, the number of which changes continuously.

"The level of economic development in the world is not uniform. There are poor regions and there are wealthy regions, and the discrepancies between them are on increase. Economic development is concentrated in particular regions of the Earth, and it is the result of the spatial process of the economy and society" (Hardi, T. and Szörényiné K., I. 2006).

Also Hungary is characterized by regional inequality due to social and economic changes of different intensity. Even now, a kind of "slope" can be observed on the West–East and North–South axes of the country; the capital city (with its agglomeration) is separated from the rest of the country by numerous essential differences like centralization of system of institutions and transportation network, economic activity (e.g. number of companies and employment level are higher), missing regional reciprocal poles.

For us, inequality means not only abundance or poverty, it includes also natural environment and settlement network of a region shaping historically, thus, regions represent also cultural values. Competitive capacity of a region is defined by three factors including natural resources, geographic location and supply with human resources. Out of these factors, only socio-economic values change continuously (Enyedi, Gy. 1996.).

In the opinion of Nemes Nagy, J., when discussing regional inequalities of Hungary, several aspects have to be taken into account, and a number of indicators are available. Concurrent investigation of the following issues could provide a full picture.

Natural factors: environmental characteristics, location, climate, soil properties, etc.

Social factors: demographic data, employment characteristics, health condition, ethnic composition, elements of social capital, etc.

Economic indicators: infrastructure, characteristics of the local industries, services and agriculture, tax receipts of local governments, etc.

Other specific factors: characteristics of network of settlements, features of the settlement system, urbanization features, etc.

Existence of regional inequalities is a natural condition; there are no two territories with the same resources, characteristics and indicators.

In order to get a true picture, regional inequalities are to be investigated multi-dimensionally (Nemes Nagy, J. 1998), (Table 1).

Table. 1. Two poles of the settlement system in the dimension system of regional inequality, edited by Sebők, M.
1. táblázat: A településrendszer két pólusa a területi egyenlőtlenségi dimenziórendszerben, Szerk. Sebők M.

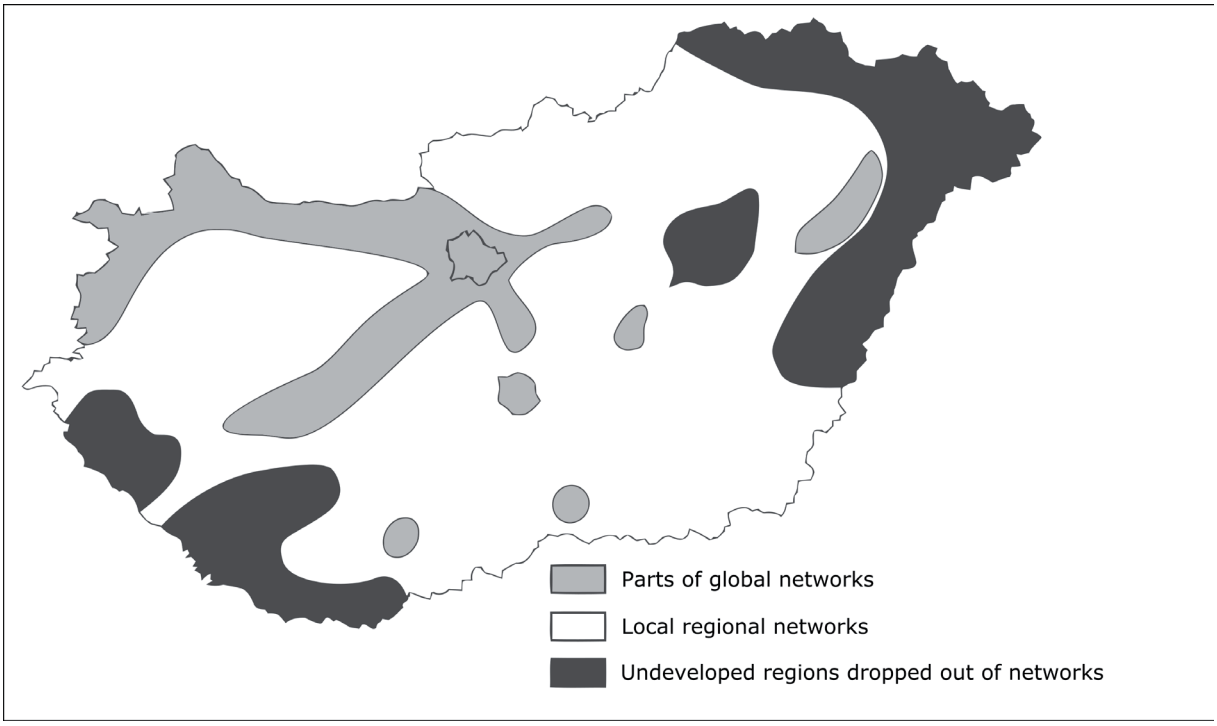
Inequality dimension	Large town	Small village
Location	Central	Marginal
Quantities	Populous	Small
Qualities	Developed	Undeveloped
Structure	Structured	Homogeneous
Role	Multifunctional	Function deficit
Relations	Multi-relational	Isolated
Circumstances	Controlling	Depending

Source: Nemes Nagy, J. (1998): A tér a társadalomtudományban (Space in social sciences), re-edited based on page 17

These seven dimensions are not independent of each other, yet, their relation is more stochastic than function-like. In regional researches, when investigating inequalities, circumstances shall be reviewed in several dimensions in order to get an overall picture.

In the concept of enyedi, György, larger differences have appeared between network elements and settlements (regions) excluded from network than among various levels of the settlement system. Great questions of regional development include: what can be done with economies and population of regions/settlements excluded from networks? Are they able to develop self-sustaining local economies? Networks have appeared also in the regional structure of the Hungarian economy (*Figure 1*) and they can be divided into three categories (Enyedi, Gy. 2004).

Fig. 1. Triple spatial system of Hungary.
1. ábra: Magyarország hármas térszerkezete



Source: Enyedi, Gy. 2004): Regionális folyamatok a posztszocialista Magyarországon (Regional processes in the post-socialist Hungary), Magyar Tudomány, 9/2004, p. 935

The first level as a part of global networks is the megapolis Budapest region and the axes connecting this region with Vienna, Lake Balaton and, possibly, Szeged. The most important element is here Budapest as member of the European metropolis network.

The smaller regional networks within the country stretching not too far into the neighbouring states represent the second level.

The third level is constituted by mostly undeveloped regions with villages excluded from networks. They can be found everywhere in Hungary, with the largest ones in the Trans-Tisza region as well in Northern Hungary and Southern Transdanubia.

When investigating inequality, the most frequently used indicator concentrates on measuring economic capability (GDP); however, in the market economy, social differences in earnings, employment and health care strongly perceivable by the population have essentially grown. Therefore, great attention was paid – in addition to economic capability – to social indices such as earnings, education, unemployment and demographic data, i. e. Human Development Index – HDI (Enyedi, Gy. 2004).

Within the research by Faluvégi, Albert and Tipold, Ferenc (2012), a criterion system consisting of 30 indicators grouped into 5 categories was developed where also social and welfare aspects were emphasized. The research result at regional level (*Table 2*) reveals that the four most unfavourable indicators belong to two regions: Northern Hungary and Northern territories of the Great Hungarian Plain. The most developed region is Central Hungary with the best values in four categories:

- Number of subsidized settlements is the lowest: 5.3%
- Number of people living in subsidized settlements is the lowest: 0.6%
- Metrics indicating development level of settlements show the highest value: 7.49%
- Unemployment rate is the lowest among the regions: 4.46%.

Table 2. Some characteristic indicators of settlements in regions, 2010, edited by Sebők, M.
2. táblázat: A régiók településeinek néhány jellemző mutatója, 2010, Szerk. Sebők M.

Region	Rate of subsidized settlements %	Rate of population in subsidized settlements %	Metrics of development level of settlements	Unemployment rate %
Central Hungary	***5,2***	***0,6***	***7,5***	***4,5***
Central Transdanubia	24,2	6,0	6,4	7,9
Western Transdanubia	24,7	4,8	5,7	10,7
Southern Transdanubia	66,1	22,7	5,9	8,4
Northern Hungary	*69,3*	*40,3*	*5,3*	*13,5*
Northern Great Plain	*81,0*	*38,4*	*5,3*	*12,8*
Southern Great Plain	63,4	25,2	5,6	9,6
In total	50,8	17,3	6,3	8,6

Source: Faluvégi, A. and Tipold, F. (2012), Területi Statisztika, 3/2012, KSH (with own marking of figures)

Concerning the spatial structure of Hungary, numerous new research methods and models were developed in the past years including software Darcy. The gravity model (?) built by its help shows that Budapest has the largest attraction in Hungary while nothing attracts Budapest. Of course, there are attractive centres such as Győr, Pécs, Szeged and Debrecen, however, they are not able to balance the capital city's effect (Kincses, Á. and Tóth, G. 2013).

Lengyel, Imre and Szakálné Kanó, Izabella (2012) analyse competitiveness of micro-regions by the Pyramidal model and regional competitiveness function (RCF) considering many factors (like degree of research and technological development; key figures of human resources; amount of working capital; etc.). This empirical research outlines four region types in Hungary being in different stages of development: Budapest and micro-regions around it; manufacturing micro-regions; university towns; and stagnating urban micro-regions.

WORKFORCE MOBILITY RESEARCH

The geographical workforce mobility has multiple aspects: historical background supplemented by geographical circumstances or control framework where a readiness level for mobility has developed. It is handled today as a fact, just like to the phenomenon that as a result of companies' expansion and global corporate consolidation, the workforce demand is re-arranging on the side of companies.

Demand and supply sides of a real market can be seen, but not clearly enough in most cases – implying mainly the company side, i.e. determinants of demand.

It is the main focus of my research, i.e. the way of thinking of companies in this issue: in addition to global specification of operating forms and production capacities necessary for their success, how they consider the workforce mobility in a region and how they can explore the available supply of a territory.

Research preliminaries

Before the preparation of this research, I studied earlier analyses and scientific papers related to my research topic (such as Cseres-Gergely, Zs. 2003, Bába, K. 2008, Ekéné Zamárdi, I. and Dövényi, Z. 2010, Németh, Zs. 2011, Hegedűs, H. 2014) hoping that they provide adequate baselines and research results comparable with data expected by me and allow drawing conclusions and formulating statements. I found that concerning spatial aspects of workforce mobility in Hungary, there were no results originating from researches where questions like the ones formulated by me were asked from employers.

On behalf of IBM Magyarország, GKIeNET Kft. made a research in cooperation with Foundation INFONIA involving 500 companies with more than 50 employees each[1]. Studying research questions of IBM Magyarország, they do not supply baseline for comparison of workforce mobility. I mention here the biannually executed reviews of Kelly Global Workforce Index examining ideas and opinions concerning labour and workplace in context of generations, mainly from point of view of employees.

Also in international literature, studies discussing mobility researching the employees or population of a country can be found predominantly. A research by Lück and Schneider (2008) covered 6 countries and 7220 persons participated in it. This study focused on three topics:

- Importance and diversity of labour-related regional mobility,
- Reasons and circumstances of mobility in employment,
- Impacts of mobility on family, personal well-being, career and social connections.

[1] IBM Magyarország – GKIeNET Kft. (2006): Kutatás a munkavállalók mobilitásával kapcsolatban Magyarországon (Research concerning employees' mobility in Hungary)

Mobility of the population largely varies with countries. It is the highest in the Northern countries (e.g. 29% in Iceland, 23% in Sweden and 21% Norway), Australia (24%) and the United States of America (21%). In contrast, there is a low mobility in the Eastern and South-Eastern countries (4% in Slovenia, Slovakia and Poland, 5% in the Czech Republic and Portugal, 8% in Greece, Hungary and Spain, 9% in Italy) (Caldera Sánchez, A. and Andrews, D. (2011).

Zimmermann (2004) states concerning working that people in Europe are less mobile than in America. He explains it partially with the fact that many people are not ready to leave their usual social and community environment.

For mobilizing workforce capacity for moving from a region to another, readiness for mobility shall be increased, mostly by financial and material means. The average Hungarian citizen changes residence less than twice during her/his life, while this figure is about 6 in Western Europe and about 8 in the USA.

Researcher's assumptions (hypotheses)

This research aims at reviewing the way of thinking of company executives about workforce mobility and whether they regard as a problem that the readiness of the Hungarian people for mobility is rather poor. Motivation of this research was to confirm the following assumptions:

- Level of mobility shows regional disproportions, there is a difference in how serious companies in Eastern and Western parts of Hungary find this issue;
- Extent of problems originating from immobility rises with increasing number of company employees;
- In addition to regional heterogeneity in level of workforce mobility, there are differences also in sectoral terms.

Applied research methods, description of research

Hungarian companies were used as population to be investigated within this research. As baseline, many statistics are available concerning company structure, companies' regional distribution, activities, ownership and number of employees. This huge quantity of information with regard to the economic members has revealed that there are many approaches to this issue.

Obviously, investigation of the total population is not possible; there are numerous ways for selection of samples to be researched. In random sampling, population elements to be investigated are involved in the sample by a kind of "lot drawing". In this case, statistical reliability of research data is usually characterized by standard error or confidence interval of the sample. Confidence interval is interpreted so that research data obtained with the specified sample size diverge from the hypothetical result that could have been attained by questioning each member of the target group to be researched – in our case all the companies – with a probability of 95% at the most.

The value of confidence interval depends on the sample size rather than the target group size; in the case of a sample with 1000 elements it can be a divergence of 3.2% of the found result from the real – unknown – value. In the case of sample with less than 300 elements, the possibility of sampling error grows radically; use of smaller samples methodologically is not recommended. Considering all

this, data of 119 companies (with statistical headcount of about 150 thousand persons in 2013) could be collected in the research, actually by random sampling via direct contact.

Sample reliability could have been attained by layering the sampling, specifying layering criteria relevant to research focus and approach directions.

Deep-going analysis of data is not relevant due to the relatively small number of database elements. Data have been recorded in SPSS database (and Excel) and, by the help of the software program, numerous tables have been constructed and many computations have been carried out; however, rate of reliability and significance of the obtained data (e.g. when reviewing correlation) do not reach the expected statistical threshold. Therefore, during data processing, I had to limit my work to the distribution of tables, simple cross-tables and average computations.

When interpreting the data, I did not investigate the workforce mobility, but opinions concerning mobility. As most of the questionnaires were filled in by CEOs or HR managers, we can say that answers contain the opinion of the most competent person within the company.

Description of companies involved in the research

Respondents come from 18 out of the 19 industries defined based on sectoral classification of the Hungarian Statistical Office (KSH). Representation of transportation companies is with their share of 22.7% is outstanding, followed by processing industries with 16.8%. The third place belongs to companies in other services with 13.4%, energy industry and trade are on the fourth and fifth places with 7.6% each. Companies of construction industry and the ones engaged in water supply are represented by a rate attaining 5%. Three quarters of employees "affected" by research work in the first 3 sectors, and together with the other four mentioned sectors, this number surpasses 94%. That is why, in sectoral approach, the mobility research results mirror mainly the circumstances characteristic of these industries.

In terms of majority owner and the belonging employment data of the companies involved in this research, the distribution is disproportionate. Number of companies owned by local governments is low (2) to such an extent that – for the sake of simplification – I will handle them together with state-owned companies (*Table 3*).

Table 3. Distribution of companies by ownership, edited by Sebők, M.
3. táblázat: A vállalkozások tulajdonviszony szerinti megoszlása, Szerk. Sebők M.

Classification by ownership	Number of research participants (pieces)	Distribution in %	Total number of employees (persons)	Distribution in %
State	68	57,100	104,910	70,080
Local governments	2	1,700	788	0,530
International	26	21,800	41,731	27,880
Hungarian private	23	19,300	2,270	1,520
Total	**119**	**100,000**	**149,699**	**100,000**

In this research, national companies are overrepresented; in 58.8% of sample member companies 70.08% of indirectly involved employees are engaged. International enterprises, being with their share of 21.8% on the second place in terms of ownership, have 27.88% of employees, i. e. more than their share. Despite the fact that Hungarian private companies are represented by 19.3% among research

participants, the share of their employees makes 1.52% only. They are mostly (2/3) micro- and small businesses, only one single Hungarian private company can be classified as large enterprise.

Like the local governments and state-owned categories, I handle also micro- and small businesses together (*Table 4*). Only 3 micro-businesses filled in my questionnaire.

Table 4. Distribution of companies by company size, edited by Sebők, M.
4. táblázat: A vállalkozások cégméret szerinti megoszlása, Szerk. Sebők M.

Company size	Number of companies (pieces)	Distribution (%)	Number of employees (persons)	Percentage in sample
Micro- and small businesses	22	18,490	491	0,330
Medium-size business	37	31,090	6,779	4,530
Large companies	60	50,420	142,429	95,140
Total	119	100,000	149,699	100,000

We can improve size-based classification of companies, if we do not rely on statistical categories but we ourselves define new categories based on statistical headcount.

Based on this concept, we obtain the following distribution (*Table 5*).

Table 5. Statistical number of employees in 2013, edited by Sebők, M.
5. táblázat: Statisztikai foglalkoztatott létszám 2013-ban, Szerk. Sebők M.

Number of employees (persons)	Sample participants (pieces)	Distribution in %
1-50	22	18,5
51-250	37	31,1
251-1,000	36	30,3
1,001-2,000	11	9,2
Above 2,000	13	10,9
Total	119	100,0

Analysis of opinions concerning workforce mobility

Workforce market is a dynamic system; its current state is cause and effect at the same time. Immobility of the Hungarian workforce is – without any scientific approach – a commonplace fact. We do not need to consult lot of economic periodicals to find company executives complaining about skilled workers deficit. Company executives give a number of reasons such as housing situation in Hungary (attitude adhering to ownership, missing flats to let satisfying high-level demands), continuous presence of deficiency crafts as output of the educational system, problematic access to peripheral settlements and industrial parks as well as lack of community and cultural life in smaller settlements.

Consequences of immobility are also numerous like decreasing inflow of working capital, regional characteristics of unemployment (such as impoverished settlements, villages with ageing population, real property losing value) can be observed.

However, we shall remember that based on estimates – contradicting what is listed above – in early 2013, about 350,000[2] Hungarian citizens lived abroad[3], i.e. have become mobile. (Whether it is high

[2] Note: people who left Hungary in the period after 1989 and one year before the survey.

[3] Central Statistical Office 2014: Transnational co-operation project SEEMIG – Managing Migration in South East Europe, press release "Helyzetkép a magyarországi elvándorlásról" (Snapshot about transmigration from Hungary) source: http://www.ksh.hu/docs/szolgaltatasok/sajtoszoba/seemig_sajto_reszletes.pdf

or low, is an issue of relativity; as compared to migration of Romanian employees, it is low while to Czech mobility it is high), (Gödri, I. 2012).

Based on inland migration data of Hungary, readiness of the Hungarian population for migration is rather low (Dövényi, Z. 2009). There are opinions explaining migration with low-level mobility of Hungarian employees and with the national character. However, the relatively low level of migration is continuously increasing and we have to find also an explanation for growing numbers of people seeking work abroad, not only register and describe the process (Hárs, Á. 2011). The majority of groups leaving Hungary we can surely describe as motivated, creative, young and skilled people (and/or). It is worth mentioning that further increase of migration to abroad – revealed by different youth-related researches – may change the general opinion, i.e. regional workforce deficit originating from lack of mobility will be replaced by workforce deficit as a consequence of migration.

Level of mobility and the assessment of this problem depend on multiple circumstances – as mentioned before. My listings above approached this phenomenon from the point of view of the companies participating in the research, I neglected the employees.

At the beginning of my questionnaire, company executives had to answer the question to what extent they were satisfied – focusing on their main activity – with the available workforce supply at present and, within it, with the choice of employees with different qualifications and for different positions (*Table 6*).

Table 6. Distribution of satisfaction with the workforce choice, edited by Sebők, M.
6. táblázat: Munkaerő kínálat elégedettségi megoszlása, Szerk. Sebők M.

	Yes		Partly		No		No answer available
Are you satisfied	**Quantity**	**%**	**Quantity**	**%**	**Quantity**	**%**	**Quantity**
with the choice of unskilled workers?	57	69,5	20	24,4	5	6,1	37
with the choice of trained workers?	54	62,1	30	34,5	3	3,4	32
with the choice of skilled workers?	32	31,1	51	49,5	20	19,4	16
with the choice of administrative employees*?	86	74,8	28	24,3	1	0,9	4
with the choice of professionals with higher-level education?	47	40,5	57	49,1	12	10,3	3
with the choice of medium-level and top managers?	54	46,6	49	42,2	13	11,2	3

*"Including all general and supporting office activities irrespective of education."

Percentage given in the above table shows the rate within the respondents of the given category, i.e. the cases where the question was regarded as relevant.

The distribution of answers meets expectations: company executives are the least satisfied with the choice of skilled workers, and more than a half of respondents have or may have problems with filling positions requiring professionals with higher education as well as medium-level and top manager positions. For administrative positions, suitable employees can be found almost every time and everywhere.

Workforce shortage can be observed in an increasing number of fields in Hungary; thoughts in study of Giguére (2008) may offer a solution for this problem:

- Theoretically, immigration is useful for each developed economy, especially if we take the fact into account that Europe's society is aging. For compensation of drawbacks originating from it and from disappearance of particular qualifications, immigration shall be encouraged and integration of new-comers shall be furthered.
- A closer co-operation between organizations for labour market development with the local companies and research centres would be advisable where internal circumstances of the individual fields should be considered stronger.
- Reorganization of the labour market is a long-term and risky process in which interests of the local companies shall dominate rather than national political concepts.

In order to attain the above goals, first of all, restructuring of skilled workers education and labour market organization is necessary.

Demand for different types of workforce may depend on various factors; we investigate it in regional aspects at first (*Table 7*), for the types only where dissatisfaction with workforce supply is high.

Within it, we focus on the category of skilled workers because:

During interviews, company executives often complained about shortage of skilled workers – especially in metallurgy;

Multiple mobility programs were launched – as pilot programs – in the past years, see "Metallurgical vocational training cluster program in Győr and its agglomeration";

The Hungarian government treats skilled workers training as a priority, that is why the dual training system was introduced in autumn 2013.

Table 7. Choice of skilled workers at regional level, edited by Sebők, M.
7. táblázat: Szakmunkások munkaerő kínálata régiók szintjén, Szerk. Sebők M.

Yes Partly			Are you satisfied with the choice of skilled w orkers considering the main activity of your company?			Total
			No			
Region of the company seat	Southern Great Plain	Quantity	2	3	4	9
		% within the region	22,20%	33,30%	44,40%	100,00%
	Southern Transdanubia	Quantity	4	4	1	9
		% within the region	44,40%	44,40%	11,10%	100,00%
	Northern Great Plain	Quantity	7	12	3	22
		% within the region	31,80%	54,50%	13,60%	100,00%
	Northern Hungary	Quantity	3	3	1	7
		% within the region	42,90%	42,90%	14,30%	100,00%
	Central Transdanubia	Quantity	2	7	0	9
		% within the region	22,20%	77,80%	0,00%	100,00%
	Central Hungary	Quantity	12	19	6	37
		% within the region	32,40%	51,40%	16,20%	100,00%
	Western Transdanubia	Quantity	2	3	5	10
		% within the region	20,00%	30,00%	50,00%	100,00%
Total		Quantity	32	51	20	103
% within the region		31,10%	49,50%	19,40%	100,00%	

Data quantity only allows us to outline the trends, we cannot make general statements. Figures do not cause large surprise. Satisfaction with the choice of skilled workers is the highest in the regions where unemployment is the highest (Northern Hungary, Northern Great Plain, Southern Transdanubia), i. e. there are excess capacities; and companies are the least satisfied in the developed Transdanubia where, in large investments, companies often face workforce shortage (in Győr, workforce is imported from Slovakia, just as an example). Strong dissatisfaction can be observed in Western Transdanubia (surprisingly, in addition to Southern Great Plain), however, due to small number of this target group, drawing further conclusions would not be relevant. Surely, there are regional differences in assessment of mobility; its level could be cleared in an additional research. Of course, there are dissatisfaction and shortage in areas only where demand is present.

Evaluating satisfaction with choice of skilled workers based on company size, we find no essential difference among the companies of different size. Yet, extent of clear dissatisfaction shows deviation: medium size companies in terms of statistics can find skilled workers the most difficultly.

Approaching the same question based on ownership of companies, enterprises with Hungarian owners are the least satisfied while state and local government owned companies are less satisfied than international enterprises. Presumably, in these cases, it is about differences in competitiveness of compensation offered by companies. A Hungarian private company is less attractive for employees than enterprises with international background, presumably because of differences in the offered

wages. Smaller Hungarian private companies are in an especially difficult situation (their level of dissatisfaction is high), probably due to their handicap in competition.

In addition to work groups, I asked also a summary question about problems caused by low-level workforce mobility.

"Do you regard low level of workforce mobility as a problem in Hungary from point of view of the main activity of your company?"

The opinion of company executives about workforce mobility definably varies with the size, business activity and geographical location of their enterprise. Employers assessed the importance of problems caused to the company by the low-level mobility on a scale from 1 to 10 with assigned definitions to the end points and the middle point. (1 represented "It does not cause any problems at all", 5 "It causes problems partially", and 10 meant "severe problem".) The meaning of these three points helped the respondent answer the question; information was processed by averaging the specified nominal values. Companies find the low level of mobility as a problem of medium importance or a little bit less than medium importance averaging 4.51. These deviations can be observed in the case of each depending variable. Averages computed based on company ownership are demonstrated in *Table 8*.

Table 8. Assessment of workforce mobility level – based on ownership, edited by Sebők, M.
8. táblázat: Munkaerő-piaci mobilitási szint értékelése, tulajdonviszony alapján, Szerk. Sebők M.

Majority owner of the organization	**Average**	**Quantity**	**Standard deviation**[4]
State and local governments	4,16	70	2,453
International	4,88	26	2,471
Hungarian private owner	5,17	23	1,85
Total	4,51	119	2,375

It can be seen that Hungarian private companies regard the low level of workforce mobility as a larger problem, its value is 5.17. In this case, also standard deviation of the values is lower, meaning that opinions are closer to each other. Also international organizations specified an over-average value, 4.88 for this question while state and local governments owned enterprises assessed this problem at a value of 4.16. The higher value measured with Hungarian private companies can be explained by their competition handicap already mentioned and also by their assumable characteristics. This latter may include that their skilled labour need is higher compared to the international organizations in the sample while international enterprises employ trained workers in a higher proportion – of course, depending on their sector. The relatively favourable value of state and local governments owned organizations can be clearly attributed to the large employers involved in the sample; replenishment of their employees is directly supported by the school system, too.

[4] Note: Standard deviation measures the size of deviation of values from the expectable value (mean value). It is the root of a square number, we square the deviation of the data from the arithmetic mean, define its arithmetic mean and extract the root from it. Also the range is to be considered when interpreting. This is 10 in the case of workforce mobility level on a 1 to 10 scale. Within it a standard deviation of 2 means that there is not a too large diversity among the obtained values, it means in our case that most values are between 3 and 7.

Companies of the following industries participated in the data collection (*Table 9*):

Table 9. Assessment of workforce mobility based on industry classification, edited by Sebők, M.
9. táblázat: Munkaerő-piaci mobilitási szint értékelése, ágazatok szerint, Szerk. Sebők M.

Sectorial classification of the company's main activity	Average	Quantity	Standard deviation
Processing industries	5,55	20	2,35
Electricity, gas. vapour supply, air conditioning	4,44	9	2,404
Building industry	6,29	7	1,254
Trade, vehicle repair	4,67	9	2,598
Transportation and warehousing	3,63	27	2,169
Water supply	4,5	6	2,588
Other services	4,13	16	2,306
Others combined	4,36	25	2,481
Total	4,51	119	2,375

Most of the companies involved in the reviewed sample came from transportation and warehousing (27 enterprises), they are followed by members of the processing industries (20) and companies belonging to the Other services category (16). I combined the categories Electricity, gas, vapour supply, air conditioning and Water supply (5) – considering that all these activities belong to public utilities –, thus, 15 enterprises with such activity are included in the sample. 78 companies participating in the research do business in these four sectors, representing a share of 65.5%. The number of employees engaged in these sectors is rather decisive, too: 83.94% of the employees engaged by the employers participating in the research belong here. There are essential differences among sectors.

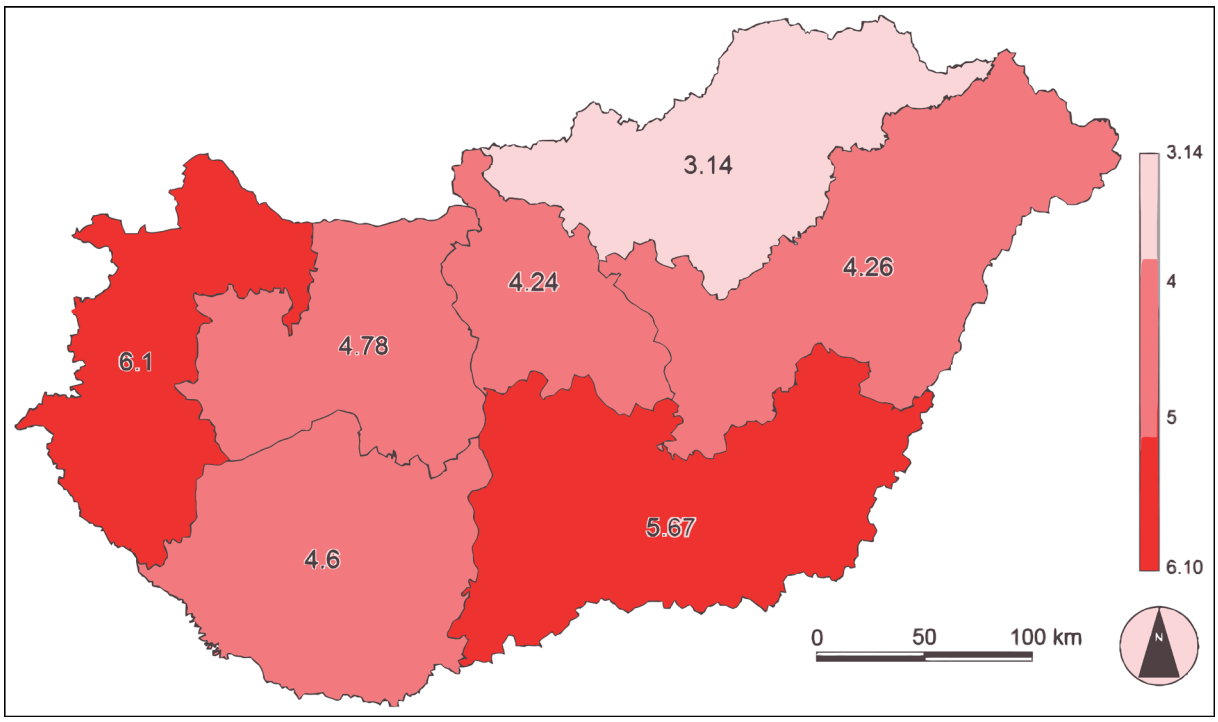
In the industries of assessable size, the low level of mobility means the largest problem for the processing industries (5.55) while the average value measured in transportation and warehousing sectors shows that they do not have problems originating from workforce mobility. The high value measured at businesses in the construction industry is surprising and is to be handled carefully because of the number of sample elements; it somewhat contradicts the low problem value obtained for skilled workers (*Table 7*).

Data measured in the energy and water supply sector approximate the average the best. Summarized we can draw the conclusion that the low-level mobility as a phenomenon is present and perceived by employers, yet, the lack of mobility is regarded as a problem of less than medium importance.

In regional aspect, the low-level mobility causes the largest problem in Western Transdanubia (6.1) and Southern Great Plain (5.67) while it is hardly perceivable in Northern Hungary (3.14) (*Figure 2*). Based on standard deviation measured in this case, opinions are formulated almost the same way.

Exploration of reasons for the high value in Southern Great Plain requires additional investigations, including also the migration level and traditional agriculture of this region.

Fig. 2. Workforce mobility level by regions, edited by Sebők, M.
2. Ábra: Munkaerő-piaci mobilitás szint régiók szerint, Szerk. Sebők M.



The lack of workforce mobility means the least problem – in terms of company size – for micro- and small businesses (4.05–4.1) while the largest problem for medium size enterprises (4.97), but even this value is below the absolute mean value (5). The value characterizing the large enterprises (4.38) is between the two other categories, although the participation ratio of this category alone is higher (50.42) than that of the other three company sizes in total.

We get a somewhat deviating picture when investigating with the headcount variables defined by us (*Table 10*).

Table 10. Assessment of workforce mobility, based on statistical headcount typing, edited by Sebők, M.
10. táblázat: Munkaerő-piaci mobilitási szint értékelése, statisztikai létszám tipizálása alapján, Szerk. Sebők M.

Statistical number of employees in 2013. grouped	Average	Quantity	Standard deviation
1-50	4,09	22	2,369
51-250	4,73	37	2,567
251-1.000	4	36	2,378
1,001-2,000	5	11	1,342
Above 2,000	5,62	13	2,256
Total	4,51	119	2,375

In this case, we can see that the really large companies face more severe problems in workforce replenishment/hiring. The more employees are engaged, the more structured is the company and the more types of workers are needed, thus, continuous recruitment and selection become necessary.

Summarizing all that is described above, problems originating from lack of workforce mobility affect the members of the economy to different extents from the investigated points of view. In spite of the sample-related anomalies, regional and sectoral tendentious differences are well definable, but

extent of problems depends also on the company size and the type of ownership. If we want to formulate the extremities demonstratively, we can say that the Hungarian mid-size businesses with some company sites at the most and located in the Western part of the country, working in the processing industries are in the most difficult situation on the workforce market. In addition to cross-border commuting – not mentioned until now –, the multinational companies settled in the region mean competition for them and they remain behind when it comes to workforce recruitment and retention. State-owned large companies located in handicapped regions are in the most advantageous situation in human policy aspects; municipal services provided by them are supported also by the school system, and offer a calculable career, they are attractive on the workforce market.

RESEARCH SUMMARY AND CONCLUSIONS

In my research, I could confirm based on the opinion of companies that there were differences in workforce mobility when investigating different regions and reviewing companies working in the Eastern or Western part of the country. My hypothesis that the level of labour market mobility shows regional discrepancies in assessment of the problem severity has been confirmed. The low-level mobility causes the largest problem in Western Transdanubia (6.1) and Southern Great Plain (5.67) while it is hardly perceived at all in the North-Hungarian region (3.14). A connection can be observed between unemployment rate and assessment of problem severity: the lower the unemployment rate in an area, the larger the problem of workforce immobility for employers (*Table 11).*

Table 11: Assessment of labour market mobility level and unemployment rate, by regions , edited by Sebők, M.
11. táblázat: Munkaerő-piaci mobilitási szint értékelése és munkanélküliségi ráta, régiók szerint, Szerk. Sebők M.

Region of company seat	Average	Quantity	Standard deviation	Unemployment rate %[5]
Southern Great Plain	5.67	9	2.872	10.1
Southern Transdanubia	4.6	10	2.221	7.7
Northern Great Plain	4.26	23	2.158	12.7
Northern Hungary	3.14	7	1.069	9.3
Central Transdanubia	4.78	9	2.682	6.2
Central Hungary	4.24	51	2.446	7.3
Western Transdanubia	6.1	10	1.912	5.1
Total	**4.51**	**119**	**2.375**	**8.3**

Scarce supply of workforce means the largest problem for employers in Western Transdanubia where the unemployment rate is the lowest. In contrast, in regions with higher unemployment rate, getting the adequate workforce is a smaller problem for employers surveyed. Of course, results are greatly influenced by the fact what industry is in question, what specific professionals a company in a region needs and which industry the companies surveyed belong to.

I could confirm the fact that company size affected assessment of mobility level when changing (in the SPSS system) the traditional statistical categories (instead of company sizes, I typed headcounts) and, on this basis, it was proved that larger enterprises were more affected by the lack of mobility than smaller businesses.

[5] Unemployment rate, January–March 2014, KSH, Gyorstájékoztató, Source: http://www.ksh.hu/docs/hun/xftp/gyor/mun/mun21403.pdf, date of download: 03.09.2014

Based on the analysis of mobility level by industries, sectoral differences could be revealed, nevertheless, due to sectoral differences of available quantity of data, statements call for further confirmation. From the companies involved in the research, lack of mobility causes larger problems in the processing industries (5.55), their values obtained are much over the average (4.51). Lack of mobility is the least problematic in transportation and warehousing based on the respective value (3.63).

Research of mobility of employees would remain one-sided when investigating it from the point of view of employers only. For creating balance between workforce demand and supply, two parties are necessary: employers and employees. Therefore, empirical investigation of both sides is required for understanding and analysing workforce mobility and for making proposals for development.

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