Perceived Opportunities by Social Enterprises and their Effects on Innovation

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SUMMARY

Social enterprises can play an important role in reducing inequality within a society and can also contribute to long-term economic development. Using a database based on the responses of 220 Hungarian social enterprises we first identify the business opportunities that they perceive. We conclude that social enterprises operating in different legal forms have different perceptions of their opportunities, and we speculate that this has an effect on their innovation activity as well. It is striking that – with the exception of social cooperatives – none of the Hungarian social enterprises see current or future social and/or market needs and demand as a major opportunity. This suggests that only social cooperatives have the incentive to focus their innovation efforts on social and market needs. Almost all social enterprises, on the other hand, have high expectation for European Union funds; the threat is that social innovation is driven by the targets set by the authorities allocating European funds, instead of the needs of the society.

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INTRODUCTION

The most influential theoretical works published in the field of economic theory in the last two decades have all emphasised that the unprecedented growth in wellbeing in the West can be attributed to such related factors as the equality of citizens as regards to their rights, obligations and opportunities, political pluralism, and inclusive economic institutions (North et al. 2008; Acemoglu & Robinson 2012; McCloskey 2016). It has also been observed in the last decades that income and wealth inequality has been on the rise in developed nations (Piketty 2014), while median income has been dropping, or stagnating at best (Brynjolfsson & McAfee 2014). Calculations made by Nolan et al. (2018) show that there is an increasing gap between real GDP per capita and average household median income in many Western countries, including Hungary. In the period 1979–2014 the real GDP per capita increased by 80% in the USA, while median household income only grew by 15%. According to official statistics, Hungarian real GDP per capita had grown at a mere 1% in this period, while according to Nolan et al.'s calculations the median household income growth rate was over 2% less than that, so it actually decreased in this period (Nolan et al. 2018).

The increasing income gap threatens to destroy the equality of opportunity (the foundation stone of the Western societies), and so it threatens long-term growth prospects as well. One of the main goals of social innovation is to decrease income inequality. But, as stated above, equality is one of the keys to economic growth, so social innovation can also generate long term growth. As social innovation is primarily carried out by social enterprises, in this study we focus on them and on their perceived opportunities. Social innovation can also contribute to goals related to sustainable development, another issue that is regarded as crucial by many (Kis-Orloczki 2019).

The first section of this study gives an overview on the general connection between social innovation and social entrepreneurship. In the second section the data and methods are introduced, while the third section presents an analysis of the perceived opportunities of social enterprises. The study ends with a short conclusion section.

LITERATURE REVIEW ON SOCIAL INNOVATION AND SOCIAL ENTREPRENEURSHIP

The literature on social innovation and social entrepreneurship is very diverse. An OECD report compiled in 2010 lists nine definitions for social innovation (OECD, 2010, pp. 214-215), and twenty-nine for social entrepreneurship. Some of the definitions are very simple, which gives room to various interpretations; some others are extremely complex. According to Mulgan, social innovation is a group of new and working ideas that target social needs that were not satisfied before (Mulgan et al. 2007).

The more complex definitions typically also stress the collective nature of social innovation (Lazányi 2017). Westley and Antadze define social innovation as "the complex process of introducing new products, processes or programmes that profoundly change the basic routines, resource and authority flows, or beliefs of the social system in which the innovation occurs" (Westley & Antadze 2010, p. 2). When comparing it to traditional, Schumpeterian innovation, the LEED programme of OECD defines social innovation as a process that "is not about introducing new types of production or exploiting new markets in itself but is about satisfying new needs not provided by the market (even if markets intervene later) or creating new, more satisfactory ways of insertion in terms of giving people a place and a role in production" (cited by Nicholls et al. 2015, p. 3). After reviewing a number of options, Nicholls et al. finally settle on the following definition: "varying levels of deliberative novelty that bring about change and that aim to address suboptimal issues in the production, availability, and consumption of public goods defined as that which is broadly of societal benefit within a particular normative and culturally contingent context" (Nicholls et al. 2015, p. 6).

Before settling for a definition, we set out the framework of our analysis. According to the Acemoglu-Johnson-Robinson (AJR) model (Acemoglu et al. 2004), the innovative effect of market competition and the horizontal relationships during competition can be sustained if the political system creates rules that strengthen them. The political system, on the other hand, is only likely to create such rules if it is pluralistic. These conditions create the best environment for long-term growth; however, there are further frictions, such as the various types of market failures and the income inequality rising from market competition. Such failures lead to the rise of government intervention. Government intervention has its well-known failures, too: disregarding the preferences of politically less active groups, low efficiency, and subpar decisions due to information asymmetries and collective action problems. As a result of these deficiencies the government can also fail in the reduction of inequality, and so the equity of opportunities, the basis of long-term growth cannot be sustained.

The primary benefit of social innovation is in its role in preventing social and economic seclusion. Although social innovation is often not measured in monetary terms (because social benefits in the form of intangible assets are a lot more important), it requires the investment and continuous use of material resources, and so the traditional business sustainability conditions apply to it as well. In other words, the selective process of market competition applies to social innovation (unlike in the case of government-run projects). We believe that social innovation should be defined in a way that excludes the government sector, and as a process that is primarily regulated by market competition. In this interpretation social innovation is a product, service, process or resource allocation method that is introduced to take care of partially or completely new market needs, its main goal is to achieve social benefits, and it is controlled by the selective forces of market competition.

Social innovation projects may be undertaken by many different agents. For-profit businesses are often involved in such projects; corporate social responsibility has given rise to many such examples in recent years. The government may also undertake social innovation projects (through government-owned enterprises, for example). However, the ultimate goal of for-profit businesses is profit maximisation; for the government it is vote maximisation, so we are safe in assuming that the majority of ideas producing social benefits would come from other agents. These other agents are similar to traditional businesses, on the one hand, because they need to raise their own revenues for their operation. But they are also similar to the government on the other hand, because they aim to achieve social benefits. These agents defined by a double bottom line will be called social enterprises in this study.

How can an idea that aims to achieve social benefits be financially sustainable if it has to compete with ideas that were either selected to generate profits (and so should be more efficient from a financial point of view), or are financed from tax revenues (so are not under revenue-generating pressure)? A theoretical answer can be easily phrased by relying on the fundamentals set forward in this study, but the practical answer can be more problematic. The following possibilities can be mentioned:

1. The social enterprise operates in a market where transaction costs are so high that the traditional business model is not efficient (e.g. cooperatives).
2. It offers ideas and products that are highly valued by the community, and so consumers are willing to pay a higher price than the market average (e.g. organic products, locally produced goods, handcraft goods).
3. They are small and so they can better focus on the real needs of the community, and the incentives to make a meaningful effort are much stronger than in large government-run projects.

4. They are entitled to a government subsidy that is paid according to some performance indicator (e.g. charter schools).

Social enterprises are the main initiators of social innovation projects. They compete with either business entities or government agencies for survival. Their operation is based on real needs of the community, and their successful operation is highly influenced by the institutional environment. The rules of the game and the legal form of their operation are important factors in the operation of social enterprises. Innovations generated by these firms also depend on factors the managers believe are the most important for the future development of their firms. The second part of the study focuses on these issues by investigating the perceived opportunities of the social enterprises.

DATA AND METHODS

The data for this study come from a survey that was conducted by the Faculty of Economics, University of Miskolc in 2017 by a team lead by Éva G. Fekete and Ágnes Horváth Kádárné. The survey was sponsored by the Hungarian Employment Agency OFA, within the project called PiacTárs – Priority project for the support of social enterprises, and for the creation of a sustainable and competitive social economy. A total of 220 social enterprises were surveyed, 46 of which were non-profit limited liability companies (NLtd), 57 associations (Assn), 39 foundations (Fdn), and 59 social cooperatives (SC).

The objective of this study is to identify the business opportunities offered by the environment as perceived by the managers of social enterprises and to detect the differences among them according to their legal form. A partial SWOT analysis was conducted in order to detect the special characteristics of the different legal forms. The survey offered 15 possible factors that can create business opportunities, and managers were asked to pick the ones they felt were the most significant for their organisations. During the analysis we ranked these factors according to the number of mentions in our sample, and we also calculated the rank for the four different legal forms. To make the rankings easier to read, in this study we only discuss those factors that achieved at least 10% of mentions, so at least 10% of the respondents picked them as a significant opportunity for their organisations.

RESULTS AND DISCUSSION

When broken down according to legal form, the factors mentioned in Table 1 are those that managers perceive as the most important opportunities for their organisations. There are two columns for each type of social enterprise. The first column shows the rank of that given factor according to the number of mentions (e.g. the third most frequent opportunity selected by the managers of social cooperatives was the "More EU funds" option); the second number shows the share of respondents who chose that given factor (e.g. 13% of the SC managers selected "More EU funds" as a significant opportunity for their organisation). The final column of Table 1 (Dif.) shows the rank gap of the given factor among the different legal types (e.g. the highest rank of "More EU funds" is 3rd, the lowest is 14th, so the Dif. column has a value of 13-4=9).

Table 1
Most important perceived opportunities for Hungarian social enterprises (n=220)

Factor	SC		NLtd		Assn		Fdn		Dif.
More EU funds	**3rd**	**13%**	**3.**	**17%**	14.	1%	3.	9%	9
More private funds from individuals	14th	1%	11th	3%	**2nd**	**14%**	10th	5%	12
Better image of the sector in the society	9th	4%	**2nd**	**20%**	5th	7%	5th	8%	7
Better opinion on the sector by politicians	11th	3%	**4th**	**16%**	6th	7%	5th	8%	7
Higher market demand for the products/services	**2nd**	**16%**	13th	1%	**4th**	**10%**	6th	7%	11
Higher social need for the products/services	**1st**	**26%**	8th	3%	13th	1%	**1st**	**17%**	12
Improvements in economic environment of the country/region/settlement	4th	8%	**1st**	**21%**	**1st**	**14%**	8th	6%	7
More willingness for volunteer work	5th	7%	6th	6%	**3rd**	**10%**	**2nd**	**13%**	4

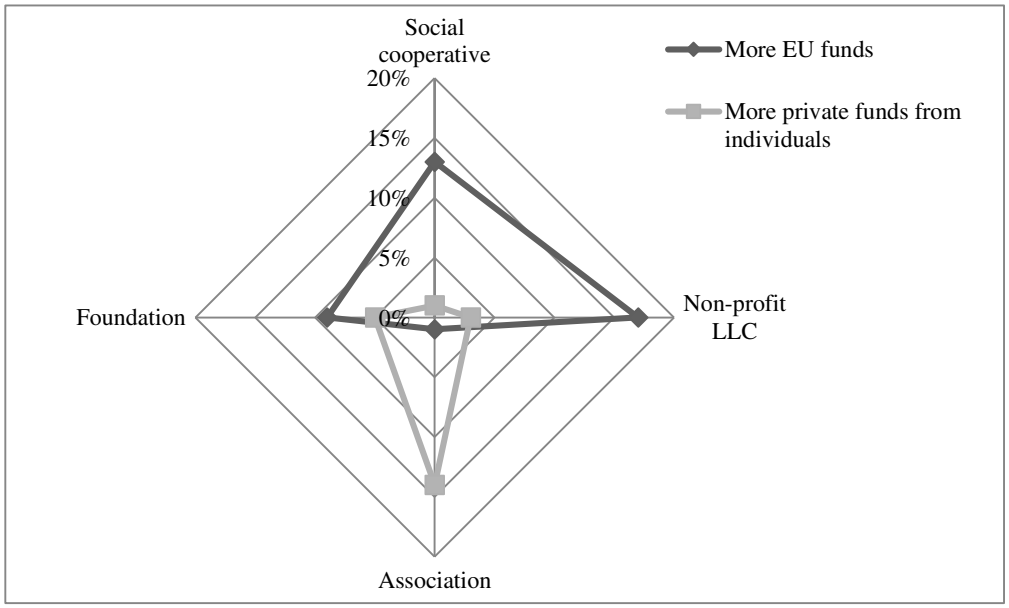
SC = Social Cooperative; NLtd = Non-profit limited liability company; Assn = Association; Fdn = Foundation.
Source: own calculations based on G. Fekete et al.'s survey (2017)

Table 1 is not the easiest to review, but it still gives a good idea about the most important perceived opportunities, and it also shows quite clearly that there are considerable differences among social enterprises with different legal forms (see the "Dif." column of Table 1). Figures 1 to 4 give a clearer picture of these differences.

Figure 1 compares two possible opportunities ("More EU funds" and "More private funds from individuals") among the four types of social enterprises. NLtds and SCs perceive the "More EU funds" option as one of the most important opportunities; for Fdns it is still ranked high, but it only has a 9% share, while it is only ranked 14 (out of 15) among Assns, with only 1% of the respondents picking this option. Those organisations which do not see the EU funds as an opportunity have to rely on private funds. Figure 1 gives a very clear picture of this substitution effect.

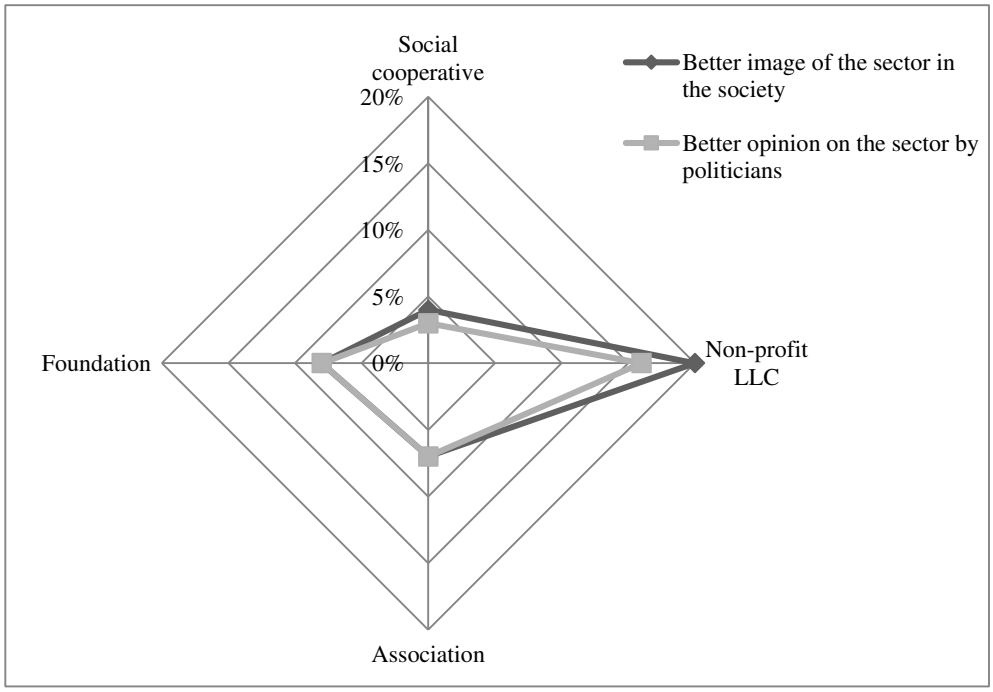
Other responses gained from this survey show that NLtds and SCs are by far the most business oriented in nature (meaning that they are the ones that rely on market revenues the most). Figure 1 also makes it clear that even these business oriented organisations want to rely on EU funds, and so are likely to focus on the preferences of the fund allocation authorities.

Figure 2 presents the evaluation of two factors that typically are fairly strongly correlated: the current image and future changes in the image of the non-profit sector in the society in general, and among politicians, or the political scene in particular. The two factors received similar mentions within all subcategories of social enterprises, but there are differences among the different legal forms. NLtds especially regard these two options as a significant opportunity, while the other legal forms, and particularly the SCs, are sceptical about them. This is especially bad news for Fdns and Assns, since according to the textbook business models these organisations should rely on a mix of private and public funds the most.



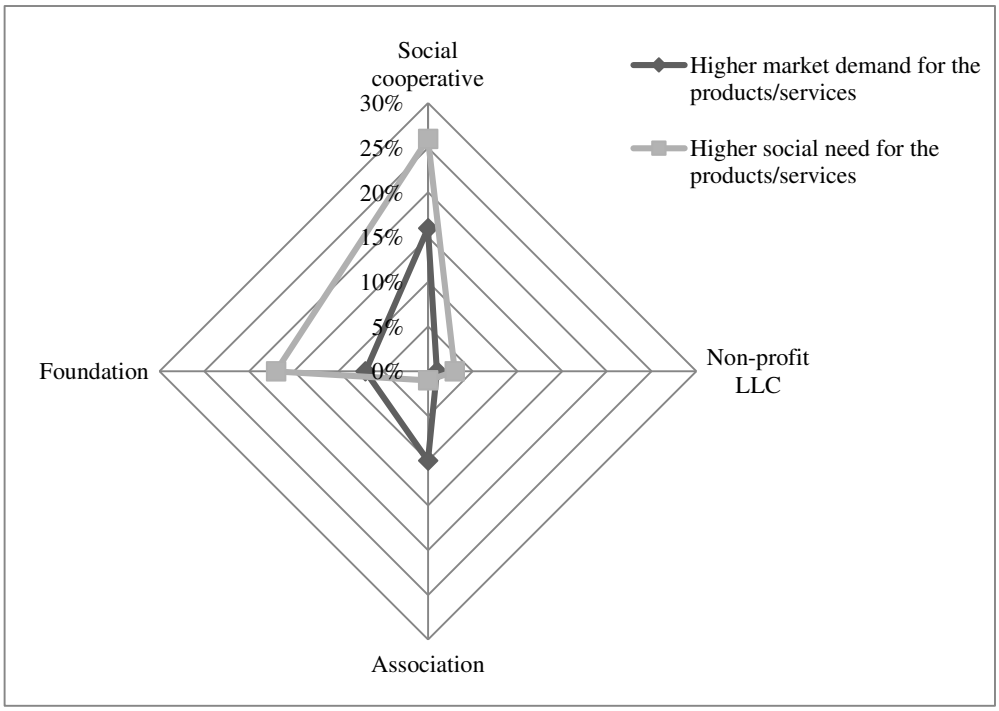
Source: own calculations based on G. Fekete et al.'s survey (2017)

Figure 1. Share of mentions of "More EU funds" and "More private funds from individuals" as an opportunity, by the four legal forms of social enterprises



Source: own calculations based on G. Fekete et al.'s survey (2017)

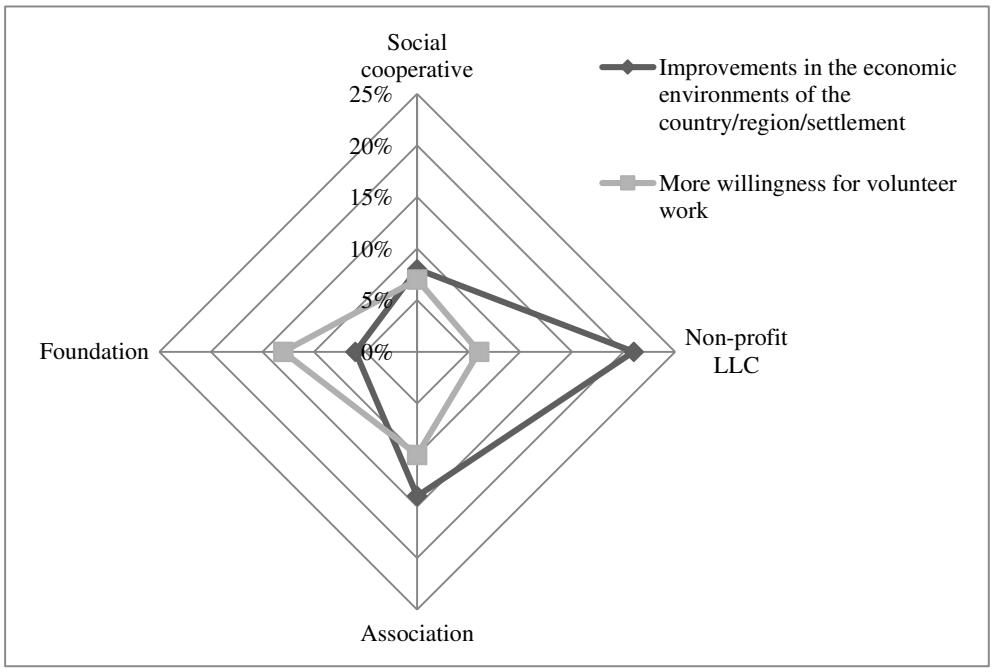
Figure 2. Share of mentions of "Better image of the sector in the society"and "Better opinion on the sector by politicians" as an opportunity by to the four legal forms of social enterprises



Source: own calculations based on G. Fekete et al.'s survey (2017)

Figure 3. Share of mentions of "Higher market demand for the products/services" and "Higher social need for the products/services" as an opportunity, by the four legal forms of social enterprises

As shown by Figure 3, the majority of social enterprises are sceptical about the possibility of a positive change in the market demand or in the social need for the products and services offered by them. Again, significant differences exist in their perception according to the legal form of operation. The contrast is most striking in the case of market demand, and between NLtds and SCs. As already mentioned, these two types of enterprises rely the



Source: own calculations based on G. Fekete et al.'s survey (2017)

Figure 4. Share of mentions of "Improvements in the economic environments of the country/region/settlement" and "More willingness for volunteer work" as an opportunity, by the four legal forms of social enterprises

most on market revenues, and this makes the contrast even more alarming. By comparing Figures 1, 2 & 3, we can conclude that the managers of NLtds and SCs perceive their opportunities in a completely different way. NLtds aim to rely on EU funds, and public funding in general, and are sceptical about their market expansion opportunities. This approach can make them more focused on the agenda of the government and less focused on social and market needs when articulating their innovation plans. SCs, on the other hand, are optimistic about the possibility of a market expansion and are more sceptical about receiving more public funds. This may be reflected in their innovation objectives as well, which makes them the subcategory within social enterprises that is most suited to the role of generating long-term growth through social innovations that reduce inequality within the society.

The two factors included in Figure 4 are not as closely related to each other as the previous ones. The better economic environment is most strongly seen as an opportunity by NLtds, while volunteer work is a focus of Fdns and Assns. It is according to expectations that more business oriented enterprises (SCs and NLtds) would rely less on volunteer work, but this should be reflected in innovation goals as well. Firms that want to rely more on volunteer work have to be more sensitive to social needs. As far as the economic environment is concerned, again many social enterprises (but SCs and Fdns in particular) do not get their hopes high, and do not expect that they could profit from an improvement in the economic conditions. This makes them more reliant on public funds.

CONCLUSION

The role of social enterprises is crucial in an environment where the growth rate of the typical (median) income falls behind the rate of economic growth (or in extreme cases median income even decreases). The widening median income – real GDP gap decreases the opportunities of many citizens and slows down the long-term growth rate. Social innovations carried out by social enterprises can reduce both market and government failures and can offer better solutions to social challenges, and so they can contribute to a fairer society that gives more equal opportunities to its citizens.

Social enterprises may fulfil this key role only if there is no considerable difference between the theoretical model presented in this study and the actual perception of managers about their role and opportunities in the society. In this study we have pointed out some warning signs. The majority of the social enterprises surveyed in 2017 do not see the increase in market demand and social needs as a realistic opportunity in the near future. If market and social needs do not represent a significant opportunity for them, this may be reflected in their innovation projects, too, more precisely in the lack of social/market focus of these projects. There are exceptions, though, especially the social cooperatives, which are closest to our theoretical model in this sense.

If the needs of the market or the society are not in the focus of the innovation strategy of these social enterprises, other factors determine the priorities. Social enterprises may turn towards stakeholders that could provide a safer and more predictable access to resources. Volunteers, public organisations, and EU organisations are such possible stakeholders. Only associations expect considerable help coming from private sources (and foundations have positive expectations about volunteer work). Foundations, social cooperatives and non-profit limited liability companies see public funds, especially EU funds, as a safer and more promising option. Non-profit Ltds are optimistic about internal public funds, too (since they see the better opinion on the sector by politicians as a significant opportunity).

These results suggest that the primary task in most of the social enterprises is not to sell their social innovation ideas to the market or to the society but rather to the government (be it at the national or the European level). To be more precise, the managers of the majority of the surveyed social enterprises see a much bigger opportunity in receiving public funds for their social innovation projects than in relying on market demand. We have also shown that the reliance on public funds is increased by the fact that many social enterprises do not expect to profit from an improvement in the economic conditions of their immediate or wider environment.

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REFERENCES

ACEMOGLU, D & ROBINSON, J. A. (2012). Why Nations Fail. New York: Crown Publishing Group.

ACEMOGLU, D., JOHNSON, S. & ROBINSON, J. (2004): Institutions as the Fundamental Cause of Long-run Growth. NBER Working Paper No. 10481, http://www.nber.org/papers/w10481, https://doi.org/10.3386/w10481

BRYNJOLFSSON, E. & MCAFEE, A. (2014). The Second Machine Age: Work Progress, and Prosperity in a Time of Brilliant Technologies. New York: W.W. Norton & Company.

G. FEKETE, É.,BERECZK, Á.,KÁDÁRNÉ H., Á., KISS, J.,PÉTER, Z. - SIPOSNÉ N., E. – SZEGEDI, K. (2017): „Alapkutatás a társadalmi vállalkozások működéséről." Zárótanulmány az OFA Országos Foglalkoztatási Közhasznú Nonprofit Kft. megbízásából, a GINOP - 5.1.2 - 15 - 2016 - 00001 „PiacTárs" kiemelt projekt keretében (Basic research on the operation of social enterprises – a study carried out on the request of and with the funding of OFA-GINOP). Miskolc: University of Miskolc.

KIS-ORLOCZKI, M. (2019): A körforgásos gazdaság és a társadalmi innováció kapcsolata (Relationship of the circular economy and social innovation). In: Kőszegi, I. (ed): Versenyképesség és innováció – III. gazdálkodási és menedzsment konferencia előadásai, Kecskemét, pp. 808-813.

LAZÁNYI, K. (2017). Innovation - the role of trust. Serbian Journal of Management, 12(2) pp. 331-344. https://doi.org/10.5937/sjm12-12143

McCLOSKEY, D. N. (2016). Bourgeois Equality. Chicago: University of Chicago Press.

MULGAN, G., TUCKER, S., ALI, R. & SANDERS, B. (2007). Social Innovation: What it is, why it matters and how it can be accelerated. Skoll Centre for Social Entrepreneurship, Oxford, United Kingdom.

NICHOLLS, A., SIMON, J. & GABRIEL, M. (2015). Introduction: Dimensions of Social Innovation. In: Nicholls, A., Simon, J. Gabriel, M. (eds.). New Frontiers in Social Innovation Research. New York: Palgrave Macmillan.

NOLAN, B., ROSER, M. & THEWISSEN, S. (2018): GDP per capita versus median household income: what gives rise to the divergence over time and how does this vary across OECD countries? The Review of Income and Wealth, https://doi.org/10.1111/roiw.12362

NORTH, D. C., WALLIS, J. J. & WEINGAST, B. R. (2008). Violence and the Rise of open-access orders, Journal of Democracy, 20(1), pp. 55-68. https://doi.org/10.1353/jod.0.0060

OECD (2010): SMEs, entrepreneurship and innovation. OECD Studies on SMEs and Entrepreneurship.

PIKETTY, T. (2014): Capital in the Twenty-First Century. Cambridge, MA: The Belknap Press of Harvard University Press.
WESTLEY, F. & ANTADZE, N. (2010). Making a difference: Strategies for scaling social innovation for greater impact. The Innovation Journal: The Public Sector Innovation Journal, 15(2), pp. 1–19.

Social Problems and Economic Performance: Social Innovations in the Hungarian Child Protection System

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SUMMARY

14.5% of the Hungarian population suffers from severe material deprivation. The link between social problems and economic performance is known as well as the rate of return of early childhood development projects, which ranges between 2.38-12.9. That is why the domestic adaptation of the English Sure Start Programme is of extreme importance. Due to the small capacity of the Hungarian educational system for disadvantage compensation, the functioning of study halls is also necessary. They ensure opportunities for valuable free-time activities for and development of disadvantaged children. The spread of both social innovations was supported by EU funds, but the introduction of a stable, local funding of the programmes has begun and both initiatives have become part of the Hungarian law on child protection.
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Journal of Economic Literature (JEL) codes: I2, I3, H5
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INTRODUCTION

There is a mutual link between economic and human development. In the first section of this paper I will describe the vicious circle of social and economic problems and then present the Hungarian situation with statistics. The educational system could have a role in handicap compensation, but I explain in the second section why the Hungarian system is not able to fulfill this mission and I discuss the labour market consequences of educational poverty. For these reasons the two social innovations described in the third and fourth sections are of paramount importance. I will show how they appeared in Hungary, how they developed, what we know about their efficiency, how this efficiency can and cannotbe measured, and what the main dilemmas are during their implementation. The fifth section analyses the Sure Start Children's Houses (SSCH) and Study Halls (SH) as social innovations and the sixth section presents my conclusions.

During my professional career I have visited several SSCHs and SHs, spoken with their employees and clients, participated in professional training and workshops, I have established one Study Hall myself and am the professional leader of another, and I also participate in the work of a Sure Start Children's House. That is why my research methodology was participatory observation combined with analysing relevant statistical data and the related literature. I will present the results of these latter two activities when the topic requires and not in a separate section reviewing the literature.

THE MUTUAL LINK BETWEEN ECONOMIC & SOCIAL PROGRESS AND UNDERDEVELOPMENT

How and whether growth drives human development is a popular research question. The link between the two spheres operates through two channels. On the macro level growth increases a country's tax base and therefore makes it possible for the government to spend more on the key public services of health and education. On the micro level growth raises the incomes of poor people and thereby increases their ability to pay for activities and goods that improve their health and education. Strong growth and employment opportunities alo improve incentives for families to invest in education by sending their children to school, which may lead to the emergence of a strong and growing group of entrepreneurs, which will generate pressure for improved governance. (DFID 2008)

But there is the other side of the coin, namely how poor human development contributes to economic decline, leading to further deterioration in human development. A low level of education, bad prospects in the labour market, poverty, and poor health conditions are linked in a vicious circle. Moreover the poor, undereducated parents who left school early cannot provide a suitable environment for their children to obtain the social and cognitive skills that are necessary for a successful school career. They bring up their children while passing down to them their own disadvantages.

A high number of children is charasteristic of people living in deep poverty, and thus the number and proportion of poor people in a given territory can grow rapidly. This process is usually accelerated by the emigration of the better educated and more motivated inhabitants.

Regions lagging behind, especially when they are suffer from ghettoization– in the Hungarian context, gypsification – do not attract external capital and do not have internal resources, neither financial nor cultural. As a result of these processes local schools become segregated in these territories, which entails a decline in the quality of education, which in turn strengthens the negative tendencies. Under these hopeless conditions alcoholism, drug addiction, violence, and crime appear easily.

The above mentioned phenomena cause extra expenses and lost gains in many ways for the society. People living in deep poverty have limited purchasing power and they are a burden for the social care system. The care system consumes tax revenues that could be spent on more profitable purposes. Different forms of deviant behaviour cause direct damage to the victims and the society itself. While the services provided and workplaces created in the social care or judicial systems contribute to the GDP, these are not productive sectors of the economy and neither do they contribute to higher productivity in their present forms. In theory, they could be productive or at least enhance productivity, but this requires social innovations. The talented children in the ghetto schools without a supportive parental background and motivation will be probably lost talents and thus they are an alternative cost for society.

And yet, there are some examples of unfolding talents of disadvantaged children or at least of their joining the middle class. In their stories the child protection system, certain actors of the educational system, the innovative initiatives of the civil sphere, and the churches all have an important role.

In this paper I shall present two social innovations that have become institutionalized within the child protection system They support mostly the development of school performance of disadvantaged children, their progression in the educational system and attainment of a higher level of education. First, however, I shall examine the extent of the problems outlined above.

DISADVANTAGED PEOPLE IN HUNGARIAN SOCIETY, ITS EDUCATIONAL SYSTEM AND LABOR MARKET

Poverty in Hungary

According to Eurostat, 31.9 % of the Hungarian people (almost 3 million) suffered from material and social deprivation in 2017, which was the fourth worst result in the European Union. (Eurostat 2019) KSH (the Central Hungarian Statistical Office) uses a different methodology and thus its results are more favorable: in 2016 a quarter of the population lived at risk of poverty and 14.5% in severe material deprivation. Regarding children these numbers were higher, especially for Gypsy[1] children. 19.2% of children in general (400,000) were living in severe material deprivation and this figure was 55.5% in case of the Gypsies. A third of the non-Gypsies and three quarters of the Gypsies lived at risk of poverty and social exclusion. (KSH 2019)

Being a Gypsy person does not equal living in deep poverty. Havas (2008) estimated that less than half but more than a third of the Hungarian Gypsies live in deep poverty and the same is true for the rate of Gypsies among the extremely poor people. Nevertheless, being Gypsy is a special issue due to the still existing discrimination and some special cultural features of this minority. By 2050 – according to the calculations of Hablicsek (2000) – two million Gypsies will be living in Hungary, which at that time may constitute a quarter of the whole population. Now the number of the Gypsies is 876 000 according to a research of the University of Debrecen (Pénzes et al 2018) and the fertility rate of Gypsy women is higher than the average in Hungary. (Husz, 2011) So the challenge of the Gypsies' integration is not a secondary question. I have to emphasize that the Gypsy population is far from being uniform, there are many different ways that we can and do differentiate them and that they differentiate themselves. Since the problems and prospects of the Gypsy and non-Gypsy people living in deep poverty are similar I will speak about both the disadvantaged and Gypsy people in the following parts of the paper.

[1] *In the text I use the expression "Gypsy" as this is the way people of Gypsy/Roma origin call themselves in East and North Hungary. Here this expression does not have any pejorative meaning.*

Disadvantaged and Gypsy Children in the Hungarian Educational System: Growing Educational Segregation, the Problems of Low School Performance and Early School Leaving

Education can be a key instrument to prevent and overcome social exclusion but it can also serve to reinforce inequalities. In Hungary there are significant differences in school achievement between disadvantaged and non-disadvantaged students and differences in school achievement between schools with significant proportions of disadvantaged children and schools without such students. Hungarian educational segregation has a long past. In 1962 the ministry ordered the foundation of segregated Gypsy classes, where the requirements were lower, conditions worse, the knowledge of teachers lesser. Another form of segregation was sending Gypsy students to special education institutions for retarded or mentally disabled children and creating "ancillary" classes.

This policy changed in 1985 with the abolition of Gypsy classes and setting more restrictive conditions for sending children to special education institutions. Yet educational segregation continues to be an existing problem in Hungary. In rural territories it is connected to residental segregation and so it is a natural process, but in towns and cities it is created intentionally. There are different techniques resulting in segregation, like creating bilingual classes and "normal" classes in a school and then not accepting Gypsy children in the bilingual classes. As a matter of fact, the majority of them do not even think of applying. Another possible way of creating schools free of Gypsy students is when a church takes over the running of schools, as these schools do not have the obligation of accepting all the children living in the neighborhood. (In some cases churches take over segregated schools within their Gypsy pastoral activity.)

To illustrate the extent of educational segregation in Hungary I cite Papp who analysed the so-called "background questionnaires" of the national competency measurement administered in 2009. These questionnaires were filled in by the headmasters of the schools who – among other things – were asked to estimate the proportion of Gypsy students in their school. The proportion of Gypsy children was 13% in the country on average but there were big territorial differences; in Borsod-Abaúj-Zemplén (BAZ) County (in northeastern Hungary) for example it averaged 31%. In 15% of schools the percentage of Gypsy children was over 40%, and in 10% of schools it was more than 50%. There were 52 schools where 90% of the students were Gypsy and in 34 schools it was 95%. The competency results showed that when the proportion of Gypsy students rose above 10% the average school performance began to decrease: test results for comprehension linearly, and results for logic tests less regularly (Papp 2011). The situation has worsened in the last ten years. According to a recent study of the Hungarian Academy of Sciences, which analyzed the segregation of disadvantaged and multiply-handicapped children and not that of Gypsy specifically, between 2008 and 2016 the index of segregation grew from 27.7 to 38.6 in the case of socially disadvantaged children and from 26.6 to 36.4 among multiply disadvantaged ones (Varga 2018). The worst possible value of the segregation index is 100, when segregation is total.

During the last decade there have been some lawsuits regarding school segregation (in Miskolc, Nyíregyháza, Kaposvár and Budapest) and in 2016 the European Commission launched an infringement procedure against *Hungary* over the segregation of Gypsy children in schools.

Hajdú et al. (2014) examined the school career of Gypsy children in 2014. They found that:

- 6.97% of them do not finish primary school
- 4.39% do not enroll in secondary or Vocational Education Training school
- 42.35% drop out of secondary or VET schools
- 24.69% obtain vocational school qualifications
- 21.59% pass leaving exams and complete secondary school
- 4.21% start higher education.

Children's performance at school, the education level they obtain and inequalities in having an access to quality education all contribute to social marginalization and have a negative effect on their future perspectives on the labor market. In the next part of the paper I will describe the situation of Hungarian Gypsies and of poor people on the labour market.

Disadvantaged People in the Hungarian Labor Market

After the change of regime in 1989[2] certain economic branches were hit by a crisis, specifically those where in the time of full employment Gypsies found work. On a national average 30 percent of the workplaces were lost by 1993 while 55 percent of the Gypsies' jobs had disappeared (Kertesi 2000). Not only the number of unemployed people grew during that period but the activity rate also fell. The labour market bottomed out in 1996 with the employment rate of 52%.[3]

[2] *End of communism in Hungary and the beginning of the transition process.*

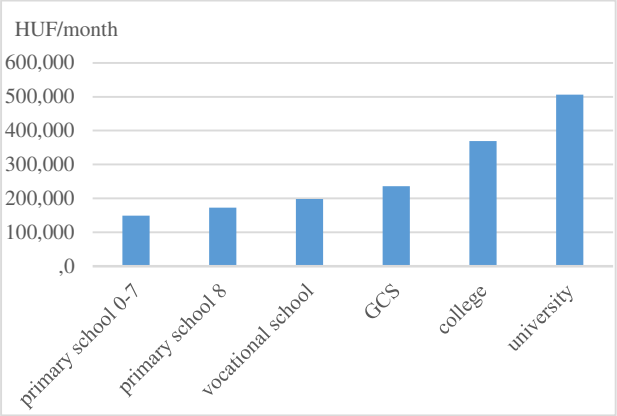
[3] *https://www.ksh.hu*

Kertesi (2006) diagnosed in 2005 that the country had problems in employing under-educated people: there were too many of them in comparison with the EU average and they were less employable. At that time the country level unemployment rate was 7.2 % while 13.7 % of the people with a primarylevel education[4] were unemployed.[5]

The low level of education of certain groups of people was not a problem in itself but it was combined with spatial segregation and discrimination as well. A study in 2000 which focused specifically on the Gypsies' labour market situation in BAZ County found that 88 percent of them were unemployed at a time when the percentage of overall unemployment was only 11.7 (Babusik 2002).

Now the unemployment rate is lower: it is 4.2% on average and 10.6% for people with only a primary-level education. This situation is partly a result of the widespread public work schemes: the highest number of people in public work schemes (223,470) was employed in 2016. (Ignits et al. 2017) There is shortage of workers in many sectors (manufacturing, commerce, finance, health care, construction, IT, education, etc.) which has seemingly lowered the level of discrimination against Gypsies in the Hungarian labor market.

With a higher educaional level not only the chance of finding a job is higher but also the available income, as is illustrated in Figure 1.



GCS: General Certificate of Secondary Education
Source: own construction based on: NFSZ (2016)

Figure 1. Average gross monthly income (in HUF) in Hungary by highest educational level, 2016

Not only the education level but also the possessed competencies have a role in success both in the labor market and in life in general. Allmendiger & Leibfried (2003) refer to the low level of competencies as a form of educational poverty. In the following section I will describe the situation of the Hungarian society in this regard.

Competencies in Hungary

The Programme for International Student Assessment (PISA) is a worldwide study conducted by the OECD every three years, starting in 2000. Its aim is the evaluation of educational systems by measuring 15-year-old pupils' scholastic performance in mathematics, science and reading.

The average results of the Hungarian students in 2006 and 2009 were not significantly different from the OECD average, while they are below that now. In 2015 the average scores in science, reading and mathematics were between 493-490 while in Hungary they were between 477-470.[6]

Table 1. gives a picture on the issue of educational equity in the OECD countries. I have chosen the results of science literacy to examine. The table contains the worst and best performances of the countries in three indices which measure equal chances and the capacity of the school system for disadvantage compensation. (The 'best results' in the table mean the countries in which the variation in performance is explained least by socio-economic status as in this places the equity and/or disadvantage compensation of the school system is the highest.) Along with the indices themselves I also put the name of the given countries and their ranking in science results. The OECD average and the results of Hungary are also shown in the table.

[4] *8 years of schooling in Hungary*

[5] *http://www.ksh.hu*

[6] *https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf*

Table 1
Equity in Education: PISA results, 2015

	Percentage of variation in science performance explained by students' socio-economic status	Score-point difference in science associated with a one-unit increase on the ESCS index	Percentage of resilient students
Best results (name of country and its ranking in science)	1 (Algeria, 69) 2 (Macao, 6) 5 (Kosovo, 68) 5 (Montenegro (59) 5 (Iceland, 39) 5 (Hong Kong, 9)	8 (Algeria, 69) 12 (Macao, 6) 17 (Tunisia, 66) 19 (Mexico, 58) 19 (Hong Kong, 9) 20 (Turkey, 52)	75.5 (Vietnam, 8) 64.6 (Macao, 6) 61.8 (Hong Kong, 9) 48.8 (Singapore, 2) 48.8 (Japan, 2) 48.3 (Estonia, 3)
Average result	12.9	38	29.2
Hungary	21	47	19.3
Worst results (name of country and its ranking in science)	19 (Belgium, 26) 20 (France, 27) 21 (Hungary, 35) 21 (Luxembourg, 33) 22 (Peru, 64) 26 (CABA*, 38)	52 (Czech Republic, 29) 57 (France, 27) 49 (New Zealand, 20) 48 (Belgium, 26) 47 (Hungary, 35) 47 (Malta, 41)	2.5 (Kosovo, 68) 0.4 (Dominican Republic, 70) 3.2 (Peru, 64) 4.1 (FYROM**, 67) 5.7 (Quatar, 56) 6.1 (Lebanon, 65)

*Buenos Aires, Argentina

**now North Macedonia

Source: own construction based on: OECD 2018

In the performance gap between advantaged and disadvantaged students the result of Hungary is among the worst (see Table 1, Column 1). PISA also assesses to what extent differences in education outcomes are associated with the social status of parents (see Table 1, Column 2). We can find Hungary again among the worst performers, since a one/point decrease in the ESCS (economic, social and cultural background) index of a student generates a 47-point difference in science.

Another index of the capacity of education system for disadvantage compensation is the share of resilient students, meaning those who perform well, despite coming from disadvantaged backgrounds. This number has been declining in Hungary since 2006 (OECD 2019), and 19.3% is well below the OECD average in 2015.

We can see in Table 1 that the overall performance of compulsory education is connected to the questions of equity in many ways. Algeria is an example for educational equity due to the overall low performance of the whole educational system. In contrast, Macao and Hong Kong are places where both the equity and the overall performance are high. We can find very different countries together in every cell of the table. They are different culturally, geographically and also in their performance in science. One thing we can notice, however, is that there are no countries in the category of best results in science among the countries with the lowest indicators of equity. And we can also notice that Hungary's performance in all the indicators is below the OECD average and in two cases it is among the worst performers.

As long as there are such shortcomings in the educational system of a country, the importance of social innovations that support the school career of disadvantaged pupils is extremely high. We will turn our attention now to these innovations.

"SURE START" CHILDREN'S HOUSES

As I mentioned before the children of people living in deep poverty start their school years with a handicap and are more likely to drop out from the system with a low level of education. Due to the labor market consequences of this process these children will raise their own children in poverty and pass their disadvantages down to them. The purpose of Sure Start Children's Houses (SSCH) is to break this circle at the first step by developing the cognitive and social capacities of children under the age of 3 and also by teaching the parents how to develop these skills at home.

The idea and methodology were developed and tested in the UK. There the story started with a UK government review in 1998 which concluded that disadvantage among young children was increasing and early intervention could alleviate poor outcomes. The report recommended a change in service design and delivery, to be area-based, with all children under five and their families as clients. All of the programmes that started provided:

- outreach and home visiting;
- support for families and parents;
- support for good quality play, learning and childcare experiences for children;
- primary and community health care and advice about child health and development and family health;
- support for people with special needs, but without specific guidance as to how (Melhuish et al. 2010).

The Hungarian adaptation of the programme began in 2003 as an initiative of the Hungarian Ministry of Health, Social Care and Families (Egészségügyi, Szociális és Családügyi Minisztérium). The pilot programme was launched in several types of regions and settlements (Balás et al. 2016).

The experience of the pilot projects was incorporated in the extention of the programme, which was started in 2009 involving EU funds. Sure Strtt Children's Houses were funded by several grants, one of which is still open for application. At present 265 Sure Start Children's Houses are operating, partly in the local, Hungarian financing system and partly in the framework of EU funded projects. The "old" Sure Start Houses can continue their operation in a normative financing system after the grant period is over. Meanwhile the Sure Start Children's Houses have become listed in the child protection act (Act XXXI of 1997 on child protection and custody administration) among basic services for child welfare. The detailed rules of operation were laid down in a decree (15/1998. (IV. 30.) NM rendelet), but in its current status there is not a word mentioned on this institution.[7]

There are certain elements in common with the original English programme but the Hungarian adaptation also has some special characteristics. The main difference lies in the basic situation that in the UK the state does not have much of a role in early childhood care, so there the main task was the foundation of services. Hungary already had a well established system of health visitors and also créches, although this latter is not attended by many disadvantaged children. Here the main purpose was creating better and more widely available services for the target group, which differs from the English aim. In the UK immigrants and unemployed city dwellers and their children under the age of 4 were and are the main recipients of the services, while in Hungary the recipients were those who were affected by chronic poverty, including Gypsies. Here the age limit is 3 years for children because since 2011 attending kindergarten has been obligatory from that age. One reason behind this regulation is that kindergartens can act as an arena of disadvantage compensation, but earlier, Gypsy children living in deep poverty either did not go at all or did not attend regularly.

The common features of the English project (Glass 1999) that are shared by the Hungarian project are:

- the involvement of parents and treating the two generations together,
- the complexity of programmes: several experts are present in the Sure Start Children's Houses and thus they aim at the improvement of more than one area,
- the possibility of responding to the local needs in service delivery.

In both places the participation is territorially based, that is to say that all people living in a given disadvantaged territory are entitled to joining the programme. In Hungary according to the present legal requirements to meet this criterion half of the children must be entitled to regular child protection allowance and half of this group must be disadvantaged or multiply disadvantaged. Before this regulation it occurred in some places that the SSCH became a meeting point for middle/class mothers.

A study on SSCHs found that if the SSCH was located too close to the slums then the better situated families would avoid it, while the SSCH situated in the city centre was not attended by poor families. Overall only a fifth of the SSCHs are characterized by the mixed social background of their attendees (Balás et al. 2016). The mixed social composition of SSCH has the advantage that it helps the integration process of disadvantaged children and mothers as well.

It was found that usually disadvantaged families could be integrated into the SSCH, but not families classified as multiply disadvantaged (Balás et al. 2016). Ironically, disadvantaged people do not like to mingle with multiply disadvantaged ones; there is hostility and envy among them in many cases.

The basic and obligatory tasks of the SSCHs are:

- to provide children with meals and skill development activities on a daily basis and survey their conditions regularly,
- providing parents with the possibility of participation in activities together with their children, special personality and capacity development and other preventive programmes,
- community events.

Several other services can be provided in the SSCHs. In the EU funded projects typically speech therapists, psychologists, physiotherapists, special education teachers and lawyers visited them. Unfortunately, the decreasing participation of these experts is typical after the transition to normative financing. Domestic resources do not ensure much besides the salaries of two people working in the SSCH. There is no money for replacing the worn-out tangible assets (toys) and not enough money even for the overheads, which have to be covered by the group running the institutions, which is typically a civil society organization or a micro-regional association.

[7] *See: https://net.jogtar.hu/jogszabaly?docid=99800015.NM.-only in Hungarian language*

The legislation prescribed, among other things,

- the opening hours of the SSCHs (an average of six hours a day every month and obligatory opening hours between 8-12 pm on weekdays),
- the minimum number of the children who use the services regularly (depending on the size of the settlement, but minimum 5 in the case of small settlements),
- the definition of regular usage (those who participate in at least 40% of the weekdays).

Sometimes those who just drop in for a few minutes on a daily basis are also considered regular users. I regard this phenomenon as problematic, though it is true that with time these people could become real clients of the institution. I also have the feeling that if 5 children and their mothers visit the SSCHs eight times a month, this is a waste of resources, as the SSCH is not sufficiently exploited.

In the UK the Sure Start Programmes were initiated in the late 1990s and they have evolved in various ways as Sure Start Centres and Early Childhood Care Centres. Methodologically sophisticated evaluation has shown that these interventions have been partially successful in various ways. Both the number of burglaries and households dependent on benefits decreased, and child health improved, with fewer emergency hospitalisations, severe injuries and respiratory infections. Aspects of school functioning improved for elder children. The identification of children with special educational needs or disability increased, suggesting improved health screening (Melhuish et al. 2010).

SSLP children showed better social development, exhibiting more positive social behavior and greater independence/self-regulation. These results can be attributable partially to the changing behavior of the parents, who manifested less negative parenting and offered a less chaotic and more cognitively stimulating home learning environment for their children (Melhuish et al. 2010).

The programmes were most successful when early interventions were linked to health programmes and to teacher-led initiatives. The weakness of the programmes was that they failed to reach some 5 percent of those identified as most in need, for whom profound and chronic poverty was the cause of parental problems and dysfunctional parent-child interactions. In addition, the Sure Start programmes were underfunded and subject to political change and interference (Melhuish et al. 2010).

In Hungary there was a monitoring and evaluating programme of SSCHs in 2015 (conducted by T-Tudok) and then in 2016 a comprehensive evaluation of the Hungarian programmes was carried out (by HÉTFA). The T-Tudok (2015) study called the attention to the fact that evaluations of early childhood programmesthat are longitudinal and do not concentrate only on the cognitive development of the clients are able to show real results. Such studies follow clients over several decades and thus they can evaluate the programme from the perspective of success on the labor market. The evaluation programme of T-Tudok was a cross-sectional one. It identified development in social and emotional areas in the children. From the children's point of view the role of SSCHs was crucial in the development of their motor skills, standalone game activity and successful integration into kindergarten. Regarding the parents, the main results of the projects were the strengthening of positive, loving, accepting parenting attitudes and the ability to create a daily routine in the lives of their children (T-Tudok, 2015).

The HÉTFA study – in accordance with the English experience – found that at least 6 years are necessary for the first results of the Sure Start programs to be displayed (Balás et al. 2016), so SSCH has a long embedding period. It found that, besides the above-mentioned effects, the educational competencies of the parents have developed, they learned how to play with their children, and their parental behavior aimed at get used to orderliness and self sufficiency strengthened. The programs widened the social relations of the involved mothers, decreased their isolation and increased their ability to cooperate, especially with the institutions, members of helping professions and with other parents as well. Their adaptive and problem-solving abilities also improved.

The SSCH also helped – as in the UK – in gaining access to subsidies, supports and services of the social care and health system. The development lag of some children was diagnosed in health screenings and thus their special treatment could begin in time (Balás et al., 2016).

The study contained a thorough cost-benefit analysis on the Hungarian Sure Start Program. One SSCH has an average annual budget of HUF 7,443,400 and is attended by 14.58 children on average. So the annual cost per child on the average is HUF 510,521. The entering age is generally 20.68 months; that is to say till the age of three the children attend this programme for 16 months. Thus, an average community investment of HUF 680,695 is spent on one child ($16 \div 12 \times 510{,}521$) (Balás et al. 2016).

Early childhood development programmes have their real results in the long run. According to international projects investigating the effects of early childhood development programmes, the return of these programmes is between 2.38 and 12.9. The sources of the profit are higher educational level, better situation in the labor market and less delinquency. Based on this the calculated HUF 680,695 cost per child will result in a social benefit of HUF 1.62–8.78 million to society in a period of 20-30 years. Considering 1,700 regular users, the gross economic gain can be between HUF 2.75 and 14.93 billion.

With a very cautious estimation we can state that the mere fact that the programme increases the chance of getting a secondary-level qualification means that each forint spent on the programme from the budget will produce a 1.5–3-fold return in the long run (Balás et al. 2016).

The question arises if there is any point in developing SSCHs if there is a huge development in créches. The answer is that the two institutions have different aims and

target groups. Créches are attended by children (whose mothers tipically work), while the SSCHs are targeted at mothers together with their children. (These mothers are unemployed or on maternity leaves). In SSCHs the development of parental abilities is as important as the development of the babies' skills.

STUDY HALLS (LOCALLY KNOWN AS "TANODA")

The first study hall was opened in a disadvantaged district of Budapest (Józsefvárosi Tanoda) in 1995. It was funded by civil resources and its main aim was to give disadvantaged students access to possibilities which are natural for the children of middle- class families, like foreign language classes, cultural activities, etc. Later study halls were founded independently in several other places, trying to enhance the educational experience of disadvantaged and Roma students by providing learning support, rich extra-curricular programs and extra support in other areas if needed.

After Hungary's EU accession in 2004 study halls were established with the support of EU funds in several waves. By 2009 66 Study Halls were functioning across the countryand there were 274 in 2018.

The application procedure for EU funds tended to be bureaucratic, resulting in delays in the allocation of funds. Besides this the funding of this measure was short-term, so it was not possible to guarantee the continuity of the study halls. At the end of a funded period some study halls switched to a reduced mode of functioning while others suspended or terminated their operation between two financed periods. This had harmful effects on the children, who felt abandoned. The teachers who worked in the study halls had to leave and move on to alternative employment. This sometimes resulted in the loss of expertise when funded activity recommenced.

The grant application procedure set requirements and minimum conditions to be met, as well as common standards. The professional guideline, the so-called "Study hall standard" (Tanoda sztenderd) was created in 2008 and later was revised and made more flexible.

The government, aware of the success and popularity of study halls, decided to grant the financial background for their stable functioning. Study halls have become incorporated into the child protection act and the means of domestic financing is being formulated just now.

Pros and cons of EU grants and limited domestic funding

EU grant opportunities created a new situation in financing civil society organizations in Hungary. Financial resources of this sector grew significantly, but many asssociations and foundations were established for the mere purpose of having access to European funds. Many study halls were launched simply for the sake of getting money and were not driven by the wish to help disadvantaged children. This did not mean automatically that later these Study Halls would do bad work, and some became really good ones, but there were and there continue to be some bad examples, too. The "enterprises masked as civil society organisations" took resources away from others. These "enterprises" are very good at documentation, meeting the indicators on paper, but not in their work with the children.

Switching to domestic financing had the consequence of scarcer resources. From that point on 75% of the money coming from the state would go for salaries and the rest is meant to cover overhead costs, meals, excursions, etc. The new regulation and way of financing makes the situation of the Study Halls a little harder, and means that creating new ones is almost impossible. Study Halls had to be built up in the past, in the period of more abundant finance. This situation has benefits, however. It has a market-cleaning effect and will screen out those looking to make a profit.

I have not spoken about the independent Study Halls, who did not ask for or did not get funds from the state or the EU, yet are able to function and typically in a very effective way. Some of them are run by churches, others by civil society organisations. The reason for not participating in the EU grants was usually the unwillingness to fulfil some of the expectations and/or the wish to avoid the heavy documentation obligations.

Relationship with and effect on the educational system

First of all, I would like to emphasize that there would be no need for study halls if the quality and capacity of handicap compensation of the Hungarian education system were good. But as the situation is the opposite and it is deteriorating, then it is a postive development that an initiative of the civil societythat has proved to be successful or at least promising in educating multiply disadvantaged children has won the support of the state. Study halls cannot and should not substitute for schools, and maybe in the future when the performance of the mainstream institutions is higher, study halls no longer be needed. Until then study halls have their roles and place in Hungary.

In this part of the article I would like to pick up certain topics which are the most important in the life of Study Halls in their connection to the schools and the education system. One of them is the question of the opening hours. Students spend 3-5 afternoons weekly in the study halls after their normal school days. Since 2011 it has become obligatory for children to be in the primary schools from 8 am to 4 pm. Parents can ask for exemption for their children from this rule and middle- and upper-class parents do so, but not the disadvantaged ones. Consequently "classes" in study halls usually start after 4 pm, when the children are very tired. Sometimes study halls open earlier, but in that case an agreement is necessary between the study hall and the schools in order to let the children leave earlier. Reaching this agreement is not always easy and even if it has been accomplished, the task of doing the homework takes timeaway from skills development and alternative teaching methods in the study halls.

The reasons behind the regulation that children have to stay at schools until 4 pm and behind the support of the study halls are the same: providing useful free-time activities and services for disadvantaged children in the afternoons, but the two measures contradict each other and thus conflicts can arise between institutions.

Another topic is formulated around the question of who teaches children in study halls, and what preparation is needed by educators in order for these institutions to function well.

The first "Study hall standard" prohibited the employment of local teachers in the study halls. The reason for this was the supposition that a teacher who cannot teach successfully in the morning in schools will not be better in Study Halls in the afternoon. Later this restriction was cancelled, partly because there was simply not enough supply for study hall workers, especially in remote villages. But there are other arguments which support the possibility of employing local teachers in study halls.

In the study hall teachers find themselves among totally different conditions than in the schools and with different expectations. Here the children come voluntarily, the teacher can deal with just one or a few children at a time, he/she can choose freely the content and the method of their learning activity. The educator in this new situation can formulate a different type of relationship with the students, even with the most problematic ones. Both of them will experience success and this new feeling can be brought back to the school. These types of experiences can help to prevent or cure burn-out, which is one of the main problems of teachers working in segregated schools.

Teachers that are not well educated naturally will not be able to achieve positive results in study halls. Teachers working in segregated schools are not less prepared than those of elite schools, simply their work is more difficult. On the other hand we cannot deny that there are problems in the educational system, not only in Hungary but worldwide. Many scholars urge the reform or rather revolution of the system. Discussing these questions would go far beyond the scope of this article, but what is important from the point of view of study halls is that they can function as an experimental terrain and support the renewal of the mainstream metholodogy of education.

Study halls and schools have similar purposes, but there are key differences between studying in mainstream schools and studying at study halls. The emphasis of the teaching and learning process is more on skills development than on knowledge transmission in study halls and students receive help in a personalised and individualised way where group work and innovative teaching methods, like drama, tale, or board-game pedagogy can be used more easily. It is expected that study halls will use innovative and modern teaching methods, and there are more and more places where they are really used. For the teachers of other study halls however, it is hard to leave behind their usual techniques and attitudes. The teachers who try out new methods in a smaller group without outer expectations can build their experience later into their school activities.

Monitoring and assessing

Self-assessment (on the basis of student achievement) is a requirement for all study halls. Instead of an evaluation of the outcome, process evaluation has been more common in study halls due to the heterogeneity of the students. Central input and output competency measurement through the internet was introduced only in the last period of study hall projects. The results of these measurements have not been evaluated yet. Earlier, during 2012 and 2013 there was a study in which the work of 19 study halls was followed up and measured. Not only the students of study halls were involved in this research; their classmates who did not go to the study halls were involved as a control group. This research found contradictory results. Study halls focused on the most disadvantaged children, which was shown by the fact that the initial results of the control group were better in every territory (motivational level, social attitudes, logical-mathematical competencies, etc.). During even this short period there was development in all fields of competency of the children, but they were still unable to prescind or to apply knowledge in solving complex problems. The performance of children changed more than their motivations. It was baffling that while among the students in the control group there was a positive correlation between motivation level and test results, this was not always the case in the treatment group. What is more, the gap in performance of the students attending study halls did not decrease in comparison with their classmates. A definitely negative result of the assessment was that the children in study halls showed regression in communicating with their peers (Lannert et al. 2013).

While this sounds rather discouraging, I would like to point out the problems of competency measurements in study halls. In my opinion competency tests help the work of study hall educators but are not suitable for deciding on the success of study halls. That the gap in performance did not decrease is not proof of the lack of success of study halls – not if the students of study halls had lower level of skills at the beginning or if they have worse family conditions. In such cases we can consider it a positive result if the gap in performance of the treatment and control group has not widened. On the other hand, an improvement in the test results of study hall students is not proof of the efficiency of Study Halls as we cannot distinguish the effects of the school. I have to add that competency development requires a long time, changes in performance require longer monitoring, and the rate of development of each child is different.

There are also positive externalities of study halls that cannot be captured in competency tests. For example, study halls offer useful freetime activities and they have potential for community development, thanks to which there could be fewer (or no) drug addicts among the youth. I have already mentioned the potential role of study halls

in the methodological renewal of mainstream education and in the improvement of the atmosphere and efficiency of local schools.

Using competency tests for the evaluation of study halls would make sense if we could investigate the long–term effects and compared the test results of similar segregated schools operating in settlements with and without study halls. In this type of investigations the problem remains that some Study halls "function only on paper", though hopefully these will stop functioning, partly due to stricter, less abundant financial resources–.

How can we reliably measure and evaluate the function of a Study Hall or the system of Study Halls? Mostly with qualitative methods and in the long run with research that concentrates on the labor market participation of former study hall students. Presently we have one promising sign: the first study hall students have begun to appear in universities.

"SURE START" CHILDREN'S HOUSES AND STUDY HALLS AS SOCIAL INNOVATIONS

In what way are study halls and Sure Start Children's Houses social innovations? According to Mulgan et al. (2006) social innovations are ideas that work in meeting social goals.

In the case of SSCHs this goal is the prevention of intergenerational transmission of poverty through developing the parental skills of disadvantaged people and decreasing the disadvantage their children experience in the educational system to support students in reaching a higher education level.

The key objectives of the study halls regarding disadvantaged children are:

- providing a learning space for disadvantaged pupils;
- identifying and supporting gifted children;
- reducing early school leaving, grade repetition and unemployment
- providing extra-curricular activities for disadvantaged young people;
- improving cultural life;
- developing social skills for employment;
- offering guidance.

With regard to disadvantaged parents, the aims are strengthening the links between schools and community and integrating Gypsy parents into the community. As far as educational system is concerned, the main objectives are improving teacher-student relationships; providing training for future teachers; providing an experimental territory for the renewal of methodology.

In social innovation processes the first step is always the identification of needs, which in our cases have been known for a long time. Then the needs have to be tied to new possibilities. Regarding SSCH-s the possibility came from new knowledge: understanding the importance of early childhood development in shaping future life chances. The case of study halls is different. Here the possibility came from the institutional changes of the country, the emerging civil society, and the existence of philanthropic actors who had ideas and opportunities to test them in practice.

Innovators often try things out, then adjust them in the light of experience. Trial and error, hunches and experiments are vital for innovations (Mulgan 2006). Both study halls and SSCHs have been through this stage, their main methods have crystallized, they have been growing, replicated and adapted. The SSCH was first developed in the UK, than after Hungarian piloting projects was adapted in Hungary as well. The study halls are home-made inventions of the Hungarian civil society the development of its methodology went hand in hand with research.

As Mulgan put it, the innovative and creative 'bees', social entrepreneurs or inventors need to find supportive "trees", big organizations that make things happen on a big scale (Mulgan et al. 2006). In our cases the trees were national governments and the EU, which allowed the initial spread of these new methods. As a matter of fact, governments play often the critical role of scaling up social innovations. The Hungarian government did the same here, by passing laws, allocating public expenditure and letting the spread of the programs happen; both programs are now in the stage of institutionalization.

SUMMARY AND CONCLUSIONS

Equity in education seeks strategies to diminish the correlation between educational outcomes and the socioeconomic background of learners. This equity has not yet been realized in the Hungarian system of education. The costs of school failure are extremely high not only at the private and social level (e.g. lower lifetime earnings, lower social cohesion) but at the fiscal level as well (e.g. lower tax revenues, higher welfare payments). Deficiencies in the education system contribute to massive social problems, to exclusion from the normal labor market or to finding only low-paid and low-respect jobs. Educational attainment and labor market outcomes thus are strongly connected.

In theory, educational policy is preventive while social policy is compensatory (Allmendinger & Leibfried 2003). In practice, however, and especially in case of the two social innovations presented here, the characteristics and functions are mixed and connected in a virtuous circle. These two new institutions of social policy contribute to decreasing educational poverty and through this, material poverty. Educational poverty is reflected in years of schooling, in the qualification attained, and also in competences, which are interconnected.

If the educational system of Hungary worked well, if it had the ability for disadvantage compensation, there would be no need for Study Halls and less need for SSCHs. But this is not the case. Of the 400,000 children living in severe

material deprivation in Hungary, 6,000 of them take advantage of study halls and 2,000 attend SSCHs. So the number of study halls and SSCHs is definitely not enough. A further issue is that spending money is not enough; it has to be spent well. Therefore, good education and the good intentions of those working in study halls and SSCHs are essential, as well as good methods for assessment and control of these institutions. These are challenges of the near future.

Early childhood development programs have their results in the long run. According to international projects investigating the effects of early childhood development programs, the return on investment of these programmes is between 2.38 and 12.9. The sources of the profit are a higher educational level, a better situation in the labor market and less delinquency (Balás et al. 2016).

The most recent budget of Hungary (2019) earmarked HUF 2.5 billion for supporting Study Halls and another 1.5 billion for SSCHs. That is not much in comparison with, for example, the hundreds of billions spent on building stadiums and supporting sports events, but the social sphere does not have a great ability to advocacy. We have to understand at last that investment in disadvantaged children is a useful investment for the whole society. A service and knowledge society will depend on the qualifications of the average citizens and not just on those of the elite. And I would like to emphasise that the money spent on social purposes has to be spent well, avoiding corruption, waste and paperwork.

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REFERENCES

ALLMENDINGER, J., LEIBFRIED, S. (2003): Education and the welfare state: the four worlds of competence production. Journal of European Social Policy, 13 (1) 63-81.

BALÁS, G., BARANYAI, Z., HERCZEG, B., JAKAB, G. (2016): Biztos Kezdet program hatásvizsgálata. (Evaluation of Sure Start Programme) HÉTFA Kutatóintézet. http://hetfa.hu/wp-content/uploads/hetfa_biztoskezdet_zarotanulmany0210.pdf

BABUSIK, F. (2002): Háttéranyag BAZ megyei cigány lakosság életkörülményeit javító középtávú program kidolgozásához. BAZ megye roma népességének helyzete. (Background material for elaborating a medium-term programme for ameliorating the living conditions of the Gypsy population in BAZ county) Delphoi Consulting

EUROSTAT (2019): People at risk of poverty or social exclusion. Retrieved: December 2018: https://ec.europa.eu/eurostat/statistics-explained/index.php/People_at_risk_of_poverty_or_social_exclusion#Number_of_people_at_risk_of_poverty_or_social_exclusion.

GLASS, N. (1999). Sure Start: The Development of an Early Development of an Early Intervention Programmes for Young Children in the United Kingdom. Children and Society, 13, 257-264. https://doi.org/10.1002/CHI569

GREAT BRITAIN. DEPARTMENT FOR INTERNATIONAL DEVELOPMENT (2008): Growth: Building jobs and prosperity in developing countries. Retrieved: December 2018: https://www.oecd.org/derec/unitedkingdom/40700982.pdf

HAJDÚ, T., KERTESI, G., KÉZDI, G. (2014): Roma fiatalok a középiskolában. Beszámoló a TÁRKI Életpálya felmérésének 2006 és 2012 közötti hullámairól. (Gypsy youngsters in secondary schools. Report on TÁRKI's career research between 2006 and 2012.) In Kolosi, T., Tóth, I. Gy. (eds), Társadalmi riport (pp. 265-302). Budapest: TÁRKI.

HABLICSEK, L. (2000): Kísérlet a roma népesség előreszámítására 2050-ig. (An attempt to predict the number of Roma population until 2050.) In Horváth, Á. (ed), Cigánynak születni. Tanulmányok, dokumentumok (pp. 243-277). Budapest: Aktív Társadalom Alapítvány & Új Mandátum Kiadó.

HAVAS, G. (2008): Esélyegyenlőség, deszegregáció. (Equal opportunities, desegregation) In Fazekas, K., Köllő, J., Varga, J. (eds), Zöld könyv a magyar közoktatás megújításáért (pp.121-138). Budapest: Oktatás és Gyermekesély Kerekasztal. ECOSTAT.

HUSZ, I. (2011): Alacsony iskolai végzettség- sok gyerek? A magas termékenység néhány területi és etnikai aspektusáról. (Low level of education- many children? On some territorial and ethnic aspects of high fertility) Demográfia, 54 (1) 5–22.

IGNITS, G., MÓD, P., NAGY, Á., VARGA, L. (2017): Beszámoló a 2016 évi közfoglalkoztatásról. (Report on public work schemes in 2016) Retrieved: December 2018: https://kozfoglalkoztatas.kormany.hu/download/4/8e/e1000/Besz%C3%A1mol%C3%B3_2016_170713.pdf

KERTESI, G. (2000): Cigány foglalkoztatás és munkanélküliség a rendszerváltás előtt és után. (Employment of Gypsies before and after the change of regime) In Horváth, Á.- Landau, E- Szalai, J. (eds), Cigánynak születni (pp. 425-471). Budapest: Aktív társadalom Alapítvány, Új Mandátum.

KERTESI, G. (2006): Roma foglalkoztatás az ezredfordulón. (Employment of gypsies at the term of the millennium) In Kállai, E- Törzsök, E: Átszervezések kora. Cigánynak lenni Magyarországon. Jelentés 2002-2006 (pp. 92-132). Budapest: Európai Összehasonlító Kisebbségkutatások Közalapítvány.

KSH (2019): Indicators of poverty or social exclusion by reference year (2010-) Retrieved: November 2018: http://www.ksh.hu/docs/eng/xstadat/xstadat_annual/i_zaa007.html

LANNERT, J., NÉMETH, S., ZÁGON, B-né (2013): Tanoda-kutatás és fejlesztés 2012/2013 Zárótanulmány – Vitaanyag. (Study hall research and development. Final report – Discussion paper) T-TUDOK Tudásmenedzsment és Oktatáskutató Központ ZRT. Retrieved: November 2018: https://docplayer.hu/212129-Tanoda-kutatas-es-fejlesztes-2012-2013-zarotanulmany.html

MELHUISH, E., BELSKY, J., BARNES, J. (2010): Sure start and its evaluation in England. In Tremblay, R.E., Barr, R.G., Peters, R., Boivin, M. (eds.) Encyclopedia on Early Childhood Development [online]. Montreal, Quebec: Centre of Excellence for Early Childhood Development (1-6). Retrieved: November 2018: http://www.child-encyclopedia.com/sites/default/files/textes-experts/en/862/sure-start-and-its-evaluation-in-england.pdf

MULGAN, G., TUCKER, S., RUSHANARA, A., SANDERS, B. (2007): Social Innovation: What it is, why it matters and how it can be accelerated. Skoll Centre for Social Entrepreneurship. http://eureka.sbs.ox.ac.uk/761/ Retrieved: November, 2018.

NEMZETI FOGLALKOZTATÁSI SZOLGÁLAT (2016): Az egyéni bérek és keresetek adatfelvétel főbb eredményei 2016 május. (The main results of data collection on individual earnings in May 2016) Retrieved: December 2018: https://nfsz.munka.hu/bertarifa/adattar2017/

OECD (2018): PISA 2015 Results in Focus. Retrieved: November 2018: https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf

OECD (2019): PISA 2015 key findings for Hungary. Retrieved: January, 2019: https://www.oecd.org/hungary/pisa-2015-hungary.htm

PAPP, Z. A. (2011): A roma tanulók aránya Magyarországon és a tanulói teljesítmények az általános iskolai oktatásban. (The share of Romani students in Hungary and performance in the primary level education) In Bárdi, N., Tóth, Á. (eds) Asszimiláció, integráció, szegregáció-Párhuzamos értelmezések és modellek a kisebbségkutatásban (pp. 227-265). Budapest: Argumentum.

PÉNZES, J., TÁTRAI, P., PÁSZTOR, I. Z. (2018): A roma népesség területi megoszlásának változása Magyarországon az elmúlt évtizedekben. (Changes in the Spatial Distribution of the Roma Population in Hungary During the Last Decades) Területi Statisztika, 58 (1) 3–26. DOI: 10.15196/TS580101

T-TUDOK (2015): Biztos Kezdet Program monitorozása és értékelése a TÁMOP 5.2.1.-12/1 Gyerekesély program országos kiterjesztésének szakmai módszertani megalapozása és a program kísérése című kiemelt program keretében. Vezetői összefoglaló. (Evaluation and monitoring of Sure Start Programme within the extention and professional foundation of SHROP 5.2.1.-12/1 Chances of Children Programme. Executive Summary) T-Tudok Tudásmenedzsment és Oktatáskutató Központ Zrt. Retrieved: April 2019: https://www.t-tudok.hu/files/2/vezetoi_osszefoglalo_vegleges.pdf

VARGA, J (szerk) (2018): A közoktatás indikátorrendszere, 2017. (Institutional system of public education) Budapest: MTA KRTK KTI. https://www.mtakti.hu/wp-content/uploads/2018/02/A_kozoktatas_indikatorrendszere_2017.pdf

Contributions to the Impact Assessment of Network Cooperation among Social Enterprises

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SUMMARY

The literature of industrial management has been focusing, although with different intensity, on the question of optimal company size since the 1960s. Whithin this framework the focus shifted since the 1980s form the examinations of, the effects of business outsourcing to increase efficiency to the organizational and economic connections of network cooperation, since the 1990s.

Network cooperation analysis is especially relevant in the case of social enterprises, which are usually smaller than the sectoral average and are characterized with lower capitalization and higher risk than the average.

This paper reviews the literature and methods, trying to find the answers to the following four questions:

- *What justifies network cooperation?*
- *Which factors enhance and which factors discourage the start up of social entrepreneurial networks?*
- *What kind of network types can be developed?*
- *How can the effect of network cooperation be measured?*

Keywords: network, impact assessment, impact matrix, multiplier effect, cost-benefit analysis
Journal of Economic Literature (JEL) codes: L14, L31
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NETWORK FORMS

Features of the spatiality of a society are basically determined by social and spatial networks (Benedek 2009; Benedek & Kurkó 2010). Different types of networks can be distinguished based on the agents that have created them. Among these, from an economics point of view, social networks, institutional networks and the typically spatial networks like networks of agglomerations are of primary importance. All types have the following typical characteristics: the structural role of the relations among network elements, the formation of characteristic nodes, the hierarchical organization of network elements and the favourable effect of networks on productivity, competitiveness and innovation (Benedek & Moldovan 2015; Benedek et al. 2016; Eriksson & Lengyel 2019).

The academic focus on the role of territorial networks highlights two processes that began in the 1980s. One of them is related to the new post-Fordist turnaround, which is characterized by the radical change of the economy of cities and regions and by the formation of a knowledge-based economy. This phenomenon reflects the logic of spatial-economic evolution coinciding with the the second major process: the strengthening of political and economic regionalism, in the course of which new forms of cooperation emerged between the state and the local operators. Although flexible specialization as a production method that followed Fordism could provide a good explanation for the economic success of certain Italian regions ("the third Italy") in the 1980s and 90s, this model – or at least its Italian examples – needs to be seriously corrected now. From the spatial point of view, flexible specialization is based on a certain number of specialized networks made up of small and medium-sized enterprises, contrary to the Fordist way of production with its great, vertically integrated corporations (Piore and Sabel 1984). The growth of the small and medium-sized enterprises sector, which is strongly networked, is explained by new market relations (more diverse demand or growth in demand for design-intensive and high quality products) and new technologies (Amin 2000), but its downturn after the turn of the millennium has been given less attention

and academic interest. It supposedly does not have enough capacity for the collaborative innovation that is necessary for further competitiveness (Sabel and Herriger, 2019).

The Parisian regional economic school (Georges Benko, Daniéle Leborgne, Alain Lipietz) has elaborated a typology of networks and regions to assess local and regional partnerships. More precisely, the former two authors have defined spatial networks based on two criteria (Leborgne & Lipietz, 1988; Benko & Lipietz, 1998; Krätke 2001):

1) Organizational forms of production:
   a. weak decentralization, i.e. strong centralization, characterized by the Fordist model, but also found in post-Fordism, that makes it possible to build an entrepreneurial network dominated by a leading company;
   b. strong decentralization that makes it possible to form specialized entrepreneurial networks where coordination and cooperation relations have a determining role.
2) Forms of spatial organization:
   a. decentralized (spatial) diffusion where management, administration and development are particularly distinguished in space (concentrated in urban regions) and production is relocated in peripheral regions;
   b. concentrated or spatial agglomeration where the companies and functions with different profiles are concentrated in the same region.

Based on the above mentioned criteria and their combinations, five types of network regions can be distinguished (Krätke 2001; Benedek 2006; Benedek & Horváth, 2008):

1) Centralized and spatially decentralized urban-industrial regions with classical Fordist centers, with companies controlled by a parent company that is situated outside the region, with economic relations dominantly beyond the region and with all the characteristics of the Fordist production system. This type can be present in the spatial agglomeration as well, namely in the form of industrial-productive complexes in the regions where parent companies can be found.
2) Urban-industrial regions that are similar to the first type, organizationally weakly decentralized and spatially decentralized, with cities situated in peripheral regions dominated by companies producing raw materials and materials therefore connected to large enterprises beyond the region. Thus these regions are dependent on exports to the large companies situated beyond the region. At the same time, regions that are characterized by production based on cheap labour force and lower levels of qualifications fall into this category as well.
3) Weakly decentralized and spatially centralized urban-industrial regions, regions where development poles or production complexes can be found and where both large companies and service companies are present. They are strongly integrated to the regional structure and a high level of coherence is observed between the economic development model and the institutional framework.
4) Moderately decentralized but spatially centralized urban-industrial regions that include specialized interconnected networks of small and medium-sized enterprises. The best-known examples are Silicon Valley and Orange Country in Southern California, where companies have selected the strategy of vertical disintegration due to market and demand changes. The strong spatial agglomeration trends of the companies are associated with strong polarization.
5) Strongly decentralized but spatially centralized urban-industrial regions that include a large number of cities with specialized industrial companies that are interconnected with each other through market relations and are closely related to a regional social and political environment. From the regional aspect, the economic, political and social sectors form an increasingly integrated cooperation network. Examples are metropolitan regions specialized in tertiary activities and management functions. In Central and Eastern Europe, it – practically without any exceptions - refers to capital regions as a result of the spatially uneven and polarized development of the last two decades (Benedek & Veress 2013; Benedek & Kocziszky 2015; Bodocan et al. 2018; Kocziszky et al. 2018).

A further possibility of spatial and institutional networks has been elaborated by the Paris-based European Research Group into Innovative Milieus (GREMI) (Aydalot, Camagni, Maillat, Crevoisier, etc.). The concept of innovative milieus elaborated by GREMI is also built on the importance of the spatial embeddedness of social and institutional networks. More precisely, GREMI emphasizes the central role of production networks, social capital and regional coordination and integration mechanisms in the development processes (Benedek 2006). Two integration types can be distinguished (Bathelt & Glücker 2000): social integration refers to the quality of economic relations between two actors, and structural integration expresses the quality of economic relations among more than two actors. More precisely, the development and loss of confidence are defined not only by the direct relation between the two actors, but also the structural context that is made up of all of the local and regional actors.

According to GREMI, the formation of networks among enterprises is promoted by the decreased inside capacity for new knowledge generation. Consequently the innovative activity of small and medium-sized enterprises is strongly dependent on the network of relations created with other institutions of the region, such as companies, consumers, suppliers, higher education institutions, research institutions, regional development institutions, chambers of commerce or technology-transfer agencies

(Haasink 2001). According to Camagni (2018), enterprises (especially small enterprises) struggle with the problem of uncertainty and partial information and they tend to develop several new routines and functions related to control, selection, codification, search and monitoring. In this context, the local environment acts as the operator between the market and the institutions and it has the role to decrease uncertainty and risk by supporting interdependence among local enterprises (Camagni 2018).

NETWORK OF SOCIAL ENTERPRISES

In the literature about business economics, the question of economics of scale has been brought out along with the cost calculation methods. Fixed and variable expenses define the point where revenue covers the amount of total cost (break-even point). On the one hand, this point is gradually increasing dependent on the fixed costs On the other, the breakeven point changes also depending on the type of the revenue function. It raises the question of optimal size and of which organizational interventions (structural, etc.) can be used to achieve it. The bulk of empirical studies have verified that the probability of survival of micro and small enterprises is smaller than that of larger enterprises (Eichhorn & Merk 2016).

Most of the social enterprises that are relevant to our topic (the aim of that are primarily employment, integration to the labor market, employment of disabled persons, rehabilitation of those suffering from dependence or improvement of local services) fall into the latter size category (Kocziszky et al. 2018). They usually have a shorter lifecycle and lower productivity than enterprises in the private sector, especially when it is taken into account that most of them are established as a result of governmental initiatives and in most of the cases, the state supports their functioning even after foundation. The sustainability of these enterprises can be improved with network cooperation.

The literature usually lists five arguments in support of the networking of enterprises Burt 1985; Blecker 1999; Kaderali 2001):

- they can maintain their autonomy,
- they can improve their capacity utilization,
- they can decrease their costs with the help of joint supply chains,
- they can increase their revenue with the help of joint distribution chains,
- they can make their investments more economical and increase their productivity.

Networking is basically influenced by four factors (Burt 1984; PWG 2006):

a) on-site factors (like the availability of supply and distribution markets)
b) business economic factors (like economic sector, the rate of technology and work intensity of the profile or plant size).
c) human factors (like risk taking ability, professional experience or interest)
d) regulatory and cultural environment (like state support or consulting network).

IMPACT ASSESSMENT OF NETWORKS

The aim of the impact assessment of network is to review and analyze the output consequences of the intervention. Moreover, it aims at exploring and recording cause and effect relationships. According to the indication principle, this effect is ensured by the output.

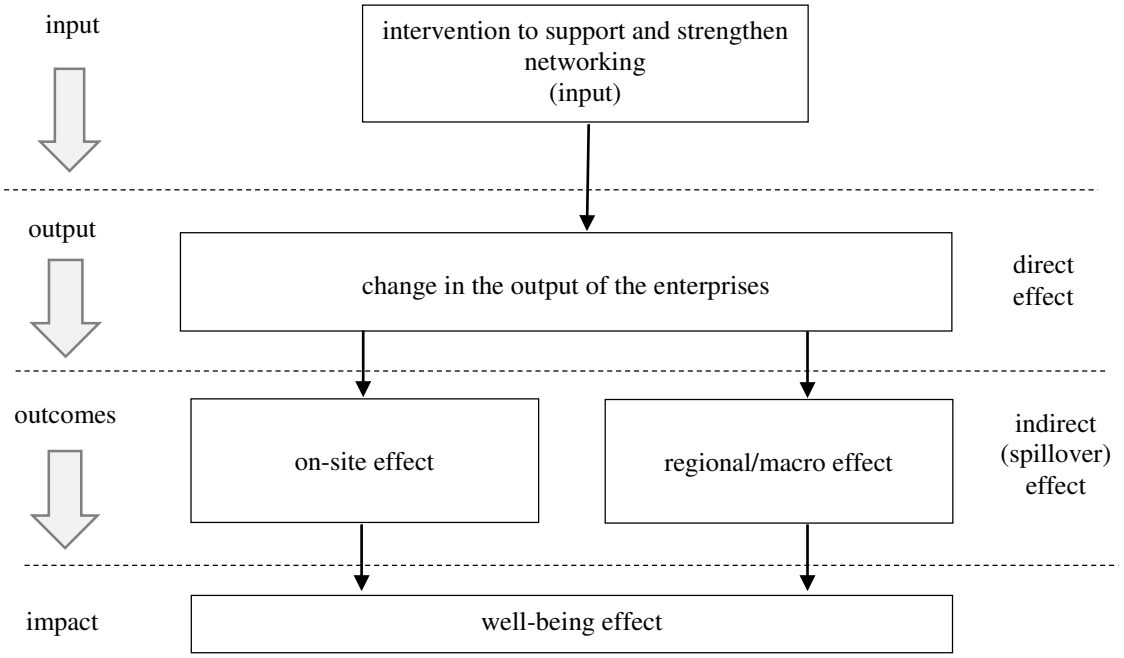
Mapping the effects is a complex task, in the course of which quantitative and qualitative element can be present. Therefore it is not appropriate to "aggregate" the output consequences in one single "measure". These consequences can be (Burt & Minor, 1983; Atkinson & Coleman 1992; Kontos 2004):

a) economic (e.g. social employment, income or purchasing power);
b) social (e.g. level of qualification or average life expectancy);
c) ecological (e.g. ecological footprint).

The effect of networking can primarily be experienced at the micro (company and local) level, but it has consequences at the mezzo and macro levels as well. Impact assessments are usually divided into two categories in the literature: descriptive and empirical:

a) Descriptive impact assessments describe cause and effect relationships verbally and/or with the help of causal graphs. An important part of it is whether the enterprise has met its goals, to what extent it was able to activate its target group, to what extent it is accepted by the community, etc. (Serdült 2002),
b) Empirical assessments aim at quantifying the output consequences or making them quantifiable (Faust & Wasserman, 1992).

The impact assessment of social enterprises requires a more complex analysis than the methodology applied in the case of private enterprises (like ROI or ROA) (and sometimes instead of it) (Figure 1).



Source: own compilation

Figure 1. The logic of impact assessment of networks

Table 1
possible effects of network cooperation

input	output	outcomes	impact
➢ increase in orders ➢ profile clearance ➢ decrease in specific supply costs ➢ employment extension	➢ revenue increase ➢ decrease in specific cost ➢ quality improvement ➢ fall in added value	➢ social/labor market integration ➢ employment extension on-site/in the region ➢ improvement of individual income conditions ➢ improvement of mental health	➢ decrease in social costs ➢ improvement in living standard

Source: own compilation

The input → output → outcomes → impact approach makes it possible to record direct and indirect (spillover) effects, regardless of whether the analysis is about a single element of the network or the whole network (Table 1).

Beyond revealing the relations among the members of the network (0, 1), classical matrix mathematics can also be used for impact assessment, assuming that the on-site or regional multiplier (the effect of unit output outcomes) is known. Given that the output of a given enterprise can be described as a vector (y) and the impact multiplier of the network members can be described as a matrix (A), we write:

$h = yA = [\sum_{i=1}^{m} y_i a_{i1}, \sum_{i=1}^{m} y_i a_{i2}, \dots, \sum_{i=1}^{m} y_i a_{im}] = \sum_{i=1}^{m} y_i [a_{i1}, a_{i2}, \dots, a_{in}]$,

where h is the benefit vector of the given network member; i is the number of the network member; j is the examined effect (j = 1, …, m) and aij is the effect multiplier of the given enterprise (the effect generated by unit output change).

The effect multiplier can refer either to the direct or to the indirect benefit elements. Direct and indirect benefit elements can be expressed in monitaryterms. There are benefit elements that do not have a market value (like the improvement of mental health). In cases like this, shadow prices can be used as a basis for recording.

SOME CONCLUDING REMARKS

Macroeconomic data published regularly by the statistical office provide an overall picture about the economic and social processes of a country. The aggregating effect of this information, however, hides the specific characteristics of economic operators

(enterprises). This is especially true for social enterprises, in spite of the fact that social innovations and the enterprises that implement them (even if their economic weight can hardly be recognized within a given economy) play an important social role. That is why their economic sustainability is an important question.

According to Hungarian experiences, social enterprises have a shorter life cycle than private sectors enterprises because of their low capital resources and limited markets. Their networking could improve this. However, networking among social enterprises is only short-livedand hardly ever happens.

Networking and organization into clusters could be promoted by the formation of a professional consulting network and the record of the positive effects of network cooperation.

The simple method described in our paper provides help for this.

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REFERENCES

AMIN, A. (2000): Industrial Districts, in: Sheppard, E., Barnes, T. J. (ed.): A Companion to Economic Geography. Oxford, Blackwell, 149–168. doi.org/10.1002/9780470693445.ch10

ATKINSON, M. M., COLEMAN, W.D. (1992). Policy Networks, Policy Communities and the Problems of Governance, in: Governance, 5(2), pp. 154-182. doi.org/10.1111/j.1468-0491.1992.tb00034.x

BATHELT, H., GLÜCKLER, J. (2000): Netzwerke, Lernen und evolutionäre Regionalentwicklung. Zeitschrift für Wirtschaftsgeographie, 3–4, 167–182. doi.org/10.1515/zfw.2000.0012

BENEDEK J. (2006): Urban policy and urbanisation in the transititon Romania, Romanian Review of Regional Studies 1, pp.51 - 64.

BENEDEK J. (2009): The emergence of new regions in transition Romania, in: Scott, J. (Ed) De-coding New Regionalism. Shifting Socio-political Contexts in Central Europe and Latin America, pp. 233 – 246. Ashgate. Urban and Regional Planning Series, Aldershot.

BENEDEK J., HORVÁTH R. (2008): Chapter 12, Romania, in: Baun M, Marek D., (Eds) EU regional policy after enlargment, pp. 226 – 247. Palgrave Macmillan, Basingstoke.

BENEDEK J., KOCZISZKY G. (2015): Paths of convergence and polarization in the Visegrád countries. In: Lang, T., Henn, S., Sgibnev, W., Ehrlich, K., (eds.): Understanding Geographies of Polarization and Peripheralization. Perspectives from Eastern Europe and Beyond, pp. 217-234. Palgrave/MacMillan, Basingstoke. doi.org/10.1057/9781137415080_12

BENEDEK J., KOCZISZKY G., VERESNÉ SOMOSI M., BALATON K. (2016): Generating and Measuring Regional Social Innovation. Club of Economics Miskolc TMP, vol. 12, special issue, pp.14-25. doi.org/10.18096/tmp.2016.02.02

BENEDEK J., MOLDOVAN A. (2015): Economic convergence and polarisation: towards a multi-dimensional approach. Hungarian Geographical Bulletin, 64:3, pp.187-203. doi.org/10.15201/hungeobull.64.3.3

BENEDEK J., VERESS N. (2013): Economic Disparities and Changes in the Convergence of the Romanian NUTS 2 and NUTS 3 Regions. Romanian Review of Regional Studies. (9):1, pp.85-90.

BENEDEK, J., KURKÓ, I. (2010): The Evolution of Regional Economic Disparities in Romania. Transylvanian Review, 19 Supplement No. 4, pp.143-158.

BENKO, G., LIPIETZ, A. (1998): From the regulation of space to the space of regulation. GeoJournal, 44(4), pp.275-281.

BLECKER, T. (1999): Unternehmung ohne Grenzen: Konzepte, Strategien und Gestaltungsempfehlungen für das strategische Management. Wiesbaden. doi.org/10.1007/978-3-322-95311-7_3

BODOCAN, V., BENEDEK, J., RUSU, R. (2018): Twenty first century cities: from global challenges to local responses. In: Solarz Wojchieh Marcin (ed.) New geographies of the globalized world. Routledge Studies in Human Geography, pp. 77-92. Routledge, New York. doi.org/10.4324/9781315560083-4

BURT, R.S. (1984): Network Items in the General Social Survey, in: Social Networks, 6, pp. 293-339. doi.org/10.1016/0378-8733(84)90007-8

BURT, R.S. (1985): General Social Survey Network Items, in: Connections, 8, pp. 119-123.

BURT, R.S. & MINOR, M.J. (1983): Applied Network Analysis. A Methodological Introduction, Newbury Park. doi.org/10.2307/3340357

CAMAGNI, R. (2018): Functional integration and locational shifts on new technology industry. In: Aydalot, P., Keeble, D. (eds.) High Technology Industry and Innovative Environments: The European Experience, pp. 48-64. Routledge, New York. doi.org/10.4324/9781315149769-3

EICHHORN, P. & MERK J. (2016). Das Prinzip Wirtschaftlichkeit: Basiswissen der Betriebswirtschaftslehre Wiesbaden: Springer Gabler. doi.org/10.1007/978-3-658-07830-0

ERIKSSON, R.K., LENGYEL, B. (2019): Co-worker networks and agglomeration externalities. Economic Geography, 95(1), 65-89. doi.org/10.1080/00130095.2018.1498741

FAUST, K., WASSERMAN, S. (1992) Blockmodels. Interpretation and Evaluation, in: Social Networks, 14. pp.5-61. doi.org/10.1016/0378-8733(92)90013-w

HASSINK, R. (2001) The Learning Region. Zeitschrift für Wirtschaftsgeographie, 3–4, 219–230. doi.org/10.1515/zfw.2001.0013

KADERALI F. (2001): Handbuch Unternehmensnetze. Deutscher Wirtschaftsdienst.

KOCZISZKY GY., BENEDEK J., SZENDI D. (2018): The impact of the 2008 financial crisis on the evolution of household incomes and wealth in Visegrad countries. Regional Statistics. 8:1. pp.1-27. doi.org/10.15196/rs080102

KONTOS, G. (2004): Bewertung des Erfolgs von Unternehmensnetzwerken in der F & E. PhD dissertation, Rheinisch-Westfälischen Technischen Hochschule, Aachen.

KRÄTKE, S. (2001): Regionalforschung in regulationstheoretischer Perspektive. Geographische Revue, Jg. 2, Heft 1, pp.21–30. doi.org/10.1515/zfw.1996.0001

LEBORGNE, D., LIPIETZ, A. (1988): New technologies, new modes of regulation: some spatial implications. Environment and Planning D: Society and Space, 6, pp.263-280.Piore, M., Sabel, Ch. (1984) The Second Industrial Divide: Possibilities for Prosperity. Basic Books, New York. doi.org/10.1068/d060263

PIORE, M., SABEL, CH. (1984): The second industrial divide: possibilities for prosperity. New York, Basic Books. doi.org/10.2307/25142899

PWG (2006): Unternehmenskooperation: Auslauf oder Zukunftsmodell? Pricewaterhouse Coopers, Berlin.

SABEL, C., HERRIGEL, G. (2019): Collaborative innovation in the Norwegian oil and gas industry: surprise or sign of a new economy-wide paradigm? In: Kingsbury, B., Malone, D., Stewart, R.B., Sunami, A. (eds.): Megaregulation Contested: Global Economic Ordering After TPP, pp. 1-24. Oxford University Press. doi.org/10.4324/9781315142456-15

SERDÜLT, U. (2002): Soziale Netzwerkanalyse: eine Methode zur Untersuchung von Beziehungen zwischen sozialen Akteuren. Österreichische Zeitschrift für Politikwissenschaft. 31(2), 127-141.

Needs and Expectations – Controllers in the Hungarian Labor Market

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SUMMARY

Automation, digitalization and globalization have an effect on the current global labor market. The process of change has become increasingly apparent also in Hungary. Both employers and the employee have to adapt to the rapidly changing circumstances. The aim of the paper is to examine the demands that the novel processes and their labor market effects impose upon the potential labor force. According to our hypothesis, these new needs appear at the beginning of the recruitment process. Our research question is whether there is any relationship between the competences related to a highly qualified job like the controller and the company's size and activity, and if so, to reveal the strength of the relationship. To test it, we examined job advertisements for controllers based on predefined criteria.

Keywords: controller competences, job advertisement, labor market, challenges, controlling
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THE CHANGING LABOR MARKET AND ITS CHARACTERISTICS

Over the past two decades, there has been a structural shift in the markets, including the labor market: the production and the number of the work force has decreased in manufacturing, while the amount of output and the number of the work force has increased in services, financial activity and construction. As a result of the sectoral changes, the service sector was expected to be able to solve the problem of unemployment and to create job opportunities, but this was not realized in full. Sectoral changes resulted in changes in the need for the quality and the quantity of the work force (Emmerij 1994). The period after the 1980s was marked by the revolution of the distribution and spread of microelectronics. The spreading of information and communication technologies fundamentally changed the space in which companies operate, compete and trade, and this development has been unbroken since then. The information revolution offers companies the opportunity to improve their internal efficiency, to increase their productivity and to ensure that the geographical gap between the buyer and the seller can be bridged. The import of technology is a necessary but not sufficient condition for the growth and development of countries. The lack of access to technology hampers the conditions of low-income earners and increases the level of poverty.

Since the 1990s, as an effect of globalization, technology has replaced labor in production to an even greater extent. At the same time, however, capital needs the elasticity of the labor market (Mészáros 2010). Beveridge (1909) recognized that unemployment cannot be completely eliminated in the economy. Instead, he believes that a minimal level of unemployment (2–3%) is required. He argues that without that reserve, the labor market would not be flexible enough. Unemployment is a natural consequence of capitalist production; its growth was a characteristic and necessary spin-off of globalization. At the same time, however, an accelerated

increase in unemployment is especially typical among unskilled workers. In economic booms, employment extended to a lesser extent than output, while in times of economic downturn, it decreased faster than the production. Rifkin (1995) argues that one of the main reasons for the decrease in labor demand is the increase in mechanization and automation. Machines replace workforce, which creates mass unemployment. When agriculture and industry became automated, the service sector absorbed surplus labor, but nowadays there is no sector capable of employing the huge workforce to emerge several decades from now.

Modern societies are correctly referred to as "societies of contract work", but the term "work society" is also often used in the literature, implying that the worker simply exchanges his/her work for a wage in the labor market (Mückenberger 1996). The heyday of wage labor was the 25 years following the Second World War and up to the oil crisis. The crisis of wage labor has been discussed in the literature since the 1960s. Labor gradually disappears in the society of wage labor, which is a major problem. A redefinition of the concept of work is needed, as much of the society has already been excluded from classical wage labor. A smaller rate of the working age population works in traditional forms of employment. In more developed European countries, the atypical forms of work are actually those that can be considered typical, since they have become predominant (Török 2006). The changes of the definition of work not only implies that the world of work has changed, but also that atypical forms of employment, which provide a transition from the world of classical wage labor, have become increasingly popular. (Central and Eastern Europe and Hungary are still lagging behind and so we still consider traditional forms of employment as typical.) Globalization increased the demand for secure forms of employment against insecurity and typical employment has been replaced by atypical employment.

One of the most important elements of the change is clearly the changing employer organization. In classic labor law, the employer is a well-defined production company that is hierarchically managed and connected to employees. This model is increasingly being replaced by network-based "multidimensional" organizations, in which the relationship system is very complex, in some cases with a cluster-like structure. At the same time, new types of organizations develop with a loose relationship between members. Another key element of the change is the mobility of workers and the geographical dispersion of employers. Most large companies have many subsidiaries, branches or premises, and in some cases, employees no longer work in the buildings of the company, but at home or in a telehouse. The regulatory environment was also influenced by the decrease of the "boundaries" of nation states (Kártyás 2009).

According to Németh et al. (2010), employers expect professional work experience and foreign language skills from graduates at the start of their career. This is a new trend in the modern labor market from the 20th century. Later, we will analyze the language skills by job ads. The social competencies (communication skills, problem-solving skills, creativity) are relevant, too. According to Németh the social skills are among the most important requirements demanded from recent graduates by employers (Németh et al. 2010). Alpaydin (2015) wrote that the skills expected from employees changed dynamically with technological and economic developments such as industrial shifts from industry to services after moving to a post-industrial society. He analyzed the different types of qualification and skill mismatches. Accetturo et al. (2014) modeled technical change as variations in the Cobb-Douglas share parameters by a changing labor market. They found that there are spatial differentiations between the low-and high-skilled workers.

In the world of work, constant change can be experienced, as 5% of the existing professions change every five years, the number of professions that do not require any information and communication technology (ICT) skills decreases by 5% every second year and the income generating ability of professions that do not require basic ICT skills is around the minimum wage level. The acquired professional skills become out-of-date in ten years, the amount of work-related knowledge on the internet increases 32 times every two years, the number of internet connections doubles every year and the available bandwidth continuously increases. These changing conditions also put workers in a new position. Automation and mechanization will significantly reduce the human resource needs of certain jobs in the future; Bartha & Sáfrányné Gubik (2018) describe in detail the expected reduction in the number of staff requests for each job.

The global restructuring of the labor market is also accompanied by territorial disparities in the labor market (G. Fekete & Lipták 2011), which implies the deterioration of the equilibrium between supply and demand. Today, besides high unemployment levels, high levels of labor shortages are emerging as a problem in this two-face labor market, which is a major challenge for both employers and employees. There is a need to develop a much stronger competency-based recruitment method and to focus on developing competencies, because the requirements for employees have changed as a result of the high degree of mechanization and automation. Different competencies are required in the same job today than ten or twenty years ago. Jobs have undergone significant transformation and change; when there is no more realistic demand for certain skills some jobs (like wainwright, skinner or weaver) will disappear and new ones will be created.

We assume that the competencies and expectations required for each job will be much more transparent in the job advertisements than before and therefore the whole recruitment process will need to be changed. To test this hypothesis, we conducted a survey of job advertisements in Hungary for the position of controller.

RESEARCH METHODOLOGY

Data was collected in the first half of January 2019 from an online job recruitment website. The source of the data was the profession.hu website. We analyzed only the controller positions. For deeper analysis and to avoid distortions we excluded recruitment, headhunter and human resource companies from our data collection. To process the data, job advertisements were divided into three main categories: (1) tasks, (2)expectations and requirements, and (3) the supply side. Each job advertisement included a new job, a new expectation or the phrasing of the same task was different. This meant that in order to keep the database manageable, the raw database had to be standardized. In order to achieve results, it was necessary to create uniform categories. In the cases of tasks, expectations and supply, we aggregated variables with the same or similar meanings and variables that belong to the same group and have low frequencies.

Tasks. The following categories were created: (1) The category of Development, optimization and operation of controlling and enterprise resource planning (ERP) was created from the aggregation of Improvement and optimization of controlling systems, Deployment and operation of controlling systems and Maintenance and development of ERP. (2) The category Accounting and managing invoices was formed after the aggregation of Managing invoices, Managing accruals and Accounting. These tasks typically are not the tasks of a controller and therefore their frequency was low in the advertisements. Since every task is related to accounting, they were aggregated in one category. (3) Preparation of studies and case descriptions were included in Ad-hoc tasks. (4) Organizing stock, taking into account its content, was integrated into the Control tasks. (5) Participation in Planning and Budgeting Tasks has been re-named Planning and Budgeting. (These two tasks often accompany each other; therefore, in cases where participation in planning was listed as a task, budgeting was also listed. As there were only three exceptions and budgeting is a part of planning, it is logical to treat them as the same variable.) During data collection, the main group of tasks included 20 variables, which were reduced to 13 after standardization.

Requirements and expectations. The following groups were formed: (1) IFRS knowledge and US-GAAP knowledge were aggregated. This step can be justified on the one hand by their low frequency in the sample and on the other by their similarities, as both are accounting standards. (2) Dutch language proficiency and a clean criminal record were eliminated because both were listed only once in the samples and could not be inserted into any other expectations. (3) The competencies of being able-bodied and having a high working capacity were considered the same, so they were aggregated. After standardization, 18 variables were created from the initial 21. It is important to mention that, as in the literature, professional, personal and social competences can be identified (9 competences for each category).

Benefits. The option of Home Office is included in Flexible working hours. (In this main group the companies often did not indicate anything at all, and if they did, they were rather inaccurate. As a result, the supply group included the fewest variables.)

Corporate data. (1) Activities: Data collection was carried out by recording these variables as they were specified in the advertisements and reports. For companies who have not indicated any activities, the website ceginformacio.hu was used to find their Hungarian NACE numbers and activities were assigned to the companies by taking into account the first two digits of these numbers using the data of the tearoszamok.hu website. In the case of multiple activities, using the financial reports of the companies, only the main activity was taken into consideration. This led to a significant reduction in the number of activities, as illustrated in Table 1.

Table 1
Frequency of the companies' activities in the job advertisements of the sample

name		**frequency**
activity	trade	18
	financial sector	15
	food industry	10
	manufacturing	10
	labor market services	10
	consultancy	9
	real estate sector	8
	vehicle production	7
	logistics	5
	informatics	4
	other	4

Source: Own edition

(2) Company size. Companies were categorized by size in addition to their activities. The classification was based on employee numbers, revenue and the total balance sheet. Several companies keep their books in euros; in this case, the average exchange rate on December 30, 2017 was used to convert to HUF. The sample included 53 large companies, 23 medium-sized companies and 24 small companies (Gyenge, 2019).

RESULTS AND DISCUSSION

Relationship between Company Size and Tasks

First we looked at the types and number of tasks listed in the job advertisements depending on the size of the company (Table 2).

Because of the different sample sizes of the groups, data in Table 2 do not say much by themselves. Table 3 including the relative frequency of the mentioned tasks is a better way of illustration.

Taking into account the first variable, the data in Table 3 shows that 75% of small companies indicated preparing reports as a task to be done, while 87% of the medium-sized companies and 77.4% of large companies listed the same task in the advertisements. On the, whole this task was indicated in 79.8% of the advertisements. (It was the most frequently mentioned task.) GBold letters are used to indicate the most common tasks, while italics indicate the least common tasks for each column. As for the group averages of the different company sizes, small companies provided the largest number of tasks proportionately, while medium-sized companies listed the fewest tasks.

In the case of small companies, of the most frequently listed tasks keeping contact shows a relationship with size; that is the increase of company size decreases the role of keeping contact. Moreover, its value of 87.5% is considered very high in its own group and also compared to other groups. There is a similar trend for monitoring and accounting tasks, which are among the lowest in the other two groups. In addition, control tasks also appear in 71% of the advertisements. This implies that the Accounting Manager also carries out controlling functions.

In the case of medium-sized companies, preparing reports was listed at the highest rate with 87%, followed by participation in planning with 74% and participation in closures with 65.2%. While the first two tasks are of paramount importance to each group, participation in closures was mentioned to the highest proportion among the groups. Risk management tasks are negligible in this case as well, like accounting-related tasks, but cost analysis and unit cost calculation also fell below 20%.

Table 3 highlights that the three tasks listed most commonly by large companies are exactly the same as the tasks included in the phases associated with PDCA cycle controlling: planning, analysis and feedback. The lowest results are the same as for medium-sized companies, but here profitability and efficiency analysis are listed the least often.

Table 2
Frequency of the tasks by company size

task	small	medium	large	total
preparing reports	18	20	41	79
preparing forecasts and calculations	14	12	27	53
preparation and evaluation of deviation analysis	16	14	37	67
profitability, efficiency analysis	7	8	14	29
participation in closures	7	15	27	49
controlling and operation of ERP	13	9	28	50
planning, budgeting	18	17	40	75
cost analysis, unit cost calculation	9	4	22	35
control tasks	17	11	25	53
keeping contact	21	13	27	61
ad-hoc tasks	9	8	18	35
accounting, invoice management	9	3	10	22
risk analysis / risk reduction	3	2	7	12
total	161	136	323	620

Source: Own edition

Table 3
Relative frequency of tasks (%) by company size

task	small	medium	large	mean
preparing reports	**75.00**	**86.96**	**77.36**	**79.77**
preparing forecasts and calculations	58.33	52.17	50.94	53.82
preparation and evaluation of deviation analysis	66.67	60.87	**69.81**	**65.78**
profitability, efficiency analysis	*29.17*	34.78	*26.42*	*30.12*
participation in closures	*29.17*	**65.22**	50.94	48.44
controlling and operation of ERP	54.17	39.13	52.83	48.71
planning, budgeting	**75.00**	**73.91**	**75.47**	**74.79**
cost analysis, unit cost calculation	37.50	*17.39*	41.51	32.13
control tasks	70.83	47.83	47.17	55.28
keeping contact	**87.50**	56.52	50.94	64.99
ad-hoc tasks	37.50	34.78	33,96	35.41
accounting, invoice management	37.50	*13.04*	*18.87*	*23.14*
risk analysis / risk reduction	*12.50*	*8.70*	*13.21*	*11.47*

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own edition

Table 4
Relative frequency of professional competences (%) by company size

name	small	medium	large	mean
higher education degree	**87.50**	**95.65**	**90.57**	**91.24**
1-3 years of work experience	58.33	52.17	66.04	58.85
4 years or more work experience	25.00	39.13	*11.32*	25.15
English language skills	**70.83**	**86.96**	**84.91**	**80,90**
German language skills	*8.33*	*13.04*	*7.55*	*9.64*
IFRS, US-GAAP knowledge	*12.50*	*8.70*	*11.32*	*10.84*
Knowledge of MS Office	**79.17**	**82.61**	**84.91**	**82.23**
SAP knowledge	*8.33*	*26.09*	33.96	22.79
Knowledge of ERP systems	16.67	*26.09*	*9.43*	*17.40*

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own edition

Relationship between Company Size and Competencies

Expectations listed in the advertisements were divided into two groups: professional and personal, social competences. First professional competences are discussed (Table 4).

For all three company size categories the same three professional competencies were the most prominent: higher education qualification, English language skills and knowledge of MS Office. In the case of small businesses, these three professional competences are mentioned to a lesser extent than in the other two groups of companies. A further characteristic of smaller companies is that the knowledge of SAP or other ERP system is not a common requirement. Interestingly, for medium-sized companies, the requirement of higher education has the highest proportion (95.7%) within the group and they are the ones who would like to have employees with four or more years of work experience. Large companies prefer to employ people with less work experience. Only 11.3% of them listed four or more years of work experience in their job advertisements, while 1-3 years of work experience could be found in 66% of the advertisements. A high level of division of labor within a company is indicated by the fact that, despite the international environment, only one in nine companies required international accounting skills. As for personal competencies, in line with

the theoretical background (Horváth 2015, Fenyves et al. 2016, Gleich et al. 2016, Tóth & Zéman 2017), companies most often list flexibility, analytical skills, analytical thinking and precision. It is interesting, however, that, contrary to previous surveys, a systematic approach has a minor role.

Precision and good communication skills can be found in 58.3% and 54.2% of small companies' job advertisements. An interesting fact is that the frequency of precision decreases with as company size increases. The same applies to autonomy at work, which was mentioned in 50% of the advertisements. For medium-sized companies, analytical thinking and flexibility were mentioned most commonly within the group and also among the groups (60.9% and 56.5% respectively). At the same time, however, good communication skills, which is one of the most common competencies in the other groups, is only mentioned by 39.3% of the companies in this case. The smallest number of personal competencies were listed in the advertisements of large companies. Interestingly, this group of companies attaches less importance to autonomy at work and flexibility than the others.

Relationship between Company Size and Benefits

Among benefits items, the competitive and youthful, friendly environment and salary are the most commonly listed items in each group, even if the latter does not really mean a realistic possibility. Another common characteristic of the groups is that sporting opportunities and health services are rarely mentioned in the advertisements of small and medium-sized companies, but this rate increases as the company size grows. There is also an increase with company size in listing potential for development and improvement as well as responsibilities at work.

Table 5
Relative frequency of personal competences (%) by company size

name	small	medium	large	mean
autonomy at work	**50.00**	34.78	33.96	39.58
flexibility, cooperative skills	**50.00**	**56.52**	37.74	**48.09**
problem-solving ability	*29.17*	39.13	32.08	33.46
system approach	*16.67*	*21.74*	*24.53*	*20.98*
able-bodied and high working capacity	33.33	*26.09*	*22.64*	*27.35*
analytical thinking, analytical skills	45.83	**60.87**	**54.72**	**53.81**
precision	**58.33**	**52.17**	**50.94**	**53.82**
good communication skills	**54.17**	39.13	**41.51**	44.94
willingness to travel	*8.33*	*8.70*	*9.43*	*8.82*

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own edition

Table 6
Relative frequency of benefits items (%) depending on the company size

name	small	medium	large	total
competitive salary	**66.67**	**78.26**	**47.17**	**64.03**
benefits	41.67	**52.17**	41.51	45.12
multinational environment	16.67	43.48	33.96	31.37
potential for development and improvement	45.83	**56.52**	**58.49**	**53.62**
stable corporate background	**70.83**	17.39	39.62	42.62
education and training	12.50	30.43	20.75	21,23
youthful, friendly environment	**45.83**	**52.17**	**50.94**	**49.65**
responsibilities at work	8.33	26.09	33.96	22.79
flexible working hours	8.33	*13.04*	*11.32*	*10.90*
travel support	*4.17*	*13.04*	16.98	11.40

sporting possibility	*4.17*	*4.35*	*11.32*	*6.61*
health service	*4.17*	*8.70*	*11.32*	*8.06*

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own edition

Table 7
Relative frequency of tasks depending on the company's activity

activity-tasks output table											
	food industry	manufacturing	trade	financial sector	consultancy	logistics	labor market services	IT	real estate sector	other	mean
preparing reports	50.00	**76.47**	**88.89**	**86.67**	**88.89**	**60.00**	70.00	**75.00**	**88.00**	**100.00**	**78. 34**
preparing forecasts and calculations	**60.00**	**70.59**	33.33	46.67	55.56	20.00	**80.00**	50.00	63,00	*25.00*	50.36
preparation and evaluation of deviation analysis	50.00	64.71	**72.22**	**66.67**	**66.67**	**80.00**	50.00	**75.00**	**75.00**	**100.00**	**70.03**
profitability, efficiency analysis	40.0 0	47.06	*27.78*	*6.67*	*22.22*	40.00	*30.00*	*25.00*	*13.00*	50.00	*30.12*
participation in closures	**60.00**	35.29	**72.22**	40.00	33.33	20.00	**80.00**	75.00	25.00	25.00	46.58
controlling and operation of ERP	**60.00**	52.94	50.00	60.00	44.44	40.00	60.00	50.00	13.00	50.00	47.99
planning, budgeting	**70.00**	58.82	61.11	**73.33**	**88.89**	**80.00**	**100.00**	**100.00**	**75.00**	**100.00**	**80.72**
cost analysis, unit cost calculation	50.00	52.94	*27-78*	*6.67*	*22.22*	*0.00*	70.00	50.00	38.00	*25.00*	34.21
control tasks	**70.00**	47.06	55.56	26.67	*22.22*	*0.00*	**9 0.00**	50.00	**100.00**	**75.00**	53.65
keeping contact	**60.00**	52.94	**83.33**	46.67	**66.67**	20.00	**80.00**	25.00	63,00	75.00	57.21
ad-hoc tasks	*10.00*	*29.41*	33.33	26.67	44.44	**60.00**	*30.00*	**75.00**	50.00	50.00	40.89
accounting, invoice management	*30.00*	*11.76*	38.89	13.33	0.00	0.00	*20.00*	*25.00*	50.00	*25.00*	*21.40*
risk analysis / risk reduction	*10.00*	*11.76*	*6.67*	*6.67*	*22.22*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*9.73*

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own editing

Within the group of small companies, it was a stable corporate background that was mentioned the most, which far exceeds the other groups with its 70.8% rate. In contrast, small companies rarely listed a multinational environment which represents the lowest proportion within the groups, with 16.7%. Interestingly, in 10 of the 12 supply items, the lowest values can be found in this group. Medium-sized companies most often indicated a competitive salary, and fringe benefits were also added in 52.2% of the cases. Furthermore, a multinational environment and education and training were mentioned at a rate higher than the average. In the case of large companies, although a competitive salary is one of the most prevalent items within the group, it is still almost 17% below the average and the same applies to benefits. This group can furthermore be characterized by a relatively high proportion of responsibilities at work and of travel support.

Relationship between Activity and Tasks

Based on the data in Table 7, the fewest tasks were mentioned by logistics companies, and the most tasks were listed by companies of the labor market sector. Risk management tasks were clearly mentioned the least in each activity group. There are also "dividing" tasks, like keeping contact, which is of paramount importance for several companies, while only 25% of IT companies mentioned it. Similarly, 75% of IT companies listed ad-hoc tasks, while in the case of several activities, like manufacturing or food industry, the same task appears with the lowest incidence. No task was listed in more than 70% of the cases by food industrial companies. This is peculiar because there was at least one task in each of the other activity groups that was mentioned in at least 75% of the cases. Some tasks are listed regularly by manufacturing companies (like profitability and efficiency analysis with 47% or cost analysis with 53%), while they are less significant in other groups. This seems to be a specificity of the industry, as these companies produce material goods and these tasks traditionally play a major role there. With some backlog, the same applies to food companies.

The situation is reversed for trading companies. Efficiency and cost analysis are less prominent here, while keeping contact and preparing reports play an important role. While planning is mentioned among the tasks in 61.1% of the cases, this value is still below the average by almost 20%. There are many similarities between companies in the financial sector and in consultancy. Based on the tasks to be performed, it is clear that the results of their value-added processes are reflected in the provision of services.

Relationship between Activity and Competencies

For professional competencies, as shown in Table 8, IT companies listed the most requirements, while the fewest requirements were found in the case of real estate companies. Here and at IT companies, English language skills were mentioned in only half of the cases, which falls below the average by 29%.

We also examined work experience by sector. While most sectors prefer younger people with 1-3 years of professional experience, consultancy firms would prefer highly experienced individuals. Industrial companies have similar characteristics in several variables, but contradictions can also be found. For instance, none of the food companies listed knowledge of IFRS or US GAAP, while 17.7% of manufacturing companies mentioned this competence. At 60% of the food companies, SAP knowledge was a requirement, which is twice its average appearance. It is common for trading companies to indicate half of the professional competencies in most advertisements. The other half of the competences, such as German language skills or the knowledge of international accounting and ERP systems, are hardly mentioned in their job advertisements. The financial sector lists the second lowest number of tasks in its job advertisements based on the sample. Three of the tasks (German language skills, knowledge of international accounting and knowledge of SAP) are never mentioned in their advertisements and the people with four or more years of work experience are the least expected by them. In the case of consulting companies, the inverse rate of appearance of work experience was mentioned. A further interesting fact is that this was the activity where the knowledge of enterprise management systems was the most frequently mentioned among professional requirements, although only in one third of the cases. Companies in logistics also rarely mentioned 1-3 years of work experience (in 40% of the cases) and SAP knowledge was mentioned in 40% of their advertisements. We can conclude that these are probably not consulting companies for which headhunting companies look for controllers. This can be inferred from the proportion of work experience listed by the companies. The companies of the real estate sector in the sample primarily act in the domestic market. We can infer this from the lower demand for foreign language competences. Moreover, higher level competences are not necessary in this sector either.

Table 8
Relative frequency of competencies depending on the company's activity

activity-professional competencies output table											
row labels	food industry	manufacturing	trade	financial sector	consultancy	logistics	labor market services	IT	real estate sector	other	mean
higher education degree	**90.00**	**94.12**	**77.78**	**93.33**	**100.00**	**100.00**	**100.00**	**100.00**	**87.50**	**75.00**	**91.77**
1-3 years of work experience	70.00	58.82	**77. 78**	**60.00**	*22.22*	40.00	80.00	50.00	**62.50**	50.00	57.13
4 or more years of work experience	*10.00*	*11.76*	*22.22*	6.67	66.67	20.00	*10.00*	50.00	12.50	50.00	25.98
English language skills	**90.00**	**94.12**	**88.89**	**80.00**	**66.67**	**80.00**	**90.00**	50.00	50.00	**100.00**	**78.97**
German language skills	*10. 00*	*5.88*	*11.11*	*0.00*	*22.22*	*0.00*	*10.00*	*25.00*	12.50	*0.00*	*9.67*
IFRS, US-GAAP	*0.00*	*17.65*	*11.11*	*0.00*	*11.11*	*0.00*	30.00	*25.00*	*0.00*	25.00	*11.99*
Knowledge of MS Office	**90.00**	**94.12**	**88.89**	**80.00**	**77.78**	**100.00**	50.00	**75.00**	**75.00**	**100.00**	**83.08**
SAP knowledge	60.00	41.1 6	33.33	0.00	0.00	40.00	20.00	50.00	*0.00*	25.00	26.95
Knowledge of ERP systems	*10.00*	*17.65*	*22.22*	13.33	33.33	*0.00*	*10.00*	*25.00*	*0.00*	*0.00*	*13.15*
average	47.78	48.37	48.15	37.04	44.44	42.22	44.44	50.00	33.33	47.22	44.30

activity-personal competencies output table											
row labels	food industry	manufacturing	trade	financial sector	consultancy	logistics	labor market services	IT	real estate sector	other	mean
autonomy at work	*10.00*	29.41	27.78	**66.67**	44.44	40.00	**50.00**	50.00	25.00	50.00	39.33
flexibility, cooperative skills	*10.00*	**52.94**	**50.00**	33.33	**77.78**	40.00	**60.00**	**75.00**	25.00	*25.00*	44.91
problem solving ability	*10.00*	23.53	**50.00**	40.00	44.44	40.00	*10.00*	50.00	*12.50*	**75.00**	35.55
system approach	*10.00*	*11.76*	38.89	*13.33*	*33.33*	40.00	20.00	50.00	*12.5 0*	*0.00*	*22.98*
able-bodied and high working capacity	20.00	*17.65*	*22.22*	33.33	55.56	40.00	20.00	*0.00*	*12.50*	50.00	*27.13*
analytical thinking, analytical skills	**70.00**	41.18	**72.22**	*20.00*	**88.89**	**60.00**	40.00	**100.00**	**37.50**	50.00	**57.98**
precision	**60.00**	**58.82**	**55.56**	**46.67**	*33.3 3*	**80.00**	40.00	25.00	**75.00**	50.00	**52.44**
good communication skills	**60.00**	41.18	38.89	40.00	66.67	**60.00**	40.00	50.00	12.50	50.00	**45.92**
willingness to travel	*10.00*	*11.76*	*5.56*	*0.00*	*33.33*	*0.00*	*10.00*	*0.00*	*0.00*	*25.00*	*9.57*
average	28.89	32.03	40.12	32.59	53.09	44. 44	32.22	44.44	23.61	41.67	37.31

Note: bold type indicates the highest value, italics indicates the lowest value.
Source: Own edition

The case of personal competences was not entirely consistent, which implies that the general requirements are independent of the company profile that clearly appeared among the groups. Willingness to travel is the only item that is among the least frequently mentioned variables of all companies. The largest number of competencies in the sample were given by consulting companies. They listed personal competencies in 53.1% of the cases, making them the only group to exceed 50%. Companies in the real estate sector were the least concerned with indicating personal competencies. Companies in the food industry adapted to the total average in the sense that the three most common requirements (analytical thinking, good communication skills and precision) are equal in their group. The numbers, however, highlight that they rarely list other competences. The same applies to manufacturing companies. They mentioned precision at 58.8% and flexibility and cooperative skills at 52.9%. Based on the sample, systematic approach and high working capacity are the least requested competences. Analytical thinking is a priority competence at trading companies with its 72.2% presence in the advertisements, but precision, flexibility and problem-solving are also listed by at least 50% of the companies. High working capacity is the second least mentioned competency in the group after willingness to travel. In the financial sector, autonomy at work is the most common (66.67%), which has the highest value among groups as well. Moreover, precision is mentioned in the 46.7% of the cases and also high working capacity was mentioned here in one third of the cases. Consulting companies prefer flexibility and analytical thinking. Communication skills, high working capacity and willingness to travel were mentioned in this case the most. The last one was mentioned only by 33.3% of the companies, but even this figure is more than three times higher than the average. Companies in logistics are also dominated by the three most common requirements. Willingness to travel was not mentioned, while all other competencies appeared in 40% of their advertisements. At IT companies, high working capacity was not mentioned at all, while analytical thinking appeared in all advertisements. In the case of the real estate sector, precision, the only competency exceeding 50%, was mentioned in 75% of the advertisements.

Relationship between Activity and What is Offered

On the supply side, advertisements included less information not only on the whole, but also by activity.

Companies in logistics reached 45% of items were listed by at least one logistics company and manufacturing companies reached 41.7%. The lowest number of supply items was listed by IT companies with 16.7%. The sample included several supply items that are provided by only certain companies to their employees. These include sporting possibilities and health service. Surprisingly, flexible working hours did not even reach 10%. There is a slight difference in supply among companies in the industry. Manufacturing companies are more likely to attract employees with a competitive benefit package, while food companies tend to favor secondary variables (like stable corporate background or responsibilities at work), in addition to providing fewer opportunities on the supply side. Trading, financial and consulting companies listed only "HR trick" items in the highest proportion. Commercial companies indicated competitive salary at a relatively high rate (66.7%), which, along with providing education and training (which has the highest rate with 38.9%) seems to be a quite attractive sector. It is interesting for the financial sector to have a competitive salary and benefits mentioned at a rate of 40% because most surveys about average income rank companies in the financial sector in the first place. Even if this factor is not listed in the advertisements, companies can give outstanding salaries. In spite of the high level of requirements, consulting companies did not reach more than 50% in any of the supply items. The two most significant supply items can also be considered HR tricks. For logistics companies, both potential for development and improvement and stable corporate background reached 100%. They listed competitive salaries in 80% of their advertisements, the second highest among the groups. The supply side of IT companies is rather poor based on the sample. Previous tables show that most of the tasks were listed by them among the identified sectors, with 51.9%. They are ranked first for professional competencies (50%), while they are ranked second in terms of personal expectations (44.4%) as along with companies in logistics. In contrast, the incidence of supply items is only 16.7%.

Table 9
Relative frequency of competences depending on the company's activity

activity-supply output table											
row labels	food industry	manufacturing	trade	financial sector	consultancy	logistics	labor market services	IT	real estate sector	other	mean
competitive salary	30.00	**82. 35**	**66.67**	40.00	33.33	**80.00**	**70.00**	**50.00**	**75.00**	**50.00**	**57.74**
benefits	**50.00**	**70.59**	33.33	40.00	33.33	40.00	**50.00**	25.00	25.00	**50.00**	41.73
multinational environment	40.00	47.06	16.67	33.33	22.22	60.00	40.00	25.00	12.50	25.00	32.18
potential for development and improvement	**60.00**	47.06	**77.78**	**66.67**	**44.44**	**100.00**	20.00	50.00	**37.50**	25.00	**52.84**
stable corporate background	**50.00**	52.94	27,78	33.33	11.11	**100.00**	70.00	25.00	**50.00**	*0.00*	42.02
education and trainings	20.00	*23.53*	38.89	*6.67*	33.33	20.00	10.00	*0.00*	12.50	25.00	18.99
youthful, friendly environment	30.00	41.18	**77.78**	**73.33**	**44.44**	60.00	30.00	25.00	**37.50**	25.00	**44.42**
responsibilities at work	**50.00**	29.41	22.22	40.00	*0.00*	40.00	20.00	*0.00*	*0.00*	**50.00**	25.16
flexible working hours	*0.00*	*17.65*	16.67	20.00	11.11	*0.00*	10.00	*0.00*	*0.00*	*0.00*	*7.54*
travel support	10.00	47.06	*11.11*	*0.00*	11.11	20.00	*0.00*	*0.00*	*0.00*	*0.00*	9.93
sporting possibility	*0.00*	*23.53*	*0.00*	13.33	11.11	*0.00*	10.00	*0.00*	*0.00*	*0.00*	*5.80*
health service	*0.00*	*17.65*	*11.11*	*6.67*	11.11	20.00	*0.00*	*0.00*	12.50	*0.00*	*7.90*

Source: Own edition

SUMMARY, CONCLUSIONS

Based on the results of the research, several novel relationships can be revealed between the size of the company and the content of the job advertisements. In the case of group averages according to company size, small companies listed the most tasks proportionately in their advertisements, while the fewest tasks were indicated by medium size companies. The analysis of personal competencies implies that, in line with the theoretical background of the topic, companies have a high demand for flexibility, analytical skills, analytical thinking and precision. It is interesting, however, that a lack of importance is attached to a systematic approach, contrary to previous surveys. In the job advertisements, the smallest number of personal competences was listed by large companies. At this company size, autonomy at work and flexibility have less importance compared to other groups.

Investigation by company activity type showed that manufacturing companies tend to try to attract employees with a competitive benefit package, while food companies tend to prefer variables of secondary importance (stable corporate background or responsibility at work). Trading, financial and consulting firms listed items listed "HR tricks" to the highest proportion. Trading companies indicate competitive salary to a relatively high extent, which is supplemented by education and training.

We believe that in the future, the content of job advertisements will be even more important, not only for the position of controller position but also for other positions. A precise and accurate job advertisement is a great help to the applicant as well, since the applicant can assess whether (s)he has enough professional knowledge and competence to perform the tasks specified in the advertisement. We know that there are some limitations of our research, for example the size of the sample or the temporality of the research. However, we think that even so this study is of interest to both employees and employers. Our further research plan is to carry out new research for another position with a similar method.

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REFERENCES

ACCETTURO, A., DALMAZZO, A. & DEBLASIO, G. (2014). Skill polarisation in local labor markets under share-altering technical changes. Journal of Regional Science. 54(2), 249-272.

ALPAYDIN, Y. (2015). Identifying Higher-Education Level Skill Needs in Labor Markets: The Main Tools Usable for Turkey. Educational Sciences: Theory & Practice, 15(4), 945-967.

BARTHA, Z. & SÁFRÁNYNÉ GUBIK, A. (2018.) Oktatási kihívások a technikai forradalom tükrében (Educational challenges in the light of the technical revolution). Észak-magyarországi Stratégiai Füzetek, 15(1),15-29.

BEVERIDGE, W. H. (1909). Unemployment: A Problem of Industry. London: Longmans, Green and Co.

EMMERIJ, L. (1994). The employment problem and the international economy. International Labour Review, 144(4), 449-466.

FENYVES, V., KONDOROSI, F., KEREZSI, D. & DAJNOKI, K. (2016). Vezetői döntést segítő információk a munkaerővándorlás sajátosságai alapján (Management decision-making information based on the characteristics of labor migration). Controller Info, 4(3), 42-51.

G. FEKETE, É. & LIPTÁK, K. (2011). Post-modern values and rural peripheries. Journal of Settlements and Spatial Planning, 2(1), 1-7.

GLEICH, R., LOSBICHLER, H. & ZIERHOFER, R. M. (2016). Unternehmenssteuerung im Zeitalter von Industrie 4.0: Wie Controller die digitale Transformation erfolgreich steuern. Haufe Fachbuch

GYENGE, N. (2019). A kontroller álláshirdetések mögöttes tartalma (Contents of Controller Job Ads). University of Miskolc.

HORVÁTH & PARTNERS (2015). Controlling, Út egy hatékony controlling rendszerhez (Controlling, The path to an effective controlling system). Budapest: Saldo Kiadó

KÁRTYÁS, G. (2009). A munkajog új kihívásai a XXI. század elején. (New challenges for labor law in the 21st century). Munkaügyi Szemle, 53(1), 42-48.

MÉSZÁROS, R. (2010). A globális gazdaság földrajzi dimenziói (Geographical dimensions of the global economy). Budapest: Akadémiai Kiadó

MÜCKENBERGER, U. (1996). Toward a new definition of the employment relationship. International Labour Review, 135(6), 683-695.

NÉMETH, E., MAJOR, S. & SZABÓ, G. (2010). Market Labour Expectations and Higher Education: Opposing Trends, In: Klucznik-Törő, A; Bódis, K; Kiss-Pál I (eds.) From Higher Education to Innovation, Management and Enterpreneurship in a Changing Market: International Conference and Workshops on Higher Education Partnership and Innovation (IHEPI 2010): Proceedings. Budapest: Publikon Kiadó, 103-111.

RIFKIN, J. (1995). The End of Work – The Decline of the Global Labor Force and the Dawn of the Post-Market Era. New York: Tarcher/Putnam

TÓTH, A & ZÉMAN, Z. (2017). Stratégiai pénzügyi controlling és menedzsment (Strategic Financial Controlling and Management). Budapest: Akadémia Kiadó

TÖRÖK, E. (2006). Túlléphetünk-e a bérmunka társadalmán? (Can we transcend the society of wagework?). Szociológiai Szemle, 16(2), 111-130.

The Effect of Large Companies on Spatial Structure in Central and Eastern Europe with a Particular Focus on Enterprises in the Technology, Media & Telecommunications Industry

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SUMMARY

Many theoretical and practical works aim at describing the spatial structure of Central and Eastern Europe. This article gives an overview of papers describing the spatial structure of Central and Eastern Europe with different methods. Our goal is to contribute to understanding the Central and Eastern European economic spatial structure and within this we examine the role of the Technology, Media & Telecommunications (TM&T) industry. This industry was chosen because it includes the most knowledge-intensive enterprises. We found that this industry plays a small role in the activities of the most important companies in the region. The capital's major economic centres are the capitals. Thus, both the Central European Pentagon and the New Banana spatial models are suitable for describing the spatial structure. The spatial picture of the TM&T industry is basically concentrated on relatively few large cities, and the region's most important centre is Warsaw.

Keywords: spatial structure, Central and Eastern Europe, grouping analysis, Technology, Media & Telecommunications industry

Journal of Economic Literature (JEL) codes: R10, R12

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INTRODUCTION

The importance of multinational and transnational companies has increased in the globalised world and world economy, as well as the effect of supranational and national institutions and of governmental decisions. Big cities, the stage of many of these activities, have become the leading centres of the world economy. In the last few decades, the increasing economic leading role of the cities, the metropolitan concentration of the "new economy" and the political, administrative, cultural and social importance of cities have become determining factors (Enyedi 2003). Companies, institutions, national economies, different territorial units and individuals are continuously taking part in competition. They have to perform well in different race conditions.

According to Enyedi (2012), new spatial forms have appeared lately and the urban agglomeration in its traditional sense has been replaced by the metropolitan region. "Several cities exist without their own agglomerations that cooperate with other cities in a system of special relationships. Cities create networks that serve as a base for regions..." Enyedi (2012, p. 25). The new economy of big cities has a concentrating effect. For companies and institutions, the opportunity to establish relationships, the variety of business services, the formation of "networks promoting interactive learning, creativity and innovation" Enyedi (2012. p. 18) and constant changes require the "closeness" of companies to each other. Therefore clusters, traditional and not traditional economic activities and the related services have become denser in these developed metropolitan regions. It has become accepted that global competition is

actually the competition of big cities and regions as well (Bernek 2000; Lengyel & Rechnitzer 2000; Dicken 2007). At the same time, however, besides the intensive competition, closer cooperation than is also appearing in the economic space. Besides big companies, small and medium sized enterprises also are getting involved in global, regional and urban spaces in large numbers (Lux 2012).

The economic leading role of cities is reflected in the space structure and it has an effect on the appearance of nodes and networks. In our paper, we aimed to model the space structure of Central and Eastern Europe and to particularly examine the role of the Technology, Media & Telecommunications (TM&T) industry – which we consider to be the most innovative – in regional processes.

THE SPATIAL STRUCTURE OF CENTRAL AND EASTERN EUROPE IN CONSIDERATION OF CITIES

The regions of Central and Eastern Europe are also included in the literature dealing with the spatial structural forms of Europe. The zones, axes, forms, as well as the polycentric models can be identified for this area as well. Out of the spatial structural forms belonging to the first group, the "Central European Boomerang" may play the most important role. According to Gorzelak (2012), the determinant areas of the form – stretching from Gdansk to Budapest, including Poznan, Wroclaw, Prague, Brno and the triangle of Vienna-Bratislava-Budapest – are the capitals, the real stages of development. The Cucumber model is also linked to this, which is a developmental zone involving Berlin, Prague, Bratislava, Vienna and Budapest (Kunzmann 1998).

The "Red Octopus" of van der Meer (1998) or the "Blue Star" of Dommergues (1992) also include eastern tongues and effects. The other great group of the visualizations of the European space structures emphasizes the explanatory role of the polycentric space structure. According to Kunzmann & Wegener (1991) and Kunzmann (1992, 1996), the polycentric structure of our continent is determined by metropolitan regions (that can be found not only inside the "Blue Banana") as a Bunch of Grapes. The polycentric idea has become more and more popular and is a key element of ESDP (1999). It has played an increasingly important role in the European regional cohesion policy (Faludi 2005) and it appears intensively in Eastern European examinations (ESPON 2012) as well.

One of the reasons for the strengthening of the polycentric characteristics is the fact that there has been a spatial concentration process in Europe since the 1990s, whereby differences in the shrinking traditional industry in the small and medium sized cities and the services and high-tech in big cities have increased. At the mezzo (national) level, it is the division of labour among cities, while at the micro (urban region) level, the urban functions and the cooperation within the region are emphasized. In the BBSR (2011) work, however, the political, economic, scientific, transport and cultural functions of the urban areas are those that strongly influence the spatial structure. As for big cities and other cities, many classifications and rankings can be found in the literature, of which the demographic, the functional and the hierarchy-based classifications may be the most popular. Several of them include data for the region we examine; the GaWC classifying, based on functions or the ESPON research, stands out among them. The world according to GaWC is a city-centred world of flows, in contrast to the more familiar state-centred world of boundaries. Cities are assessed in terms of their advanced production services using the interlocking network model. Indirect measures of flows are derived to compute a city's network connectivity – this measures a city's integration into the world city network. The GaWC (Globalization and World Cities Research Network) ranked Prague, Warsaw and Budapest as gamma world cities in the region due to their role in the markets of advertising, banking and legal services (Beaverstock et al. 1999, Csomós 2012, 2015). This classification is in line with the classification of ESPON (2005, 2012), where the capitals of the region are listed on the 4th MEGA level (Prague, Budapest, Warsaw and Bratislava) followed by cities like Bucharest, Ljubljana, Katowice, Sofia, Lodz and Poznan on the 5th Mega level. In the hierarchical classification of the big cities of the world, Erdősi (2003) classified Budapest and Prague as international big cities with regional importance. Besides these classifications, other opinions and examinations also strengthen the leading spatial organising role of the capitals in the Central and Eastern European region (Sassen 1991, Enyedi 2003, Pénzes & Fekete 2014) and their regional economic leading role (Csomós 2011), as is shown in the Central European Pentagon model (Liebenath et al. 2007). Most researchers, however, agree that these big cities fall behind the economic leading role of Vienna or the large German cities (Csomós 2011). It is important to mention the "New Banana" model, which is the potential second European economic core. In this model we supplement the development zone with Berlin, Prague, Bratislava, Vienna and Budapest to Ljubljana and Zagreb (SIC 2006).

RESEARCH ASPECTS

In the following sections we examine more thoroughly the background of these spatial structural relations. In our study, we focussed on the following questions: what characterizes the spatial structure of Central and Eastern Europe? What is the regional pattern of the TM&T sector in the region? What are the most important centres, and what spatial structure model can be used to describe the spatial nodes of the sector?

One important aspect in planning the study was to carry out our calculations based on available data that provide

accurate information about the status of the economy. Based on these considerations, we selected the Deloitte Central Europe Top 500 Report list, which includes the 500 most important companies of the examined region based on their estimated revenues. This list does not includes banking or insurance companies. Russia and Belarus were not included in the Deloitte Central Europe Top 500 Report due to difficulties in acquiring data from these countries as well as certain doubts concerning the credibility of the available figures (Raźniak et al. 2018). Therefore, 16 countries were included in our study.

The cities that host the headquarters of the companies on the list are included in the examination and the centroids of the cities are shown on our maps. The problem of headquarters and sites arises here, as it often does in statistics. It refers to the fact that the activity of a given company may not be performed in the city where the headquarters are registered. Instead, it may be at another site in many cases. As we did not aim at modelling the spatial distribution of production and its changes but rather the interrelation of the leading role of the centres and the general spatial structural relation through it, we did not deal with this problem, as we assigned the revenues of each company to the city that hosts its headquarters.

We considered it important to model both the current spatial structure and its changes in the recent past. We examined the current situation using the Deloitte Central Europe 500 2015, while we used the 2008 version of this list for comparison.

RESULTS

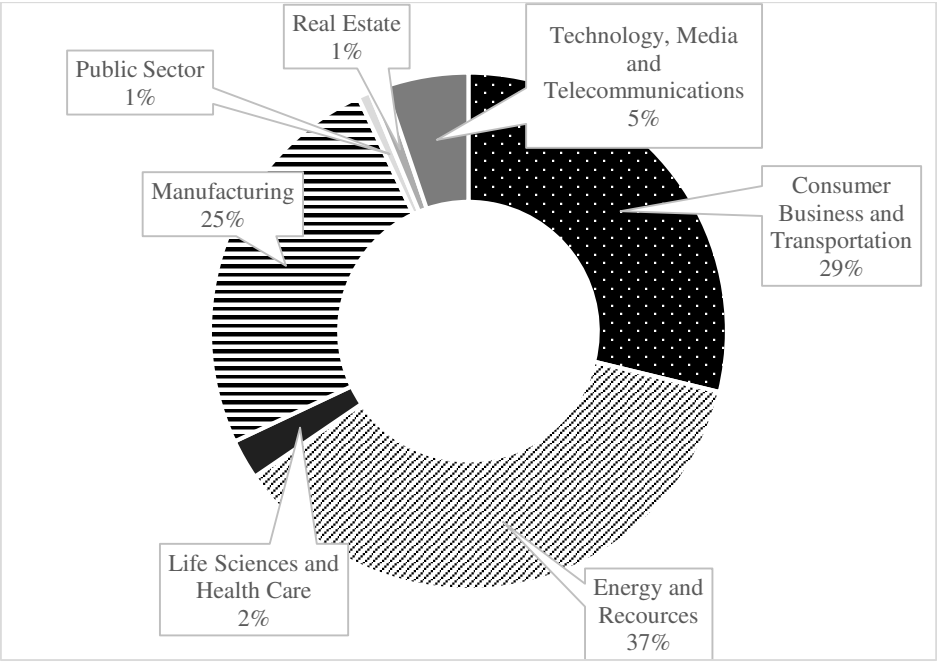
Analysing the data further (Table 1), we find that Poland shares 38%, the Czech Republic 16%, and Hungary 13% of the 500 most important companies of the region in 2015. As far as the revenues are concerned, the situation is similar, with the only exception that the share of Poland is as high as 36%. The sectoral distribution of the companies (Fig. 1) shows that 37% of the revenues comes from firms categorized in the field of Energy and Resources, followed by Consumer Business and Transportation with 29% and Manufacturing with 25%. The share of the Technology, Media and Telecommunication industry, which is the focus of our research, is only 5%.

The list is revealing in the aspect that it does not include several countries of the region. The companies of Albania, Belarus, Moldova and Montenegro are not among the 500 best performing companies of the region because they did not reach the cut-off value. Another important point is that the data of the companies in Austria, despite having the greatest effect on the Central European spatial structure, are not included in the list, so we cannot calculate with their headquarter data, either.

Table 1
Data of the Deloitte Central Europe Top 500 2015, broken down by country

Countries	Number of companies	Revenues (million EUR)	Average revenues per company (million EUR)
Bosnia-Herzegovina	2	1 033	517
Bulgaria	10	11 705	1 170
Croatia	13	18 894	1 453
Czech Republic	73	109 247	1 497
Estonia	4	3 473	868
Hungary	67	93 573	1 397
Latvia	5	4 675	935
Lithuania	11	14 139	1 285
Poland	183	259 667	1 419
Macedonia	1	1 189	1 189
Romania	46	46 415	1 009
Serbia	7	7 214	1 031
Slovakia	32	45 194	1 412
Slovenia	17	20 073	1 181
Ukraine	29	47 295	1 631
Central and Eastern Europe	*500*	*683 785*	*1 368*

Source: Deloitte Central Europe Top 500



Source: Deloitte Central Europe Top 500

Figure 1. Deloitte Central Europe Top 500 2015 data by economic sector

Table 2
The share in the revenue of CEE500 enterprises in the Technology, Media & Telecommunications industry from the total country revenues

Countries	**2008**	**2015**
Bulgaria	7.9	–
Croatia	13.7	4.8
Czech Republic	8.8	7.8
Estonia	–	34.4
Hungary	14.8	5.5
Latvia	21.5	–
Poland	6.7	4.7
Romania	8.2	6.4
Serbia	16.4	14.1
Slovakia	19.1	5.6
Slovenia	3.1	3.6
Ukraine	7.0	1.2
Total	*9.0*	*5.2*

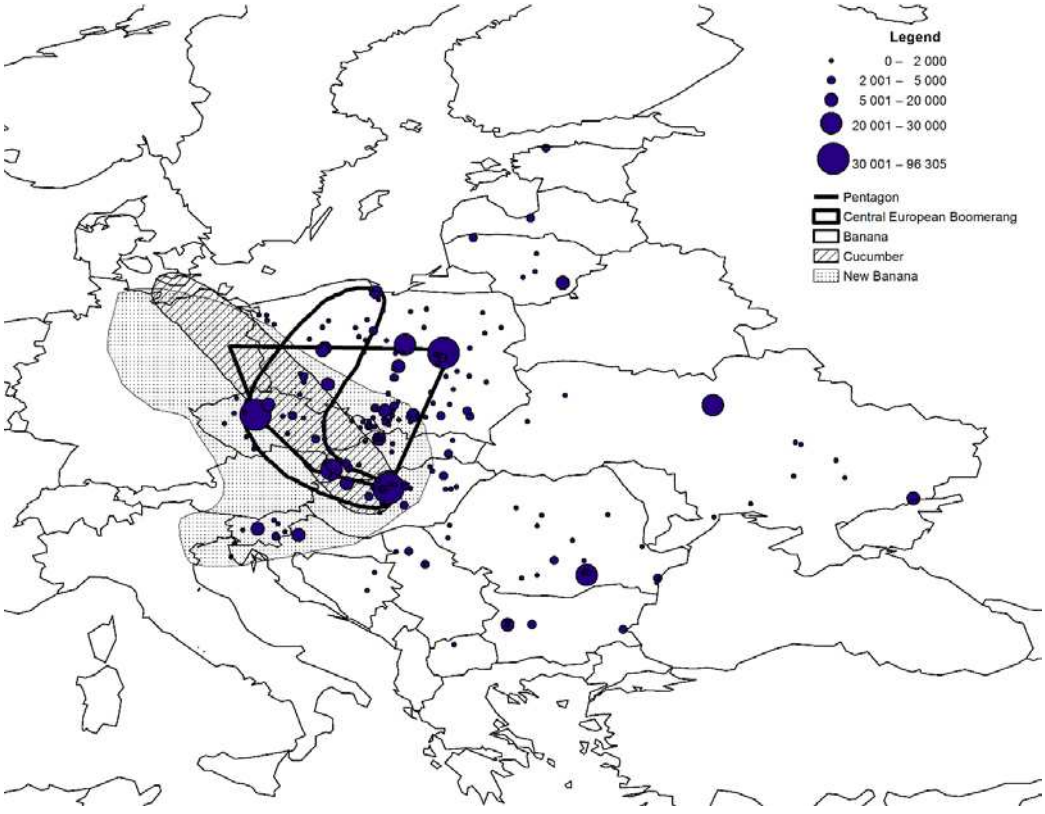
Source: Deloitte Central Europe Top 500

Table 2 shows the share of revenues for Technology, Media & Telecommunication sector of the 500 companies included in the Deloitte Top 500 list. Their share in 2015 was about 5.2%. The share of revenues for Technology, Media & Telecommunication sector are the highest in Estonia, Serbia and the Czech Republic. With the exception of Estonia and Slovenia, their share in the region decreased slightly during the period under review. Compared to 2008, a decline of about 4 percentage points occurred.

Table 3
The ten most important cities based on CE TOP 500

Rank	Headquarters, 2008	Revenues 2008 (EUR million)	Share from the revenues of the top 500 companies, 2008	Headquarters, 2015	Revenues 2015 (EUR million)	Share from the revenues of the top 500 companies, 2015
1	Warsaw	85 452	15.3	Warsaw	96 306	14.1
2	Prague	48 655	8.7	Prague	67 710	9.9
3	Budapest	39 105	7.0	Budapest	55 486	8.1
4	Kiev	31 446	5.6	Kiev	29 629	4.3
5	Bratislava	20 314	3.6	Bratislava	25 365	3.7
6	Bucharest	19 402	3.5	Bucharest	25 290	3.7
7	Plock	18 748	3.3	Plock	22 040	3.2
8	Zagreb	13 398	2.4	Zagreb	17 690	2.6
9	Donetsk	11 874	2.1	Gdańsk	14 272	2.1
10	Ljubljana	10 262	1.8	Ljubljana	12 210	1.8

Source: Own compilation from Deloitte Central Europe Top 500



Source: Deloitte Central Europe Top 500

Figure 2. Revenues (million EUR) of TOP 500 companies in Central and Eastern Europe, 2015

In Figure 2 we labelled settlements with more than 5 billion euro in corporate revenues. The 500 companies with the highest revenues belonged to 170 settlements in 2008, and to 196 in 2015.

The data highlight the outstanding role of capitals and capital regions. The dominance of the cities in the Visegrád countries (Poland, Czech Republic, Slovakia and Hungary) is clear based on the map. Nonetheless, although there are visible spatial clusters, the spatial location of the

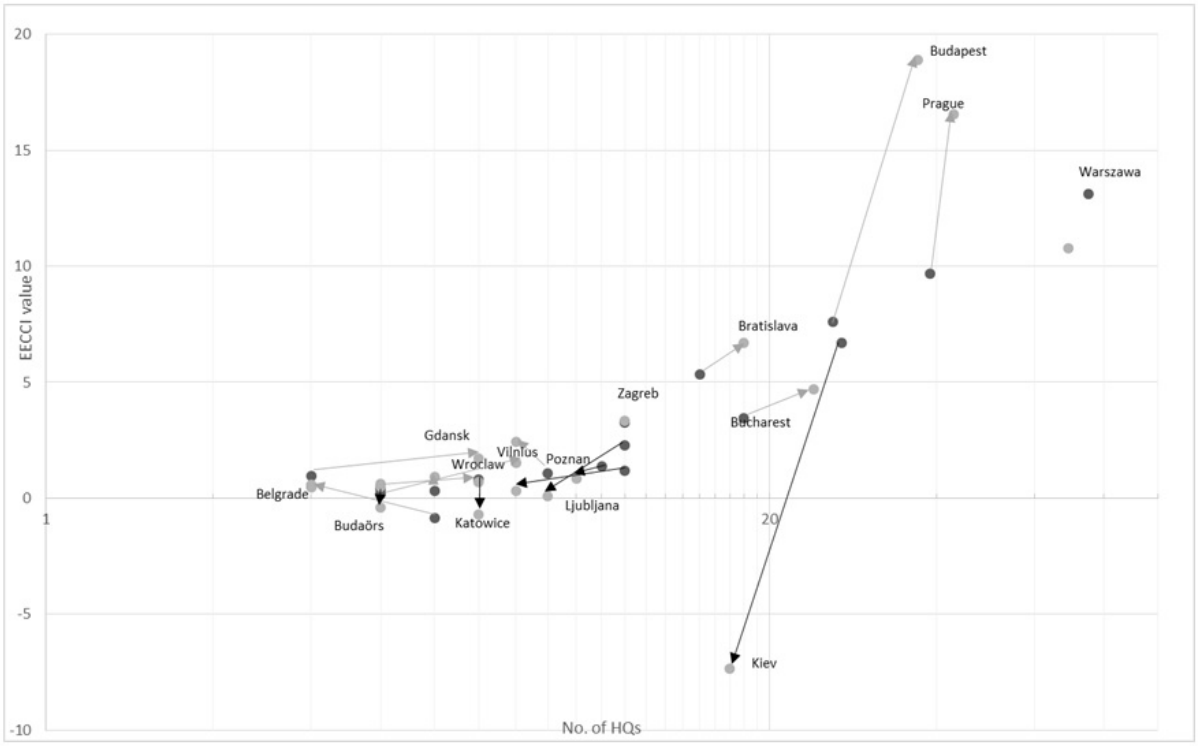
examined companies is relatively scattered. The differences between the most important spatial structure models will be discussed later.

In essence, we can see this in the table of the 10 most important cities. In addition, the sweep of Plock is also remarkable (largely due to the energy sector) in 2015. For the years under review, the list has changed only on the 9th place, so the order between the big cities can be considered stable (Table 3).

In this article we assume that the control function in the economy of Central and Eastern Europe is performed by cities that are home to at least three top corporate headquarters. The same minimum number for the Command and Control Index in the world economy was listed by Csomós and Derudder (2014). In this article, this yields an Eastern European Command and Control Index (EECCI). The EECCI employs a standardization method based on the mean and the standard deviation of financial values for each corporation studied used by Csomós (2013) to create the Command Control Index (cited by Raźniak et al. 2017).

$$EECCI_{xy} = \sum_{i=1}^{n_{xy}} \frac{R_{ixy} + S_{ixy}}{2}$$

where:
Rixy = proportion of revenues from sales in the total dataset;
Sixy = proportion of net income in the total dataset;
i = number of company headquarters per city in a given year ($i \geq 3$);
n = total number of companies headquartered in city x in year y.



Source: Own compilation based on Deloitte Central Europe Top 500

Figure 3. Cities hosting the headquarters of three or more top-ranked corporations

Figure 3 contains of the names of cities that are home to three or more top-ranked corporations as well as corresponding EECCI index values. The largest number of corporate headquarters and the highest EECCI values for 2008 and 2015, which indicate the highest economic potential and the strongest command and control functions, were noted for the capital cities of the five largest countries in Central and Eastern Europe: Budapest, Prague, Warsaw, Bratislava and Bucharest. Of the 22 cities, 13 showed an increase in the EECCI index value over the study period, with the biggest increase for Wroclaw (327% relative to 2008). The number of corporate headquarters in Budapest increased over the time period to the greatest extent. Several cities in the region experienced a decline in EECCI: Plzeň (-2%), Warsaw (-18%), Poznan (-40%), Sofia (-72%) and Ljubljana (-98%). Thirteen cities (including Budapest, Prague, Bucharest, Bratislava and Zagreb) experienced an increase in EECCI values, and nine cities experienced a decrease in EECCI values.

We next studied the competitiveness of cities having three or more headquarters. In this approach, development (revenues per capita), efficiency (revenues per net income), profitability (net income per headquarters) and embeddedness (headquarters per capita). The formula can be seen below.

$$\frac{Revenues}{Population} = \frac{Revenues}{Net\ income} \frac{Net\ income}{No.of\ headquarters} \frac{No.of\ headquarters}{Population}$$

We consider those cities to be competitive where the revenue per capita is higher than the average, while cities that are below the average in this value are at a competitive disadvantage. A complex competitive advantage is established when the revenues per capita and all three components of development for the given city have above average values. We can also speak of a multi-factor advantage if revenues per capita and two factors are above average, or a single-factor competitive advantage if just one factor meets this condition.

Table 4
The competitiveness of cities with 3 or more large corporate headquarters

Cities	Competitiveness 2015	Change in competitiveness 2008/2015
Belgrade	0100	0000
Bratislava	1011	1011
Bucharest	0010	1011
Budaörs	1001	0000
Budapest	1011	1011
Gdańsk	1110	1101
Katowice	1001	1001
Kiev	0000	0000
Kraków	0010	0010
Ljubljana	1001	0000
Lódz	0100	1101
Plzeň	0011	0010
Poznan	0101	0100
Prague	1011	1011
Riga	0010	1011
Sofia	0000	0000
Székesfehérvár	1011	0011
Torun	0010	1010
Vilnius	0010	1011
Warsaw	1101	0100
Wroclaw	0100	1001
Zagreb	1011	1100

Source: Own compilation based on Deloitte Central Europe Top 500

First, we can state that competitiveness is largely determined by embeddedness (Table 4) (we have quantified with the headquarters per capita). Using this approach, we found that there is no cities in this region with a complex competitive advantage. Bratislava, Budapest, Gdansk, Prague, Székesfehérvár, Warsaw and Zagreb are in the best position with a multi-factor competitive advantage. In a dynamic analysis (on the change from 2008 to 2015) there is no cities in this region with complex competitive advantage, either. Bratislava, Bucharest, Budapest, Gdansk, Lódz, Prague, Riga, Vilnius and Zagreb each have a multi-factor competitive advantage.

Next, the investigation was limited to the cities involved in the TM&T sector (Table 5). The calculations were then made only on the basis of data from this industry. Embeddedness is also the most important factor in this case. In the case of Bratislava, Pardubice, Warsaw and Zagreb, we see a multi-factor competitive advantage based on 2015 data, while in Bucharest and Ljubljana the same is true for change.

Table 5
The competitiveness of cities hosting CEE500 enterprises in the Technology, Media & Telecommunications industry

Cities	Competitiveness 2015	Change in competitiveness 2008/2015
Belgrad	0000	1001
Bratislava	1011	0010
Bucharest	0101	1101
Budapest	0100	0010
Kiev	0000	0010
Ljubljana	1011	1011
Pardubice	1101	1001
Praha	0011	0011
Warsaw	1101	1100
Zagreb	1011	0010

Source: Own compilation based on Deloitte Central Europe Top 500

We also analysed the extent to which conclusions can be deduced from the previously reported models and the revenues of cities affected by the CEE500. As can be seen from the data in Table 6, the New Banana model covers the largest area in the region and is characterized by most of the company's revenues, with 2015 data accounting for nearly half of the revenue. If we narrow down our research to companies in the TM&T sector (Table 7), we can see the superiority of the New Banana and the Central European Pentagon.

Table 6
The share of cities affected by each model from the revenue of CEE500 enterprises

Year	Central European Boomerang	New Banana	Cucumber	Central European Pentagon
2008	32	45	20	35
2015	37	49	22	36

Source: Own compilation based on Deloitte Central Europe Top 500

Table 7
The share of settlements affected by each model from the revenue of CEE500 enterprises in the Technology, Media & Telecommunications industry

Year	Central European Boomerang	New Banana	Cucumber	Central European Pentagon
2008	39	57	44	58
2015	44	50	45	49

Source: Own compilation based on Deloitte Central Europe Top 500

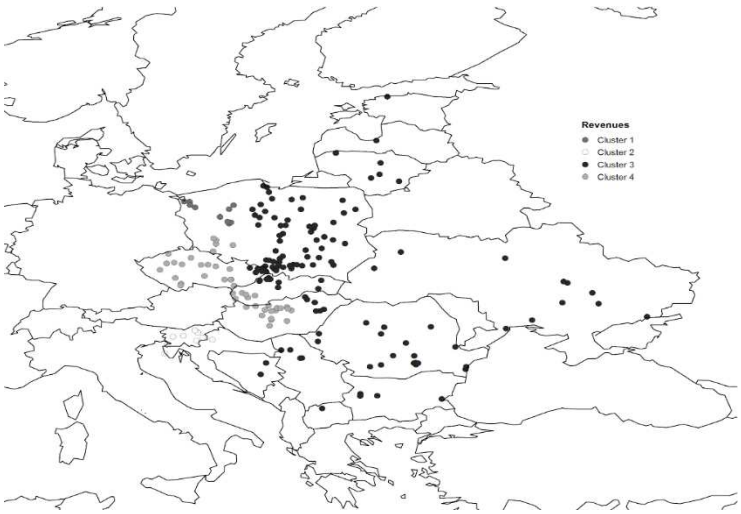
With GIS methods we have attempted to group the settlements on the list in order to determine their spatial pattern and to analyse how these cities effect the spatial structure of the region. In our work we used the ArcGIS 10.1 Grouping Analysis module. In the grouping process, we took into account the income, profits and the population of the given settlements. Several attempts were made to clearly distinguish the delimitation of the four clusters and to characterize them by the formation of groups. In terms of neighbourhoods, the relationship between the nearest 4 neighbours was considered relevant in the calculations.

The four clusters are shown in Figure 4. The first cluster consists of settlements located in the northwest of Poland, while the second consists of Slovenian and Croatian cities. The fourth cluster comprises a significant proportion of southwestern Poland, Czech, Slovakian and Hungarian cities, while the third one includes all other cities outside of it. By examining the features of the four clusters, we can state that the third has more than half of the income and nearly eight tenths of the population. In the case of net revenues, however, Cluster 4 is the most dominant. Cluster 4 is the most decisive factor for both per capita income and per capita revenues which is the region's dominant spatial unit (Table 8).

Table 8
The share of clusters, 2015

Cluster	Revenue	Net income	Population	Revenue per capita	Net income per capita
Cluster 1	3.6	1.1	1.9	187.5	57.2
Cluster 2	5.5	4.8	3.0	182.7	156.7
Cluster 3	56.7	20.0	77.9	72.8	25.6
Cluster 4	34.1	74.2	17.1	199.3	433.3
Total	100.0	100.0	100.0	100.0	100.0

Source: Own compilation based on Deloitte Central Europe Top 500



Source: Own compilation based on Deloitte Central Europe Top 500

Figure 4. Clusters of settlements in the 2015 CEE500 list

Source: Own compilation based on Deloitte Central Europe Top 500

Figure 5. Clusters of settlements in the Technology, Media & Telecommunications industry of CEE500 enterprises, 2015

Table 9
The share of clusters in TM&T industry, 2015

Cluster	Revenue	Net income	Population	Revenue per capita	Net income per capita
Cluster 1	26.8	16.9	12.9	207.3	130.9
Cluster 2	30.7	14.8	10.4	294.8	141.6
Cluster 3	42.5	68.3	76.6	55.4	89.1
Total	100.0	100.0	100.0	100.0	100.0

Source: Own compilation based on Deloitte Central Europe Top 500

We can distinguish three clusters for TM&M. The first cluster belongs to Warsaw, which can be considered as the regional centre of the sector. The second cluster is the capitals of the region (except Ljubljana) supplemented with Rzeszów. The remaining cities can be classified in the third cluster. The characteristics of the clusters are shown in Table 9.

CONCLUSION

In our work, we tried to outline the economic structure of Central and Eastern Europe. We have proven that the Central European Pentagon and the New Banana model are best able to describe the region's economic structure. We indicated that the highest economic potential and the strongest command and control functions were noted for the capital cities of the five largest countries in Central and Eastern Europe: Budapest, Prague, Warsaw, Bratislava and Bucharest.

It can be concluded that the role of the TM&T industry within the 500 most important companies in the Central and Eastern Europe region is relatively small. Currently the role of this sector in the 500 most important enterprises appears to be declining, in contrast to the general trends of the world economy. This, in turn, is a general, but in our opinion, short-term – trend in the region, and we consider it important to study as one of the keys to future spatial structure processes.

In terms of the TM&T industry, the importance of the cities in the region, including Warsaw, can be highlighted, which capital is not only this industry but also in general the most important economic centre of the region. From the point of view of spatial structure, the western part of the region can be characterized by positive processes, which correspond most closely to the area bounded by the New Banana spatial structure model.

Acknowledgement

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REFERENCES

BBSR (2011). Metropolitan areas in Europe. BBSR-Online-Publikation, Nr. 01/2011. Bonn: Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Federal Office for Building and Regional Planning, Germany..

BERNEK, Á. (2000). A globális világ „új gazdaságföldrajza". Tér és Társadalom, 14(4), 87–107. https://doi.org/10.17649/TET.14.4.607

BEAVERSTOCK, J. V. & TAYLOR, P. J. & SMITH, R. G. (1999). A roster of world cities. Cities 16(6), 445–458. https://doi.org/10.1016/S0264-2751(99)00042-6

CSOMÓS, G (2011). A közép-európai régió nagyvárosainak gazdaságirányító szerepe. Tér és Társsadalom, 25(3), 129–140. https://doi.org/10.17649/TET.25.3.1872

CSOMÓS, G. (2012). GaWC Data Set 26: global command and control centres, 2006/2009/2012. http://www.lboro.ac.uk/gawc/datasets/da26.html (accessed April 2019)

CSOMÓS, G. (2013). The command and control centers of the United States (2006/2012): An analysis of industry sectors influencing the position of cities. Geoforum, 50, 241–251. https://doi.org/10.1016/j.geoforum.2013.09.015

CSOMÓS, G. (2015). The ranking of cities as centres of the Hungarian economy, 1992-2012. Regional Statistics 5(1), 66–85. https://doi.org/10.15196/RS05104

CSOMÓS, G. & DERUDDER, B. (2014). European cities as command and control centres, 2006-11. European Urban and Regional Studies, 21(3), 345–352. https://doi.org/10.1177/0969776412453149

DICKEN, P. (2007). Global Shift: Mapping the Changing Contours of the World Economy. London: Sage Publications.

DOMMERGUES. P. (1992). The Strategies for International and Interregional Cooperation. Ekistics, 352-353, 7–12.

ENYEDI, G. (2003). Városi világ – városfejlődés a globalizáció korában. Pécs: Pécsi Tudományegyetem.

ENYEDI, G. (2012). A városi világ. Budapest: Akadémiai Kiadó.

ESDP. (1999). European Spatial Development Perspective (Adopted by the European Council of EU Ministers Responsible for Spatial Planning, in Potsdam, 10-11/05/99). Brussels: European Commission.

ESPON. (2012). POLYCE Metropolisation and Polycentric Development in Central Europe. Luxembourg: EU ERDF, ESPON.

FALUDI, A. (2005). Polycentric territorial cohesion policy. In: Faludi A. (ed.) Territorial cohesion: An unidentified political objective (Special Issue). Town Planning Review 76 (1) pp. 107–118. https://doi.org/10.3828/tpr.76.1.1

GORZELAK, G. (2012). The Regional Dimension of Transformation in Central Europe. London: Routledge.

KUNZMANN, K. R. (1992). Zur Entwicklung der Stadtsysteme in Europa. Wien Mitteilungen der Österreichischen Gesellschaft, 134, 25–50.

KUNZMANN, K. R. (1996). Euro-megalopolis or Themepark Europe? Scenarios for European spatial development. International Planning Studies 1(2), 143–163. https://doi.org/10.1080/13563479608721649

KUNZMANN, K. R. (1998). World city regions in Europe: Structural change and future challenges. In: Lo, Fu-chen; Yeung, Yue-man (eds.): Globalization and the World of Large Cities (pp. 37–75). Tokyo, New York, Paris: United Nations University Press.

KUNZMANN, K.R. & WEGENER, M. (1991). The pattern of urbanization in Europe. Ekistics, 58(350-351), 282–91.

LEIBENATH, M. & HAHN, A. & KNIPPSCHILD, R. (2007). Der „Mitteleuropäische Kristall“ – zwischen „Blauer Banane“ und „osteuropäischem Pentagon“. Perspektiven der neuen zwischenstaatlichen deutsch-tschechischen Arbeitsgruppe für Raumentwicklung. Angewandte Geographie 31(1), 36–40. https://doi.org/10.1007/s00548-007-0008-2.

LENGYEL, I. & RECHNITZER, J. (2000). A városok versenyképességéről. In: HORVÁTH, G., & RECHNITZER, J. (eds.) Magyarország területi szerkezete és folyamatai az ezredfordulón (pp. 130–152). Pécs: MTA RKK.

LUX, G. (2012). A gazdaság szerepe a városi térségek fejlesztésében: A globális kihívásoktól a fejlesztéspolitikáig. In: SOMLYÓDYNÉ PFEIL, E. (ed.), Az agglomerációk intézményesítésének sajátos kérdései: Három magyar nagyvárosi térség az átalakuló térben (pp. 69–94). Pécs: Publikon Kiadó, Pécs.

MEER, L., VAN DER (1998). Red octopus In BLAAS, W. (ed.), A new perspective for European spatial development policies op. cit., pp. 9–19. Avebury: Aldershot.

PÉNZES, J. & FEKETE, J. (2014): Transformation of the spatial structure in the Visegrad countries in the light of the location of peripherial areas In: Radics, Z.–Pénzes, J. (eds). Spatial-economic cohesion and competitiveness in the context of tourism (pp. 11–24). Debrecen: Didakt Kiadó.

RAŹNIAK, P., DOROCKI, S. & WINIARCZYK-RAŹNIAK, A. (2018). Eastern European cities as command and control centers in a time of economic crisis. Acta Geographica Slovenica, 58(2), 101–110. https://doi.org/10.3986/AGS.3124

SASSEN, S. (1991). The Global City: New York, London, Tokyo. Princeton, NJ: Princeton University Press.

SIC! (2006). Sustrain implement corridor. Long factbook. http://195.230.172.167/cms_sic/upload/pdf/061010_SIC_LongFactbook.pdf (downloaded: October 2012).

The Silver Generation as Potential Purchasing Power in Budapest: a Case Study

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SUMMARY

The age structure of the society in the individual countries belonging to the Visegrád Group has changed significantly since 1989. In Hungary, changes in the age structure have had a great impact on the whole economy. The process of aging in society has been going on in Western Europe and will probably continue. Unlike in the Western European countries, in our region the significance of the purchasing power of the elderly has not yet been fully recognized. There is no best practice or strategy to attract the ever-growing age group; applying marketing to seniors is a novelty in the business sector. Shopping centres and e-business face great challenges in the near future, and the change incorporates the risk of failure or renewal. Although the processes apply to all shopping centres, due to the number and the purchasing power of the seniors, malls in Budapest are more affected. Their situation is not the same even in different areas of the capital, as the composition of the buyers in their gravity zone is different. It is up to their own features, and decision-making abilities whether they will be able to adjust to the new circumstances, who will "win" and who will "lose".

Keywords: silver generation, shopping centre, old-age marketing, gravity zone, Budapest
Journal of Economic Literature (JEL) codes: C55, R12
DOI: http://dx.doi.org/10.18096/TMP.2019.02.06

"May you live in interesting times."
Chinese curse

INTRODUCTION

The aim of our research is to reveal the shopping habits of the elderly generation and to draw the attention of retailers to their purchasing power. The decrease in Hungary's population and its aging process is similar to those of Europe's advanced welfare states (Kulcsár & Brown 2017). These trends can be observed in the other Visegrád countries, too, and are very much likely to remain unchanged in the long run. Based on Eurostat data, it can be concluded that in 1996 Hungary's society was the most aged among the four Visegrád countries, with 14.3% of the total population aged 65 or older. In the same year, 13.3% of the population in the Czech Republic, 11.2% in Poland and 10.9% in Slovakia belonged to the same category. By 2016, the population in each of the Visegrád countries had grown significantly older, which is a good indication of the dynamics of the process in these countries. In this 20-year period, the ratio of people aged 65 or older grew to 18.3% both in Hungary and in the Czech Republic, in Poland to 16% and in Slovakia to 14.4%. Therefore, attracting new silver generations with their purchasing potential can become a strategic goal for the entire region.

Granted, the purchasing power of a significant number of elderly consumers in Hungary is still smaller and – due to the increasing number of new pensioner generations – much more fragmented than in the more developed EU member states. In Western Europe, similarly to North America, pensioners with high income have significant purchasing power potential. In 2016, the relative value of per capita consumption in purchasing power parity reached only 63% of the European Union average in Hungary. In other Visegrád countries, these figures are clearly higher: 74% in Poland, 76% in Slovakia and 78% in the Czech Republic (Eurostat, 2016).

Elderly people have more stable health status, mainly due to the better income conditions we have already mentioned, and lead more active lives than retired people living in the Visegrád countries. Eurostat data show that in 2016, 65-year-old EU citizens can live an average of nearly a decade (9.4 years) healthily. At the same time, it is an important difference that in Western European countries these values are above the average, while in the Visegrád countries they are lower for both men and women, ranging from 3.8 to 8.6 years. In terms of Hungary, it can be stated that the number of older people

receiving higher pensions and being able to pursue a healthy lifestyle is significant, but – as it can be seen from the statistical figures – the majority still belong to the lower income layer of the society and the differences in income are also rather high within the social group, too (KSH 2016). The results of applied research (C & W/H & B 2002) draw attention to the fact that in Hungary 63% of people over the age of 55 and 39% of people older than 14 never did their shopping in a shopping centre, while the figure in the EU was 22%. The sample size of 522 we surveyed is not enough to consider territorial differences representative, but based on the sample we can state that a greater proportion of elderly residents of Central Hungary and Western Transdanubia go to shopping centres than of those living in the Northern Great Plain. We must note that the density of the retail outlets examined in the regions where they are less visited is lower than their density in the regions where these outlets are more frequently visited. The demographic characteristics of Hungary do not differ from the more developed countries, such as the EU member states. Decrease in the population has been continuous since 1980, with minor fluctuations. As for the future of shopping malls, market potential in connection with the population can be an important indicator. The proportion of certain age groups in the population determines the purchasing power potential in the long run, as the ratio of active earners to inactive earners has a significant impact on the distribution of the consumption funds.

The increase of the proportion of elderly people might encourage shopping centre operators to make them more attractive for the older generation, as well as attract young and middle-aged people and families with children more often. In families with small children, women (43%) buy more often than men (24%), and this is true for the whole population. At the same time, men visit shopping centres more times (13) a year than women do (10). Typically, 15–34-year-olds turn to these facilities on average 18 times a year, while people over 55 go there only 5 times annually (C & W/H & B 2002).

According to some of the expected demographic trends – in connection with the increase in the proportion of the elderly people within the population – the expected increase in the average age at birth and the low number of live births may cause shopping malls and shops to try to attract as many customers as possible from the elderly.

Today's shopping centres tend to focus on young customers and do not pay enough attention to product and service groups that represent a higher proportion of the spending of older people. Trends that are already natural in the spending structure of the elderly in EU countries have not yet appeared in Hungary. This social group consists of a number of segments with different paying capacities than in richer countries. However, we can already observe that older groups with higher pensions spend more on leisure activities and hobbies in Hungary (e.g. travel, theatre and concert tickets, pets, gardening, and souvenirs). These groups therefore deserve increasing attention in the future, and it would be worthwhile for the shopping centres to "attract" consumers.

MARKETING TO SENIORS – LITERATURE REVIEW

Generational marketing is a young subfield of marketing science. The business sector, unlike the former marketing segmentation methods of the 1950s, recognized the potential of analysing consumers by age group (Konczosné et al. 2010). Since the 1960s, several studies in the United States have been devoted to the consumption patterns of individual generations (Goldstein 1968, Moye 1998, Smith 2008). Since the 1970s, the Yankelovich Center for Social Science has not only occasionally, but regularly reported on the attitudes of each customer age group. Internationally, generation marketing, including marketing to the elderly, is often used in different analyses. In Hungary, the practice of applying marketing science was delayed, similarly to other post-socialist countries, and only after the change of regime in 1989 did it start to spread. This is one of the main reasons why the research and practice of marketing to seniors in Hungary is still in the early stages, and works related to this topic were published only after the turn of the millennium (Csizmadia & Győri 2014). Since then, despite the growing importance of the topic, the number of these studies has only moderately increased (Kolos 2010, Csizmadia et al. 2014, Szarka et al. 2014). We have not encountered any academic work that specifically targeting the potential purchasing power of the elderly in connection with Hungarian shopping centres, so we can consider our study as filling this niche.

There is no unified position in the international literature to define each generation; there are several methods used. For the sake of simplicity, we use the triple division (childhood, active age, elderly), generally used by official statistical databases and also the most common methodological practice in Hungarian research (Törőcsik et al. 2014). In our study, we considered people aged 60 and over in the group ‘elderly’. In the Western countries and in Hungary, the most frequently used classifications are based on Strauss & Howe (1991).

Most of the practical experience comes from the United States, though by the second half of the 20th century the use of generational marketing in other welfare states was also widespread. It should be noted that there is a large amount of available literature in other English speaking countries internationally. Among the countries with rich literature on the subject, the United Kingdom, Germany and Japan should be mentioned (Burt & Gabbott 1995, Stöver 2012, Kohlbacher & Chéron 2012). Although the number of studies is lagging behind those in the high-ranking target countries, China is also becoming increasingly popular, with its growing customer potential and good business opportunities (Atsmon et al. 2012).

The consumer habits of the Central and Eastern European countries are most similar to those of Western Europeans, but also differ in many aspects. The reason for this – besides lower income conditions – is the difference in basic experiences that determine the attitudes of certain demographic cohorts. The main differences were summarized by Törőcsik in her paper "Generational Marketing" (2009) where she grouped and characterized each generation in Hungary. She emphasized the basic experiences that shaped the different generations (such as war and deprivation), which Western Europeans born in the 1950s and 1960s have less experience of. In contrast, in the countries of the former Eastern bloc, the population was hit by several shocks that could be considered serious. In Hungary, after the difficulties of the 1950s, the inhabitants were able to experience an economic upturn and could have a better standard of living than the citizens of most socialist countries. It should be added that the dynamics of this economic recovery are not comparable to that of free market economies. In addition, after the change of regime, the period of learning under market economy conditions is also an important historical milestone that had a great impact on today's elderly customers.

The external conditions surrounding the national economy also have a major impact on consumer attitudes. These include, for example, the retirement age, the average amount of pensions or the individual's willingness to consume. After retirement elderly people are cut off from their working environment and, as their age increases, the number of widows/widowers in this age group will also increase (KSH Census 2011). Most elderly people in Hungary have more leisure time at this stage of their lives, but much lower income than pensioners in Western welfare states.

In the publication Statisztikai Tükör (Statistical Mirror) published on the International Day of Older Persons, the KSH (Hungarian Central Statistical Office) highlighted that retired households accounted for 31% of Hungarian households, and their personal per capita spending in 2012 exceeded the national average. Their consumption patterns differed greatly from the national average in several product groups. The biggest difference was in their spending on health (more than twice the national average), but they also spent significantly more on housing, equipment, food, and enjoyment in proportion to their income (KSH 2014).

It is also important to examine financial transfers between generations, as they also affect the purchasing habits of people over the age of 60. Compared to Western countries, in Hungary the generations are more financially dependent on each other. Often younger family members need to support older people, or it is the other way round, older people's income go to young people. Overall, however, it can be stated that the income situation of people over 60 (contrary to popular belief) is generally more stable than that of younger generations. Statistical data confirm that while the proportion of the elderly in the poorest income quintile is 11%, in the other income quintiles it is around 25% (KSH 2015).

Individual life situations and individual stages of life also shape the consumption attitudes of the different generations. In this respect, there are fewer differences in our country compared to Western European consumers, as basic human needs are biologically encoded, while demographic characteristics and important life stages are similar to Western societies, so we can rely more heavily on the findings of the international literature. Analysing their characteristics, people over the age of 60 form a more heterogeneous group than younger generations, so they cannot be considered a single, unified segment. It is difficult to influence them effectively with traditional marketing devices, and therefore, in many ways, it would be necessary to renew marketing tools and approaches (Kolos et al. 2014).

Public opinion considers aging to be a negative biological process; in most advertisements – even nowadays – old people appear in a negative role, which can further reduce the effectiveness of conventional devices. In 2012 (with a non-representative sample of more than 500 people) the staff of Széchenyi István University examined the media consumption habits of the elderly, with special regard to television advertisements. It was found that in Hungary, the use of the Internet by people over the age of 60 is even less widespread than in the more developed countries of the EU, but the use of the main communication channels is similar. For old people television and radio are more of a source of information than entertainment. Research results have also revealed that consumers are more critical of advertising as their income situation and education levels increase. In general, the majority of the respondents in Hungary have a negative attitude towards advertisements (Győri et al. 2015).

We must note that for the elderly, shopping is not just about satisfying material needs, but it is also a community experience for most of them (Kang & Ridgway 1996). Gender-oriented marketing research is also significant for the elderly, as in most societies the age structure is significantly shifted towards women among people over the age of 60. According to the data of the KSH in 2017, there were more women among elderly people in Hungary as well. The buying habits of women and men differ in many respects (Hu & Jasper 2004), which must also be taken into account by the management of shopping centres.

METHODOLOGY

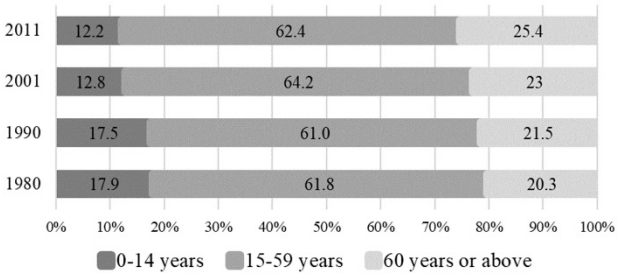
Data used for population assessment are derived from Hungarian Central Statistical Office (KSH), Central Office of Administrative and Electronic Public Services (KEKK) and the Hungarian Land Development Information System (TEIR). In our study we relied on secondary and primary research results. Participants were selected randomly, but in spite of that fact the sample cannot be considered representative. Our questionnaire survey was conducted in

2017 in the Árkád Budapest shopping centre and we asked 156 people about their shopping habits, who were classified into three groups based on their age. Among the respondents, 64 were in the lowest age group (under 30), 43 were middle-aged (between 30-60 years) and 49 were elderly (over 60). The three separate age groups examined in the survey belong to three markedly different stages of life. Approximately 61% of the young people interviewed (under 30 years of age) claimed to be students. Almost all of the middle group were employed, i.e. economically active visitors. Almost 86% of the elderly (over 60 years old) were pensioners. Overall, the majority of respondents were women (68%) and residents of Budapest (72%). Descriptive statistics were applied in this paper to describe basic features of the collected data. The results were processed by SPSS 19 software, and for the GIS analysis Mapinfo 9.0 was used.

DEMOGRAPHIC AND INCOME CHARACTERISTICS OF THE ELDERLY POPULATION IN BUDAPEST

We have already made general statements about the demographic situation and income prospects of the elderly population, but we find it necessary to analyse them in a separate chapter specifically in relation to Budapest. The secondary data used for demographic analyses were provided by population censuses covering the entire population, thus the assessment of population trends was carried out on this basis. However, in some cases, the 10 years between the two censuses have proved to be too long, so it was advisable to use the statistical data calculated for 2016 in evaluating regional inequalities.

According to the 2011 census data, the number of Budapest residents aged 60 and over was 438,361, which was not only the highest at the settlement level, but also at county level, while the population density of the capital also exceeded the national average. Therefore, not only many potential customers are present, but they are highly concentrated, which is an important aspect of site selection decisions in retail trade. The proportion of the population aged 60 and over in the total population – in line with international and Hungarian trends – has increased in the last 30 years in the capital (Figure 1). According to the census data of 1980, only one in five (20.3%) and every fourth (25.4%) inhabitant in Budapest belonged to this age group, which exceeded the national rate (23.5%) by a few percentage points.



Source: own edition based on HCSO census data

Figure 1. Distribution of population by age group in Budapest

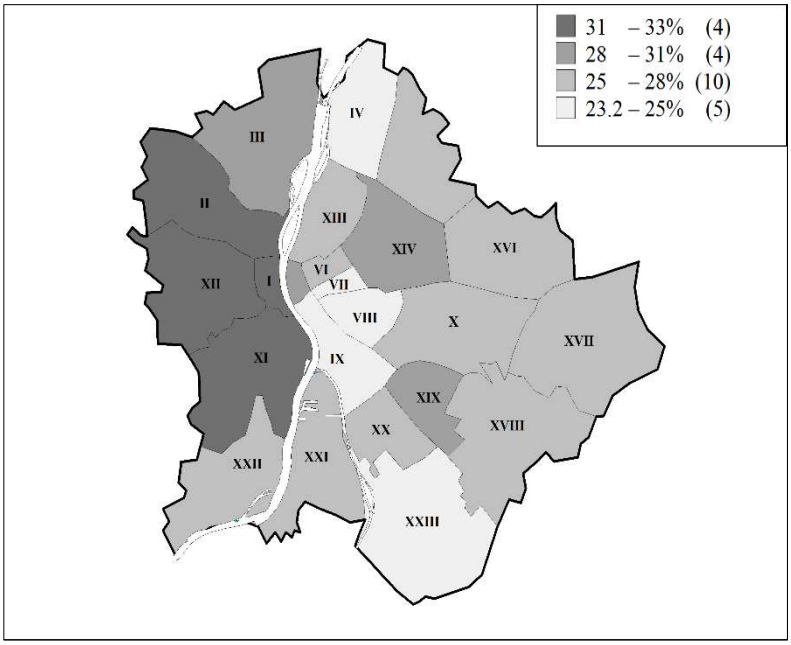
62% of the elderly population are women, 38% are male, and with age, these rates are constantly shifting towards women, so among people aged 70 or older only every third person is a man. The increasing trend continued, based on the calculated data for 2016, the proportion of people aged 60 and over in the capital reached 27.7%.

An important issue for the retail sector is the analysis of the structure of households. Based on this, it can be stated that the proportion of pensioners living alone in the capital is higher than the national average. Monostori (2017), using mathematical-statistical analysis methods, pointed out that the chances of becoming a one-person household are also higher in Budapest than in the countryside. According to the research, this can be led back to cultural factors too, not only to the fact that at birth men have a lower average life expectancy than women. In the capital spatial differences can also be pointed out. The distribution of the elderly population is not even; there are considerable differences between the individual parts of the city. In 2016 most of the 60-year-olds and older lived in Buda, in District XI (41,674 people) and District III (36,275 people), and in District XIV (34,828 people) on the Pest side of the Danube.

Due to the different sizes of the districts, it is advisable to examine the population density of people aged 60 and over in each district. The capital city average was 895 people/ km^2 in 2016, with the highest population density in the city centre and its surroundings and the lowest in the periphery. The highest population density (significantly above the average) can be found in District VII (6,138 people/km^2), District VI (3,918 people/km^2) and District V (2.988 people/km^2). In contrast, the density in District XXIII (132 people/km^2), in District XVII (421 people/km^2) and in District XXII (431 people/km^2) did not reach 500 people/km^2, which is roughly equal to the average population density of the county seats. Examining the proportion of 60-year-olds and older people in each district showed inequality (Figure 2). Districts I, II, XI and XII on the Buda side are the most aged districts of the capital. Extreme proportions can also be observed in some districts; in some cases, the proportion of people aged 60

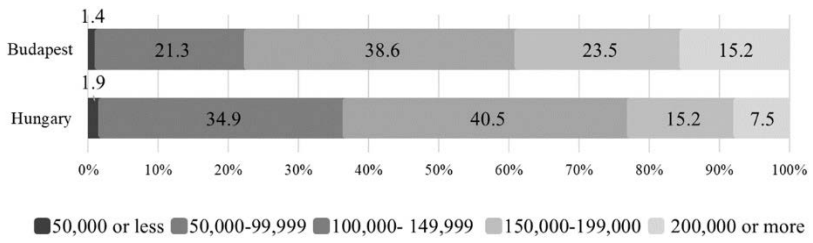
and older is over 40% of the total population. On the whole, the Pest side has a younger age structure, and the proportion of elderly people is the highest in Districts V, XIV and XIX.

The previously highlighted demographic inequalities become valuable information when we look at the distribution of income in the capital. The primary source of income for older people in Hungary is the old-age pension, which is supported by several statistical data sources. The gender breakdown of 60-year-olds and older is important because of their different purchasing habits, but their income situation is also different. In the case of the population aged 60 and over, census data show that men in Budapest are more educated than women, but income inequalities can obviously attributed to another factors too. Here we mean for example the one-person breadwinning family model (which results in shorter service hours for women) or the level of wages, which is not only due to education, as even today, men are paid more than women in the same job. As a result, men have more disposable income and higher pensions for their older age. This is of less importance when elderly people live in two- or more person households, as the purchasing decision is usually made jointly or rather by women (Pólya 2008). At the same time, based on the 2011 census data, 34% of the "silver generation" in Budapest lived in a one-person household, which is high enough to be taken into consideration in the analyses.



Note: The number in brackets is the number of districts which fall within the category.
Source: own edition based on COAEPS data

Figure 2. Ratio of population aged 60 years or over within the total population of Budapest, 2016



Source: own edition based on KSH data

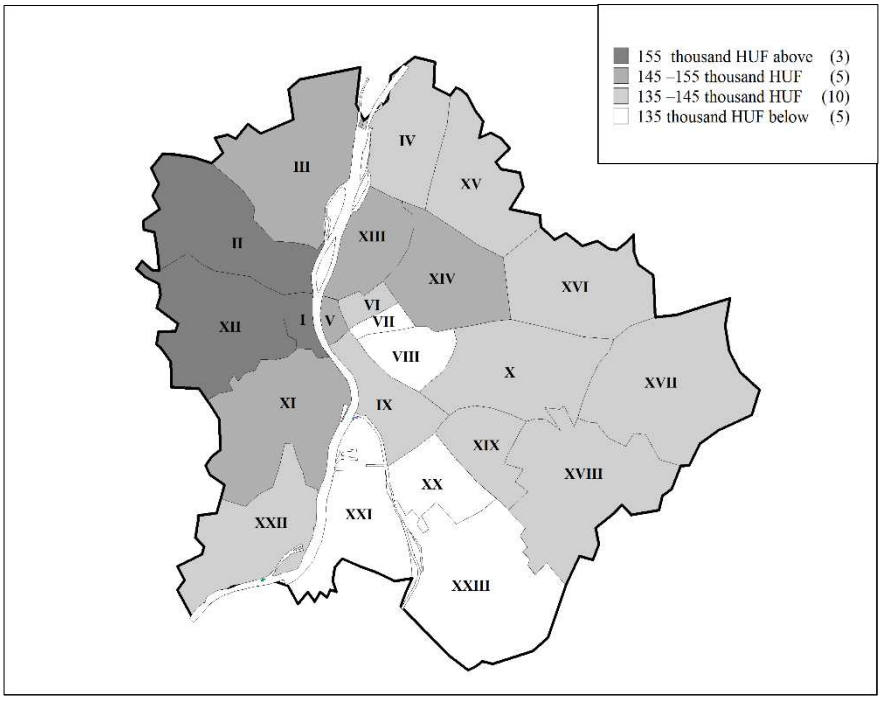
Figure 3. The distribution of old-age pensions in Budapest compared to the national average (in HUF), 2016

Old-age pensioners account for the largest group among elderly people, which is why we deal with the spatial analysis of the sum of old-age pensions in our study. The majority of old-age pensioners are over 65 years of age, and their lifestyle is very different from that of people aged 60-65. For these reasons, we focus on the group of elderly over 65 years of age in the next chapter of our study. Based on the annual KSH publication Pension, Benefits and Other Provisions (KSH, 2016), the average sum of the old-age pension in Budapest was HUF 143,805 per month in 2016, which is higher than the national average (HUF 121,041). In addition, the distribution of pensions is more favourable than the national average (Figure 3).

38.6% of the pensioners in Budapest had an income between HUF 100,000 and 149,999 per month in 2016, which is similar to the national average (40.5%). The proportion of those with a pension of less than HUF 100,000, i.e. lower than the average, is 22.7% in the capital and 36.8% in the country. The proportion of those with a pension of more than 200 thousand HUF was 15.2% in Budapest, 7.5% nationally.

The spatial movement of older people is more limited because of their age characteristics than those in their active age (Liu et al. 2017). As a result, the good accessibility of shopping centres and the composition of customers in their immediate catchment area gain more importance when analysing this age group in the population. Researchers in regional sciences have a well-defined methodological toolkit for the analysis of gravity zones and traffic flow in the retail sector (Kincses et al. 2014, Dusek 2016, Kraft 2016).

Before evaluating the geographical location of shopping centres, we discovered the spatial location of elderly people with high purchasing power in the capital (Figure 4). There are significant differences between Buda and Pest this time as well, and the amount of the monthly average of old-age pensions reflects the social perception of districts within the city. In 2016, the highest pensions were received in the prestigious Buda districts (I, II, XII), whose amount exceeded 155,000 forints. Another two Buda districts (III, XI) belonged to the income category of 145,000–155,000 forints, and only in District XXII was the amount almost equal to the Budapest average. The prestige of Pest on the other side of the Danube is traditionally lower, and the composition of its population is less favourable. This is clearly visible in income from pensions: no district from Pest fell in the category of over HUF 155,000, while some internal districts can be found in the band between HUF 145,000–155,000 (V, XIII, XIV). Most of the Pest districts (9) fall in the income category between HUF 135,000–145,000. The average amount of pensions in the remaining 4 Pest districts (VII, VIII, XX, XXIII) and Csepel Island (District XXI) is the lowest. In these districts social groups in segregated situations are highly represented and they remain there in their old age as well. In spite of this, the average sum of pensions in all districts is higher than the national average of HUF 130,000–135,000.



Note: The number in brackets is the number of districts which fall within the category.

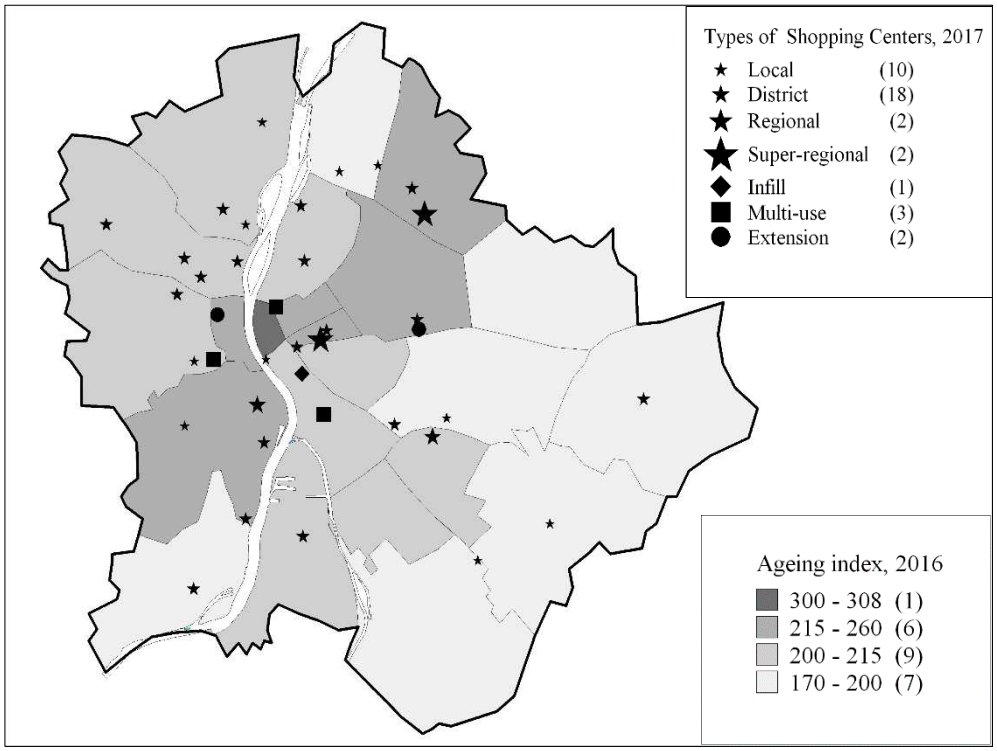
Source: own edition based on KSH data

Figure 4. The average amount of old-age pensions by district, 2016

The most important result of the analysis of the demographic and income situation is that – on the basis of statistical data – we have revealed the spatial inequalities among pensioners in Budapest. We found that the number of people aged 60 or over and their proportion in the districts of Budapest was significantly dispersed, the spatial pattern of their distribution was concentrated, and the individual territories can be clearly bordered geographically. For business purposes it is important that there is a significant correlation between income inequalities and spatial distribution. While the average amount of pensions was the highest in districts with a large number of elderly people, in the districts with a younger age structure, it did not reach the average in the capital.

THE AGE STRUCTURE OF POTENTIAL BUYERS IN THE GRAVITY ZONES OF BUDAPEST SHOPPING CENTRES

In the rest of the study, we examined the shopping centres in the capital according to what extent they are exposed to the aging processes in their gravity zone. In order to analyse the question, we examined the geographical location of each shopping centre, and also determined the types of shopping centres. The gravity zone of each centre differed somewhat (Figure 5).



Note: Ageing index: the ratio of the number of elderly persons (aged 65 and over) to the number of young persons (from 0 to 14). The data in brackets is the number of shopping centres and districts.
Source: own edition based on data from the Hungarian Council of Shopping Centres and COAEPS

Figure 5. Types of shopping centres in Budapest and the ratio of ageing index by district

The classification of the Budapest shopping centres is based on the Dawson classification, i.e. the size and functions of shopping malls (Sikos T. 2000). The main reason for choosing this method, besides its broad international acceptance, is its relative simplicity, which makes it possible to interpret each type of shopping centre in countries with a shopping culture different from the English and American ones (Sikos T. 2003).

In 2017, based on data provided by the Council of Hungarian Shopping Centres, 38 shopping malls were operating in Budapest. Of these, 28 of them belonged to the local or regional type. The location of the shopping centres showed a high concentration on the basis of a spatial pattern, even though in all districts except for Districts XX and XVI at least one shopping mall can be found. Most of the shopping centres are located in the inner parts of the city, and they only occur sporadically in the outer districts. There are significant differences between shopping centres based on the fact that only local or district type malls with a local gravity zone operate in the outer parts of the city. In the background of spatial distribution of shopping centres there are several site selection decisions which take many aspects into account.

Shopping centres can be further grouped and characterized by the age structure of potential buyers in their gravity zone. For the analysis we applied the ageing index, which expresses the ratio of the number of elderly persons (aged 65 and over) to the number of young persons (from 0 to 14), and these indices were further grouped into four categories.

Local shopping centres are suitable for serving 25,000–40,000 inhabitants, their average size is between 3,000–10,000 m^2, and mainly basic consumer goods and services can be obtained. District malls are similar to locals but larger in size and have a wider range of stores. Their average floor area is between 10,000 and 30,000 m^2 and they are designed to supply 40,000–150,000 customers (Sikos T. & Hoffmann 2004). These centres are only for serving a larger part of the city or district, so the age structure of their immediate environment is an important aspect in their case.

Local (10) and district (18) type shopping centres are the most common types in the capital. In districts with a younger age structure (group 4, ageing index 170–200%) only these two categories of shopping centres operate. These districts have the lowest business density and the narrowest range of available services and products. In the gravity zone of shopping malls in the south-east and eastern districts of Pest, the aging index does not exceed 200%. District IV in North Pest and District XXII in South Buda have similar characteristics.

Among districts falling into group 3 (200–215%), which belong to the less ageing parts of the city, some Buda districts (II, III, XII) with a higher ratio of elderly people appear, where mostly local and district type shopping centres with smaller gravity zones are located. In these districts, the number of elderly residents reaches the threshold that is sufficient in itself to operate a shopping centre with a smaller gravity zone. That is why their business purposes should include attracting the "silver generation". Typically, shopping centres with small floor space also include centres which were built to infill vacant sites. They are usually located in the city centres, in the traditional business districts, such as Dunaház in District IX.

Only a few of the shopping centres with a regional gravity zone can be found in the capital, mostly in the inner districts, typically in the busiest transport hubs of the city. They are well-positioned for transport, and their buyers are made up of inhabitants living in the outskirts in districts with a younger age structure, students commuting from the agglomeration and people belonging to the economically active populations. Thus, they are less exposed to the ageing processes than retail centres operating in the inner areas. Their common feature is that the range of goods and services offered by shopping centres with a regional gravity zone can be considered complete, and they have a floor area of 30,000–70,000 m^2 (Sikos T. & Hoffmann 2004). KÖKI Terminal in District XIX falls into the regional type in district VIII Aréna Mall and Árkád to the superregional category. All three shopping centres are located at an important traffic hub, which determines the age structure of their customers.

Aréna Mall relies on the transit traffic of the Keleti Railway Station, and KÖKI Terminal on travellers of the M3 metro line and the bus terminal, with a high ratio of students and employees commuting from the districts in the outskirts. Árkád is located in an important traffic hub (metro, suburban train, bus terminal).

Árkád in District X and Mammut in District II belong to extension shopping centres, but their regional role is inevitable. These shopping centres get their potential buyers from the transit traffic of the M2 metro line. Mammut was built in the living area with the largest and most well-off elderly population in the capital. Its gravity zone is ageing, not only in any absolute sense, but its ageing index is also high.

Multi-use shopping centres in the capital are WestEnd City Centre, MOM Park and Lurdy Ház. The first two are located in the wider city centre or very close to it, and the ratio of elderly people in its gravity zone is remarkable. Lurdy Ház, on the other hand, can be found in a peripheral area that lacks purchasing power. Its direct environment is characterized by a youthful age structure, and the income situation of the elderly living there is very low, even in Budapest.

ONLINE SHOPPING AMONG THE ELDERLY VISITORS OF THE SHOPPING CENTRES

Nowadays internet sales channels can no longer be ignored, as they are having a significant impact on shopping centres (BSIC 2017). In the shopping centres,

internet companies and parcel delivery points have been established, the amount of time visitors spend in the shopping centres has decreased, and for some product groups the magnitude of the income spent in physical stores is also decreasing (Yan 2018). At the same time, about 90% of sales still takes place offline worldwide (eMarketer 2018). There are big differences between the older generations and the younger people in the way and prevalence of using the Internet (NMHH 2017), which is obviously can be depicted in their online shopping habits.

The prevalence of internet shopping (Figure 6) and the amount of average occasional spending were among the questions in the above-mentioned survey of visitors of the Árkád Budapest shopping centre.

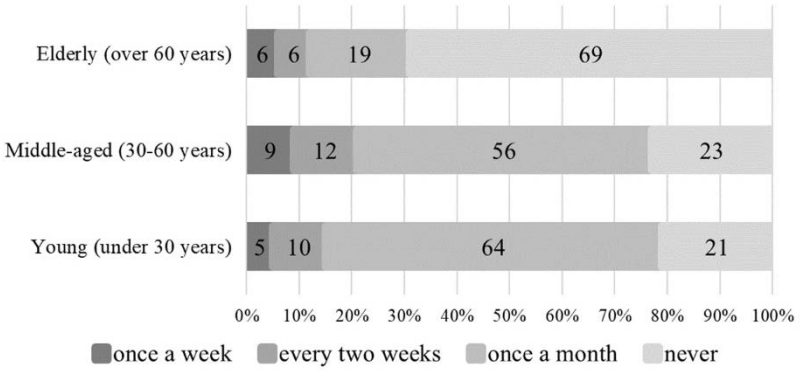
The results of the questionnaire show that most people in each age group buy monthly or less frequently. At the same time, the majority of elderly people (69%) do not buy anything online, which is a remarkable difference compared to the other two age groups. However, it is important to add that if we examine only those respondents who use the Internet, then in terms of the frequency of shopping elderly people do not lag behind at all. Due to the low number of respondents in the sample it is not possible to draw a more precise conclusion. There is no significant difference between middle-aged and young visitors; both age groups buy on the Internet at a similar rate, although the middle-aged purchase online slightly more frequently than young people.

When looking at the purchase values, we found that young people typically spend less than HUF 10,000 – almost two-thirds of them have chosen this option among the answers. In the case of the elderly, the extreme values represent a high proportion of the total, as average purchases below HUF 5,000 forints and purchases above HUF 20,000 are also common among the respondents. In contrast to this, the distribution of average spending by category for the middle-aged is more balanced.

Results about the frequency of using pick-up points in the mall showed that they were used by only one in five respondents, monthly or less frequently at the time of the interview. Not surprisingly, young people (20%) and middle-aged people (21%) are more likely to use these points than older people (14%). At the same time, we must note that if we examine only people who shop online, we see that approximately the same rate of young (25%) and middle-aged (27%) people said that they had used this service, but this ratio among elderly people is almost 50 percent (47%).

CONCLUSION

The study shows that the situation of shopping centres in Budapest greatly differ. While the ratio of the age group 14–29 in their gravity zone by districts is 12–18%, the ratio of people aged 60 or over is between 22–33%. Generally they attract a potential buyer group which reflects the age structure of the districts in the capital. In spite of these facts – unlike in rich welfare states – shopping centres in Budapest are important facilities for young people to spend their leisure time (not only because of the cinemas). Among local and district shopping centres, retail outlets operating in the Buda districts have more opportunities to open up for the "silver generation" than shopping malls located in the outer districts. The customer base of shopping centres with a larger gravity zone mainly consists of commuters and people on the move, thus the proportion of older people is smaller than in case of the previous types, since the elderly are less mobile than the younger generations. Due to their life stages and health status, they are less represented among commuters than other age groups. Despite this fact, the proportion of elderly customers in regional type shopping centres is increasing year-on-year too. For example, the proportion of customers aged 60 and over in the shopping centres Aréna Mall and Árkád Budapest was 4% and 7% in 2008, while in 2017 it was 14% and 29% (Sikos T. & Kovács 2018). The upward trend is apparent even if we take the different daily traffic periods into consideration and for the sake of a better comparability we adjust the results with approximation.



Source: own research 2017

Figure 6. Frequency of online shopping by age group

On the basis of the statistical data used, it can be concluded that the "silver generation" provides significant potential purchasing power for the retail sector, so shopping centres and online retailers should take them into account. It is advisable to further investigate which products and services may be of interest to the "silver generation", because satisfying these needs can generate additional turnover for shopping malls and e-tailers.

Acknowledgement

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REFERENCES

ATSMON, Y.; MAGNI, M.; LI, L. & LIAO, W. (2012): Meet the 2020 Chinese Consumer McKinsey Consumer & Shopper Insights, Shanghai, China.

BSIC (2017): The Effects of E-Commerce on Shopping Malls and on the Consumer Retail Sector – a US Case Study. Retrieved: December 2018: http://www.bsic.it/wp-content/uploads/2017/10/ecommerce-sector-v.Final_.pdf

BURT, S. & GABBOTT, M. (1995): The elderly consumer and non-food purchase behaviour. European Journal of Marketing 29 (2): 43–57. https://doi.org/10.1108/03090569510080941

C&W/H&B (2002): Shopping Centre Development. London: Cushman & Wakefield/Healey & Baker (EMEA)..

CSIZMADIA, S. & GYŐRI, S. R. (2014): Idősmarketing - kinek szól? [Old Age Marketing – Who is it for?] Valóság: Társadalomtudományi Közlöny 57 (3): 54–73.

CSIZMADIA, S.; GYŐRI, S. R. & KOVÁCS, N. (2014): Idősmarketing: a hazai idősek fogyasztási, vásárlási szokásai [Old Age Marketing: consumption and buying habits of the elderly in Hungary]. Tér-Gazdaság-Ember 2 (1): 123–151.

DUSEK, T. (2016): A gravitációs modell kalibrálásának alapkérdései (Basic questions of calibration of gravity model). Területi Statisztika 56 (4): 374–389. https://doi.org/10.15196/TS560402

eMARKETER (2018):Retail Ecommerce Sales Worldwide, 2016-2021. Retrieved: December 2018: https://www.emarketer.com/Chart/Retail-Ecommerce-Sales-Worldwide-2016-2021-trillions-change-of-total-retail-sales/215138

EUROSTAT (2018): Official website. Retrieved: October 2018: https://ec.europa.eu/eurostat

GOLDSTEIN, S. (1968): The Aged Segment of the Market, 1950 and 1960 Journal of Marketing 32 (2): 62–68.

GYŐRI, S. R.; CSIZMADIA, S. & KOVÁCS, N. (2015): Az idős fogyasztók és a tévéreklámok Magyarországon [Elderly consumers and TV commercials in Hungary] Marketing és menedzsment 49 (3): 50–67.

HU, H. & JASPER, C. (2004): Men and women: a comparison of shopping mall behaviour Journal of Shopping Centre Research 11: 113–131.

KANG, Y. S. & RIDGWAY, N. M. (1996): The importance of consumer market interactions as a form of social support for elderly consumers. Journal of Public Policy and Marketing 15 (1): 108–117.

KINCSES, Á.; MICHALKÓ, G. & TÓTH, G. (2014): A Magyarország átutazó forgalmában érintett települések lehatárolása [Delimitation of settlements with transit traffic in Hungary] Területi Statisztika 54 (3): 237–252.

KOHLBACHER, F. & CHÉRON, E. (2012): Understanding "silver" consumers through cognitive age, health condition, financial status, and personal values: Empirical evidence from the world's most mature market Japan Journal of Consumer Behaviour 11 (3): 179–188. https://doi.org/10.1002/cb.382

KOLOS, K. (2010): Értékek, szerepek és életmód ötvenen túl [Values, roles and life style over the age of 50] Corvinus Marketing Tanulmányok 1: 29–38.

KOLOS, K.; KENESEI, Z. & SOMOSI, Á. (2014): Idősebb fogyasztók technológiai kompetenciáinak meghatározó tényezői [Defining factors in technological competencies of older consumers] In: HETESI, E.–RÉVÉSZ, B. (eds.): Marketing megújulás: Marketing Oktatók Klubja 20. Konferenciája pp. 1–12, SZTE GTK, Szeged.

KONCZOSNÉ, SZ. M.; KOVÁCSNÉ, T. Á.; ZAKARIÁS, G.; BUDAHÁZI, J. & DUSEK, T. (2010): A generációs marketing jelentősége egy felsőoktatási intézmény példáján [The importance of generation marketing – an example of a higher educational institute] In: PAPP- VÁRY, Á.–CSÉPE, A. (eds.): Új marketing világrend MOK 2010: a Magyar Marketing Szövetség Marketing Oktatók Klubja 16. országos konferenciája pp. 800– 811., Budapesti Kommunikációs és Üzleti Főiskola, Budapest

KRAFT, S. (2016): Measuring and modelling the spatial accessibility of public transport stops in GIS Hungarian Geographical Bulletin 65 (1): 57–69. https://doi.org/ 10.15201/hungeobull.65.1.5

KSH [Hungarian Central Statistical Office] (2011): 2011-es népszámlálás hivatalos oldala [KSH census 2011]. Retrieved: March 2018: www.nepszamlalas2011.hu

KSH (2014): Szépkorúak és vének – október elseje, az idősek világnapja [Elderly and old – October 1, the day of the Elderly] Statisztikai Tükör 103: 1–2.

KSH (2015): Vén Európa–október elseje, az idősek világnapja [Old Europe – October 1, the day of the Elderly] Statisztikai Tükör 69: 1–3.

KSH (2016): Nyugdíjak és egyéb ellátások Budapest. [Pensions, benefits and other provisions]

KSH (2018): Official website. Retrieved: March 2018: www.ksh.hu

KULCSÁR, L. J. & BROWN, D. R. (2017): Population Ageing in Eastern Europe: Toward a Coupled Micro-Macro Framework Regional Statistics 7 (1): 115–134.
https://doi.org/10.15196/RS07107

LIU, W.; LU, H.; SUN, Z. & LIU, J. (2017): Elderly's Travel Patterns and Trends: The Empirical Analysis of Beijing. Sustainability 9 (6): 1–11.
https://doi.org/10.3390/su9060981

MONOSTORI, J. (2017): Stabilitás és változás az idősek háztartásszerkezetében [Stability and change in the household structure of the elderly] Demográfia 60 (1):105–137. http://dx.doi.org/10.21543/Dem.60.1.3

MOYE, L. N. (1998): Relationship between age, store attributes, shopping orientations, and approach-avoidance behavior of elderly apparel consumers. Master Thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

NMHH [National Media and Infocommunications Authority] (2017): Electronic Communication_Services Usage by Households and Individuals 2017. Retrieved: December2018:http://english.nmhh.hu/article/194914/Electronic_Communication_Services_Usage_by_Households_and_Individuals_2017

PÓLYA, É. (2008): Családi vásárlási döntési folyamatok, a döntést befolyásoló tényezők [Family buying decision making processes, and their influencing factors] Szolnoki Tudományos Közlemények 12 (Special Issue): 1–11.

SIKOS T., T. (2000): Marketingföldrajz [Marketing Geography] VÁTI, Budapest.

SIKOS T., T. (2003): Bevásárlóközpontok mint kereskedelmi komplexumok a gazdasági térben. (Fogalmi meghatározások és tipizálás) [Shopping centers as retail complexes in the economic space] Földrajzi Értesítő 52 (1-2): 85–105.

SIKOS T., T. & HOFFMANN, I.-NÉ (2004): Budapesti bevásárlóközpontok tipológiája [Typology of shopping centers in Budapest] Földrajzi Értesítő 53 (1–2): 111–127.

SIKOS T., T. & KOVÁCS, CS. J. (2018): Az Aréna Pláza és az Árkád Budapest versenye az átalakuló társadalmi-gazdasági térben [The competition of Aréna Pláza and Árkád Budapest in the changing socio-economic space] Földrajzi Közlemények 142 (3): 201-218.

SMITH, T. J. (2008): Senior Citizens and E-commerce Websites: The Role of Perceived Usefulness, Perceived Ease of Use, and Web Site Usability. Informing Science: The International Journal of an Emerging Transdiscipline 11: 59–83.

STÖVER, B. (2012): The power of elderly consumers – How demographic change affects the economy through private household demand in Germany In: RADVANSKÝ, M.– LICHNER, I. (eds.): Impacts of Ageing on Public Finances and Labour Markets in EU Regions - Theoretical Models and Empirical Analyses. Smolenice, Slovakia. pp. 141–149.

STRAUSS, W. & HOWE, N. (1991): Generations: the history of America's future, 1584 to 2069. New York: Harper Perennial

SZARKA, K.; LEHOTA, J. & LANGER, K. (2014): A magyar 50+ generáció fenntartható fogyasztási szokásai [Sustainable consumption habits of the Hungarian 50+ generation]. Élelmiszer, Táplálkozás és Marketing 10 (2): 3–9.

TEIR [HLDIS] (2018): Official website. Retrieved: March 2018: www.teir.hu

TÖRŐCSIK, M. (2009): Generációs marketing [Generation marketing] In: BUGÁR, GY.–FARKAS, F. (eds.): Elkötelezettség és sokoldalúság Tanulmánykötet Barakonyi Károly tiszteletére, Pécs: PTE KTK. pp. 221– 228

TÖRŐCSIK, M.; KEHL, D. & SZŰCS, K. (2014): Generációs gondolkodás – A Z és az Y generáció életstílus csoportjai [Generational thinking – Lifestyle groups of generation Z and Y]. Marketing és Menedzsment 48 (2): 3–15.

YAN, X. (2018): Impact of Online Shopping on Shopping Malls. Masters thesis, Buffalo State College, State University of New York, USA.

Applied Social Scientific Methods for the Measurement of Local Innovation Potential

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SUMMARY

The study introduces a methodological tool for measuring local social innovation potential and its application in five settlements in the Abaúj region of northeastern Hungary. When working on the local innovation potential (LIP) index we present in this study, we drew upon existing theories and models of social innovation. The complexity of LIP index comes from the fact that it builds upon both qualitative and quantitative data and research methods. Therefore it is simultaneously based on social scientific methods that are traditionally considered "soft" and "hard". The LIP index is can take into account local specificities and characteristics into account and is thus suitable for presenting a fine-tuned description of the current situation and characteristics of a settlement, together with its future potential and directions for development.

Keywords: social innovation, social innovation potential, spatial segregation, regional development, applied social research
Journal of Economic Literature (JEL) codes: D63, O35
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INTRODUCTION

In the North Hungarian region both social and regional disadvantages are more concentrated than the Hungarian average. These disadvantages and their regional and social inequalities offer a real challenge for the researchers of social sciences. The results of scientific research on regional and social processes show that disadvantages can only be lessened by innovation, especially by encouraging and spreading social innovation. Compared to technological innovations, social innovations concentrate on the rejuvenation of human potential. They are not created in scientific labs but in everyday workshops. Theories are drawn for practical experiences and the emergence of social innovation typically arises out of widespread social consensus. In the 21st century the ever-renewing social sciences, and especially sociology, are facing a challenge: social innovation cannot be developed without them.

The study gives a short summary of the notion of social innovation. It is followed by the introduction of our methodological tool for measuring local social innovation potential and its application in five settlements in the Abaúj region. When working on the local innovation potential (LIP) index we present in this study, we drew upon existing theories and models of social innovation. The complexity of the LIP index comes from the fact that it builds upon both qualitative and quantitative data and research methods. Therefore it is simultaneously based on social scientific methods that are traditionally considered "soft" and "hard".

As a starting point we focused on the fact that settlements and communities can be multifaceted, meaning that the LIP index should also be. The LIP index is fitting to take local specificities, local characteristics into account and by doing so it is able to take for presenting a fine-tuned description of the current situation and characteristics of a settlement, together with its future potential and directions in development.

THE SOCIOLOGICAL MODEL OF SOCIAL INNOVATION

In the history of sociology – besides other approaches – the notion of surveying, describing and reforming and influencing social processes has always been present. The founding father of sociology, Auguste Comte, concluded that the duty of social sciences is to provide accurate data,

to facilitate change and to act as a form of mediator between social activism and science (Comte 1979). The evolutionist Herbert Spencer point of view was that sociology can even change evolution (as he described social development in the terms of biological evolution) for the better (Spencer 1898).

The first social scientific descriptions of the notion of innovation come from Emile Durkheim and Max Weber. Durkheim argued that in order to maintain a healthy society, social changes should come slowly. Rapid changes result in anomie. In the 1900s Durkheim focused on theories of innovation, but – as Némedi points out – he failed to give a systematic description of it on the individual and social level (Némedi 2010). Weber worked on the relationship between the rise of capitalism and the Protestant ethic. Therefore, his works can be considered as forerunners of thinking of economic innovations (Weber 1982).

The history of sociology shows that the discipline has always sought to survey, describe and change or influence social processes, or even required its followers to do so. Practical application and applied sociology have always been present. We believe that if sociology wishes to preserve its place and role among the sciences it must work toward constant renewal and innovations. This demand reflects the social-economic challenge of regular innovations. The classic notion of innovation in the field of economics has been identified by Schumpeter (1934). According to his view there are five types of innovation: (1) introduction of a new product or new product quality; (2) introduction of a new method of production; (3) opening up of a new market; (4) conquest of a new source of raw materials or other inputs ; and (5) the creation and application of a new organizational structure in an industrial sector.

Besides economic innovations social innovations have come into focus – especially in the last decade, when balancing regional-social disadvantages became an important social and economic challenge. There are several social scientific definitions of innovation (Szendi 2018). They agree on emphasizing the novelty factor and also on the correlation between innovation, well-being and the quality of life (Howaldt et al. 2014; G. Fekete 2001; Kocziszky & Szendi 2018; Nemes & Varga 2015). The definitions also point out the need for communal solutions, for participation and for the joint effort of different sectors (state, nonprofit and religious) in finding the novelty factor of innovation.

Social innovation tends to work toward changing the status quo. In order to do so an innovative and problem-solving turn of mind is a must. There are different ways and forms for an innovative initiative or product to come to life, but the process cannot skip any of the following steps: mapping problems and their causes, critical examination of already existing solutions and points of view, finding the domain of intervention, initiating innovation and, by the end, evaluation. Social innovation may have many forms: strategies, concepts, ideas, know-how, organizational changes, co-operation or projects.

The model in Figure 1 illustrates the complexity of innovations. In terms of its modes of appearance, innovation can be a new technology, product or service or, in institutional form, a new brand. In terms of financing, innovation can be financed by the community, by volunteer work or by individual and civil sources. It has four scopes and its impacts and aims are complex.

The steps of generating social innovations (figure 2) follow the steps of social science research.

There are several models to measure the innovation potential of settlements. These models regard the essence of innovation in different components (or dimensions) and the applied indicators vary significantly as well. One of the most complex models was developed in 2016 by the Economist Intelligence Unit (2016). They compared different countries based on their innovation capacity. Items used to measure the capacity of innovation included both qualitative and quantitative data on the political and institutional environment, financing, entrepreneurships and society. Castro Spila et al. (2016) suggest measuring social innovation by determining the regional vulnerability rate in social, economic, institutional and environmental terms. This model has not been tested in research yet. Others (i.e. Pénzes 2014; Szendi 2018) use only statistical data available through national surveys to measure social and economic innovations (like number of entrepreneurships/100 persons, net income/person; the rate of the population with higher education degrees, etc.).

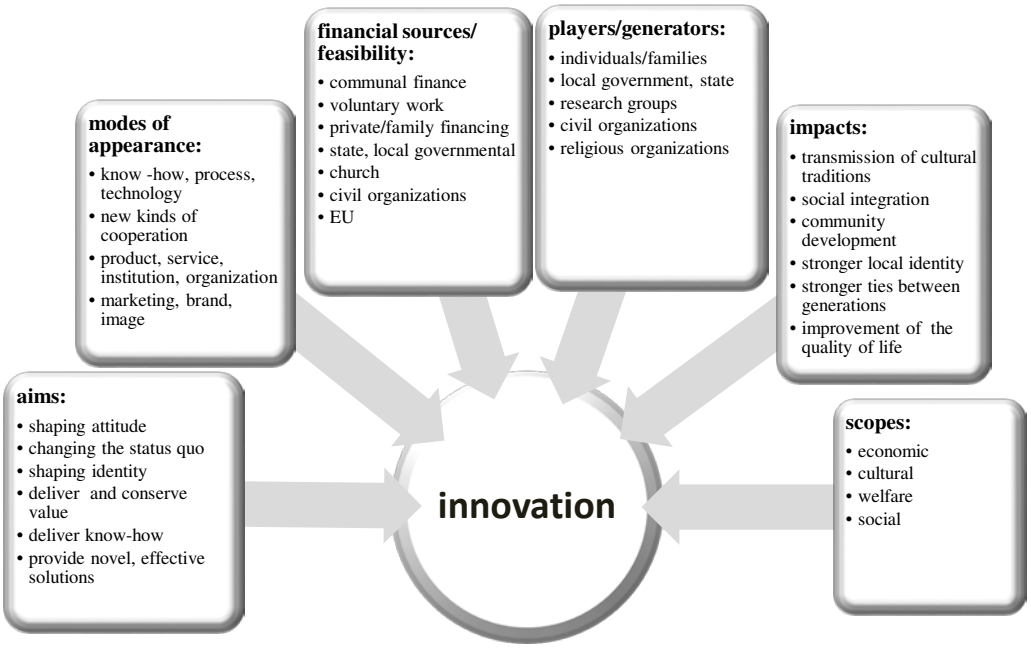

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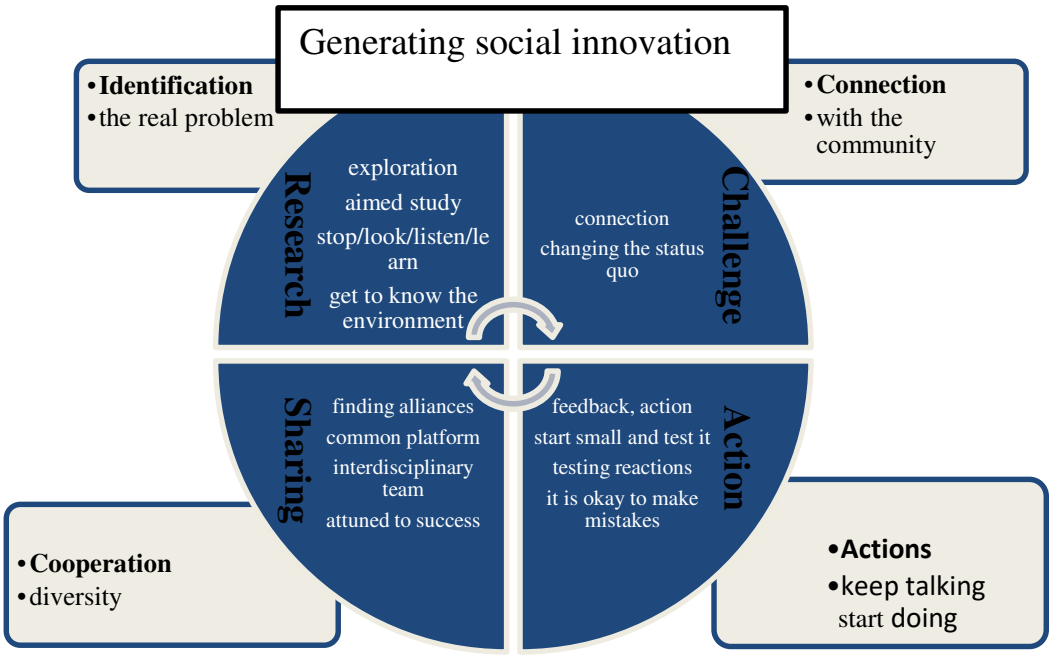
Figure 1. The complex model of innovation



Source: The authors

Figure 2. Steps of generating social innovation

LOCAL INNOVATION POTENTIAL: TERRITORIAL DEVELOPMENT USING SOCIOLOGICAL TOOLS

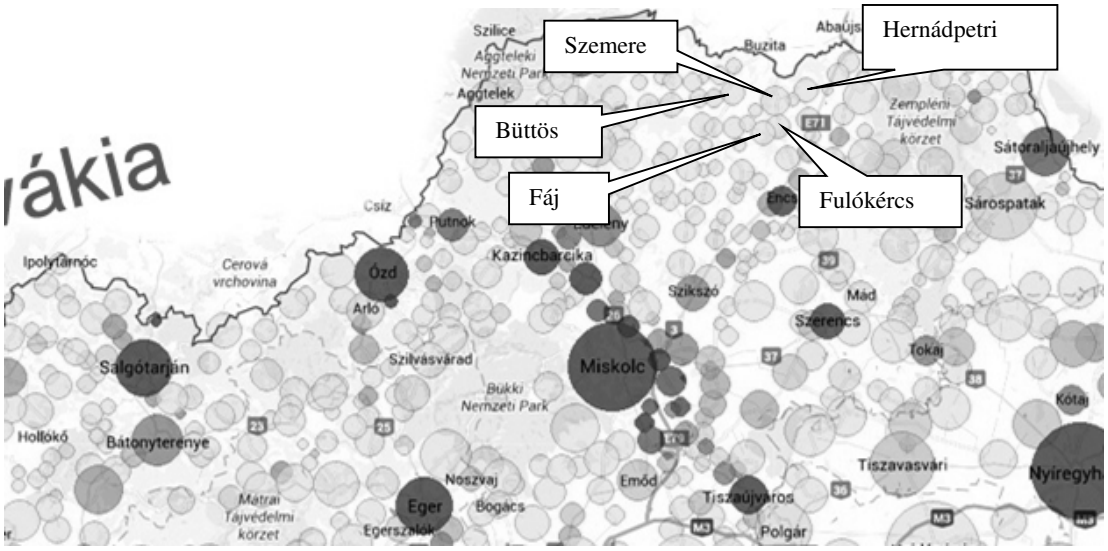
This part of the article introduces the principles and guidelines along which the LIP model has been developed (in regard to previously existing models). We also examine the applicability of the model for five settlements in the Abaúj area of North Hungary (Büttös, Fáj, Fulókércs, Szemere and Hernádpetri).[1]

The Settlements

Büttös[2] is a cul-de-sac village situated in the valley of the Rakaca Stream, in the district of Encs. Its population is 189 (in 2018). The settlement is aging (aging index in 2016: 390.9). It is under the jurisdiction of the regional clerk's office in Krasznokvajda. Medical assistance is offered by the family doctor's office in Krasznokvajda. The settlement does not have a kindergarten or school; Children attend kindergarten and school in Kransznokvajda, taking the bus provided by the village. The village is surrounded by apple orchards, although the apples cannot be processed in the village; after harvest the fruit travels hundreds of kilometers to be processed. No grocery stores, cafes or bars can be found here. In the last five years 8-10 houses were purchased by Slovak citizens. The settlement does not have a church, only a belltower that is part of the former school building. Currently 32 people work as public workers in Büttös. Farm products produced by in the public work programme are sold in the village, providing some income to the local government.

Fáj is situated in the district of Encs, 50 km from Miskolc. It has all the characteristics that Ladányi & Szelényi (2004) (and others) list as typical of aging, fringe communities with a high proportion of Roma inhabitants, which is also true in regard to another settlement in the study, Hernádpetri. In terms of socio-demographical data Fulókércs is similar as well, but this particular settlement is special in some regards, as we will mention later in the study.

These settlements started to decline in the 1970s. This resulted in an incomplete society without local intellectuals. As a consequence a lonely, declassed local society was formed with depression, hopelessness and no future as its main characteristics.



Source: The authors

Figure 3. The research sites, all in the Abaúj area of Borsod-Abaúj-Zemplén County in northeastern Hungary, near the border with Slovakia

[1] *The data was collected in the framework of the Felsőoktatási Kiválósági Pályázat [Quality in Higher Education Grant] by a research group formed at the Faculty of Arts, University of Miskolc, using quantitative and qualitaty methods (surveys, statistics, interviews and field notes). The research project is named "Creative Region".*

[2] *László Faragó's analysis of Büttös, 2018 (unpublished manuscript)*

Fáj has a population of 457 (2018). In the national census of 2011 3% of the inhabitants declared themselves as Roma, although estimations run much higher. In times past, the settlement belonged to the Fáy family. Their memory is gone, only the classical mansion built in 1750 remains. Since the 1990s the building is in trust of The National Trust of Monuments for Hungary. It has a joint local government with Szalaszend. The village has a Roman Catholic church.

Fulókércs[3] has a population of 415 (2018). The village is mostly inhabited by Roma. Therefore the process of aging cannot be found here. Out of the 113 households of the village 60% (71 households) have running water, 29 houses are connected to the gas supply system. In the framework of the current housing programme 6 social rental units are being built.

Fulókércs has a kindergarten with 51 children and a primary school up to the fourth grade. From fifth grade children travel to school in…

Two of the inhabitants are college graduates, 10 people graduated from secondary grammar schools and 30 persons finished vocational training. Some of the youngsters attend secondary school in Encs, Tokaj, Debrecen and Szikszó. Since 2012 a special afternoon school for children with special needs has been operating in the settlement.

The centre of the village is the "House for the Elderly", as locals tend to call it, in which a soup kitchen and also a library operate. The community house is full of life and events. The village has a Calvinist church and a nice football field with dressing rooms. In terms of local transportation the village has little to offer. The village bus runs hundreds of kilometers every day. Besides its two grocery stores, the village also has a nicely renovated family doctor's office, but without a doctor, as no one wishes to run it. A health visitor is available regularly. Currently 100 people work in the public work programme breeding livestock, producing crops and renovating buildings. The 2-3 acres of cultivated land provide the villagers with almost everything. The inhabitants are hard-working people. Several civil organizations have tried to help, some of them with success. The mayor is Roma and has a very good reputation in the village.

Hernádpetri[4] is a small, cul-de-sac village in the northeast of the Cserehát region, near the Slovakian border. In 2018 its population was 259. In terms of public transportation the village is hard to access: only the bus between Hernádpetri and Encs are available. The village is inhabited mainly by Roma, with only a few non-Roma households to be found. The number of ruinous houses is striking. Several households lack running water. Electricity is supplied on a prepaid basis. Its late baroque Roman Catholic church, built in the 18th century, is regarded to be in a dangerous state and is not in use.

Basic grocery items are hard to come by as the only grocery store of the village keeps rather hectic hours of operation. Medical assistance is available once a week, and serious illnesses or emergencies are treated in Encs. With no kindergarten and elementary school in the village, the children attend primary school in nearby Hernádvécse. Most of the inhabitants are undereducated and job opportunities are scarce.

Szemere is situated 5 kilometers north of the Slovakian border, in the district of Encs. It is 18 km from Encs and 60 kilometers from Miskolc. Since 2013 the settlement has a joint local government with Szalaszend. The nearest train station is 13 kilometers away, in Méra, with access to main roads. The only form of public transportation is that of the bus with a few services daily. More than half of the inhabitants are ethnic Hungarian (58%), 42% are Roma. Its population was 417 in 2018. A little more than half of the population belongs to the age group of 18-54. The proportion of elderly people (above 60) is 11.67%. Outward migration is common, with only a few newcomers settling in the village. The low number of local intellectuals is a serious problem.

While five registered entrepreneurships at the village is 5, only one local person is employed. In 2011 and 2012 76 people worked in the public work programme. The local government is the largest employer; entrepreneurships cannot provide job opportunities for the locals. In the framework of the public work programme a pig farm was established that provides meat for the local soup kitchen. They have also built greenhouses, received some state-owned agricultural fields and purchased bio furnaces. As part of the public work programme a small number of people produce pasta and baked goods, also for the local soup kitchen and for the children in school. A fruit processing unit has also been established in which they process apples and make apple juice. In 2015 a Social Agricultural Collective was formed for producing juice. It employs six persons. The local government provides help for the elderly and food for those in need. Ever since February 2001 the village has offered a village coordinator service[5], which was welcomed by the locals. The inhabitants rely on the service and use it on a regular basis. The village coordinator currently uses a Volkswagen minivan to transport villagers. Although the settlement does have a doctor's office, the position is vacant. Medical services are provided in Szalaszend; people seeking medical help need to travel on their own or use the village coordinator's transportation service. There are two grocery stores in the village (one is part of the grocery store chain 'Coop', the other is in private ownership) and one bar (more like a café).

[3] *Virág Havasi's analysis on Fulókércs, 2018 (unpublished manuscript)*

[4] *Attila Papp Z.'s analysis of Hernádpetri, 2018 (unpublished manuscript)*

[5] *The village coordinator service is a social service provided for the inhabitants in disadvantaged settlements. Among others, it includes transportation services and administrative help.*

There is a post office as well. Once there was also a community center in the village. Its building is now used by the school. The lack of community center is prominent in the village. The settlement has both a kindergarten and an elementary school.

The Local Innovation Potential – the Basic Model

The basic model has been formed by building on previously existing models. We wanted it to have more pillars (as, in an ideal case, settlements also have more than onestrength to draw upon) and to reflect one of the most important characteristics of innovation: diversity. We also wanted the model to be suitable for applying quantitative and qualitative methods and approaches and for building on different data sources. It was also important to form a model whose indicators are available and measurable in every settlement in focus. We observed the criteria of validity and reliability and also the need for a standardized measurement tool. The model rests on four pillars: (1) local courage (LC); (2) human resources potential (HR); (3) economic potential (EP) and (4) cultural and natural "resources" (CNR).

The first pillar appears in the model because we wanted to put on emphasis on the fact that social innovations tend to come from a grassroots perspective and usually offer a novel kind of solution to existing social problems or challenges. Compared to the innovation measurement tools introduced above, it is a new component. Other studies did not identify such processes as local courage.

The second pillar or component (HR) is a well-established component of measuring innovation potential. The operationalization differs but human resources are usually part of any measurement of innovation capacity. The same can be said about the third component, economic potential.

In terms of the CNR we applied the approaches of the Collection of Hungarian Values and focused on the cultural and natural resources of the settlements.[6] These strengthen local identity and help to form bonds.[7] This is also a common component of models measuring local innovation capacity and is usually referred to as a common environmental factor. The CNR component we are suggesting is more than that. We believe that in order to balance disadvantages we need to draw upon the cultural resources and strengthen local identity, among other factors.

Within each pillar we listed the dimensions and the possible indicators by which we can measure them. When forming the model we built on the concept that correlations revealed by quantitative data and their hidden meaning can further be examined by qualitative approaches. Thus part of our data comes from statistics, documents (decrees, strategies and reports), another part comes from survey data, while the rest comes from qualitative interviews and fieldwork notes. The source of our data and its qualitative or quantitative nature is indicated in Figure 3.

Each dimension or component is measurable by seven indicators. The maximum value of a dimension/component is 35. All seven indicators are measured on a five-point scale. In order to standardize the index we transformed the dimensions (with their maximum value of 35) to a 100-point scale (where 35 means 100 per cent). The value of the components of the LIP has been calculated accordingly. The maximum value of LIP index is thus 140 (4 pillars, each with 7 indicators, each measured on a five-point scale). The maximum value of 140 is then transferred to a 100-point scale to arrive at a standardized LIP index.

1. Local courage (LC)

- co-operation (qualitative, interview)
- good practices in education (qualitative, interview)
- grant activity (quantitative, amount of received EU grants/person 2012-2018)
- novel solutions - economic (qualitative, interview)
- participation in community events (quantitative, survey – percentage)
- participation in the work of NGOs (quantitative, survey – percentage)
- number of non-profit organizations (quantitative, TeIR[8] – percentage)

2. Human Resources Potential (HR)

- proportion of higher education graduates (quantitative, TeIR – number of higher education graduates/100 persons)
- percentage of "active individuals" (quantitative, TeIR – percentage of 18–54-year old population)
- abortion rate (quantitative, TeIR – percentage of abortions in relation to births between 2011 and 2013)
- infant mortality rate (quantitative, TeIR – percentage in relation to the average of 2001–2013)
- aging (quantitative, the proportion of elderly (65+) to other age groups)
- local knowledge (quantitative, survey – percentage)
- vehicles (quantitative, TeIR – number of passenger cars/100 persons)

[6] *www.hungarikum.hu*

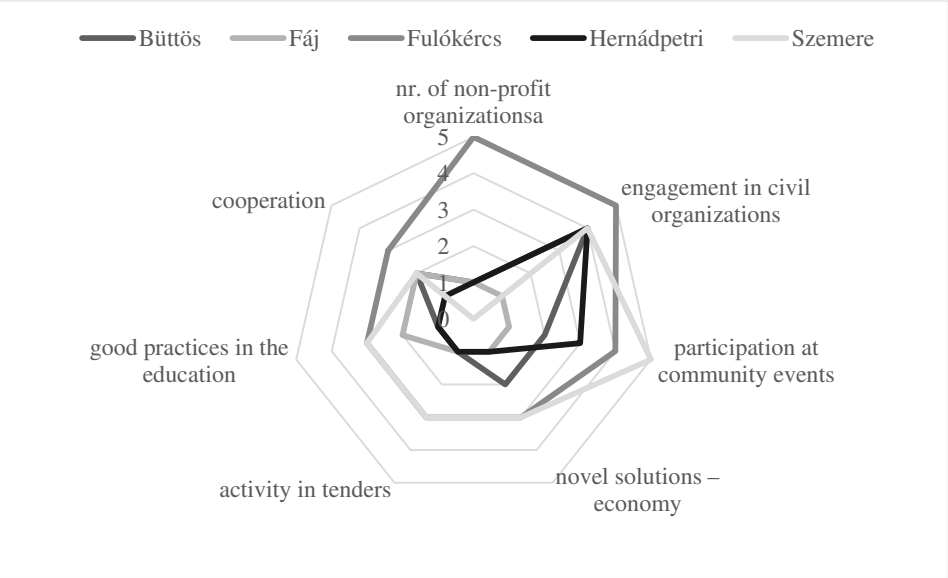
[7] *www.hungaricum.hu*

[8] *TeIR: Országos Területfejlesztési és Informatikai Rendszer (National Territorial Develeopment and Informatics System): https://www.teir.hu*

3. Economic potential (EP)
➢ number of entrepreneurships (economic sector, types) (quantitative, TeIR - /100 persons) ➢ Net income per person (quantitative, survey – per person) ➢ infrastructure (quantitative, TeIR) ➢ unemployment rate (quantitative, TeIR – percentage of unemployed in the age group of economically active citizens) ➢ local tax (quantitative, TeIR – local tax income /100 persons) ➢ employment rate (quantitative, TeIR – proportion f employed to citizens in active age) ➢ migration (quantitative, TeIR – migration balance)
4. Cultural and natural resources (CNR)
➢ natural values (qualitative, interviews, observations) ➢ values of the built environment (qualitative, interviews, observations) ➢ intellectual property (qualitative, interviews, observations) ➢ artifacts (qualitative, interviews, observations) ➢ local artists, groups (number of groups and individuals; types of groups) ➢ famous people (qualitative, interviews, observations) ➢ local traditions (quantitative, survey – percentage)

Source: the authors

Figure 4. The basic model of Local Innovation Potential (LIP)



Source: the authors

Figure 5. Results for the local courage (LC) indicators)

Adaptability of the Model in the Settlements of Focus

The results of the local courage index for the five settlements of Abaúj are shown in Figure 4.

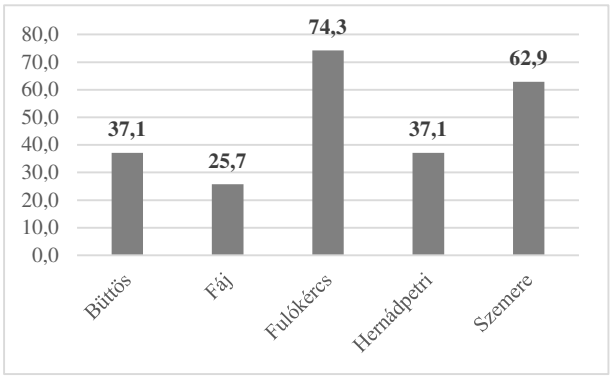
As shown in Figure 5, the most significant item of the local community activity is the engagement in civil organizations. It is the most defining factor in the measurement of activity among the inhabitants. This item is especially strong in Fulókércs. As we have already pointed out in the description of the settlement, Fulókércs has a strong, solid community with the current mayor as its driving force. Participation in local community events is a similar item that is especially high in Szemere. While Szemere is different from Fulókércs in several ways, they are also similar as both settlements have mayors who are in the centre of local community life. It is an interesting characteristic of Szemere that the local intellectual elite are not necessarily local: i.e. the cultural life is organized by the head of the kindergarten, who lives in Miskolc, while the schoolmaster lives in Szemere. There is only a small group of decision-shaping intellectuals in Szemere. In Fulókércs this group is replaced by an active Roma community with strong community ties. These are suitable to form a base of presenting and delivering patterns.

The figure also shows that in terms of LC two settlements have significant roles. These two settlements are geographical neighbours, and one is populated by almost only Roma while the other only has a minority of them.

Büttös, described as an aging and poor village, also has a community that is active in civic organizations. We have to note, though, that due to its aging population the number

of non-profit organizations is low. We can conclude that the social activity of the locals does not have organizational frameworks, they rather engage in spontaneous activities. The same is true in Szemere: although there are no civic organizations, the population still live an active community life.

Hernádpetri is a many-folded settlement in many terms. Community activity is not high; it shows a rate characteristic of communities called cultures of poverty. Meanwhile, thanks to civil organizations coming from outside, from time to time there are integrative, community development programmes aiming to compensate disadvantages.



Source: the authors

Figure 6. Values of the local courage (LC) dimension

Figure 6 shows the LC index at the five settlements. The figure confirms our findings: Fulókércs has the highest rank in local courage, followed by Szemere. Fáj has the lowest index: out of the 7 indicators 5 of them received 1 point only.

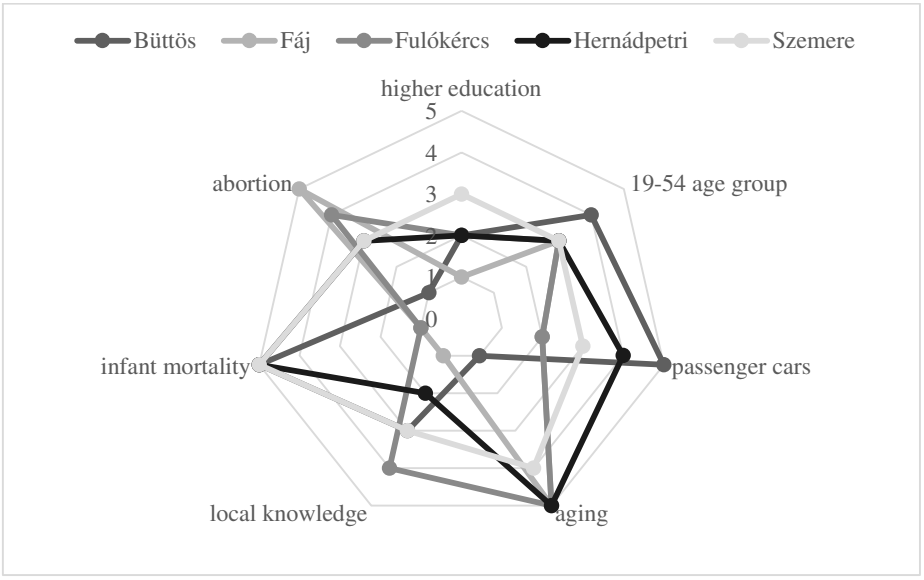
The next component of the local innovation potential is the human resources potential (HR).

Looking at Figure 7 we can immediately note that the human resources potential does not vary to the extent seen in the case of the local courage index. In that indicator Szemere and Fulókércs achieved higher results. Szemere shows good results in terms of human resources potential as well, neck to neck with Hernádpetri.

We have mentioned earlier that Hernádpetri is a many-folded settlement. This is due to the fact that the village has a high proportion of Roma inhabitants: the village has a more favourable age structure (aging rate in 2015: 31.11/5), while the number of higher education graduates is very low (1.7% in 2016), it has a negative migration potential and the settlement does not have any educational institutions. The proportion of the 19-54 age group the number of passenger cars are relatively high, both of which can be regarded as a sign of vitality, (as well as the need for locals to have cars due to the lack of proper public transportation). The village has a very favourable aging rate: the number of elderly is low compared to the number of children. The infant mortality rate is also favourable in Hernádpetri. As we have already pointed out, several development projects have been initiated in the village by outsiders. Therefore, the fieldwork showed some resistance toward new projects among the locals.

Szemere also shows favourable results in this indicator. Among the villages in focus Szemere has the highest proportion of higher education graduates, while the aging and infant mortality rates are also good.

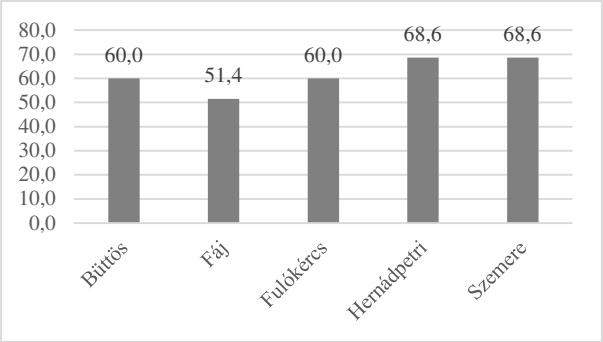
Fulókércs achieved good results in terms of local courage and, as we can see, its local knowledge level is significant as well. This means that the locals have skills and knowledge in many forms, i.e. sewing, embroidery, folk art, crafts, wood-carving, metal-working, etc.



Source: the authors

Figure 7. The "pattern" of human resources potential (HR) indicators

Figure 8 shows the value of the component for each settlement. Hernádpetri and Szemere have the highest value of human resources, followed by Fulókércs and Büttös. Fáj falls behind the others.



Source: the authors

Figure 8. The values of human resources (HR)

The third pillar of local innovation potential is the economic potential (EP). As we can see in Figure 9, Fáj and Hernádpetri have lower EP scores, while Fulókércs, Büttös and Szemere have higher economic potential.

As we can see, only Büttös receives any local tax income – this is a common pattern in the region. Büttös tends to produce better results in terms of employment and unemployment as well (employment rate: 40.6%; unemployment rate: 4.5% in 2016). In Büttös more and more Slovakian citizens are purchasing properties and renovating houses, which may in the future lead to a resort-like settlement. In terms of the economic potential, the data from Fáj is alarming. The lack of entrepreneurships, local taxes and modern infrastructure together with high outward migration is very unsettling. Fáj's results for local knowledge are low, the number of higher education graduates is low, the local courage is non-existent.

Looking at the EP index (Figure 10) it is clear that Szemere and Büttös are in the most favourable position, followed by Fulókércs and Hernádpetri. Fáj has the lowest rank in this dimension as well.

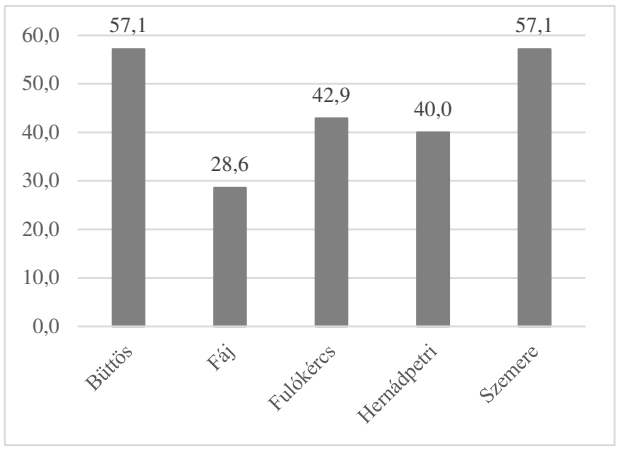


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Figure 10. Economic potential index

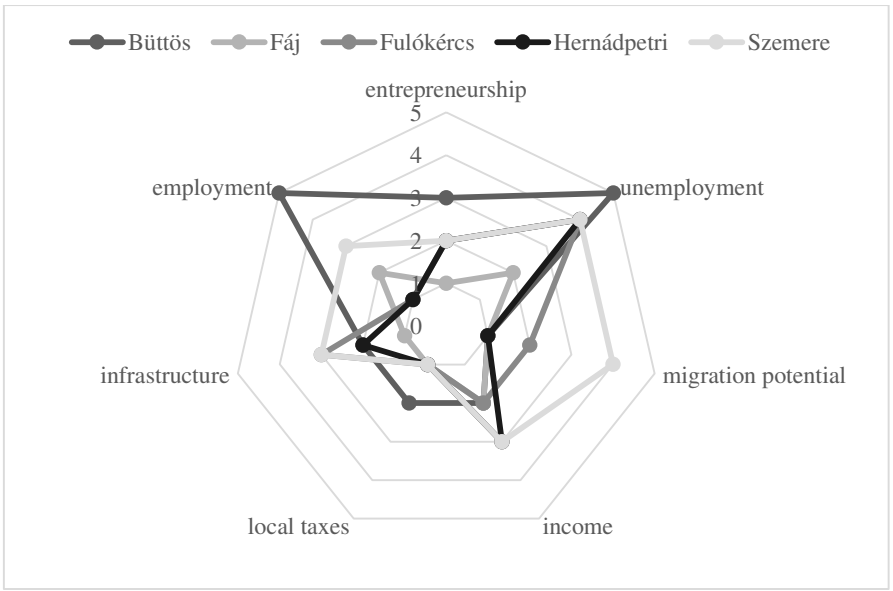

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Figure 9. Economic potential

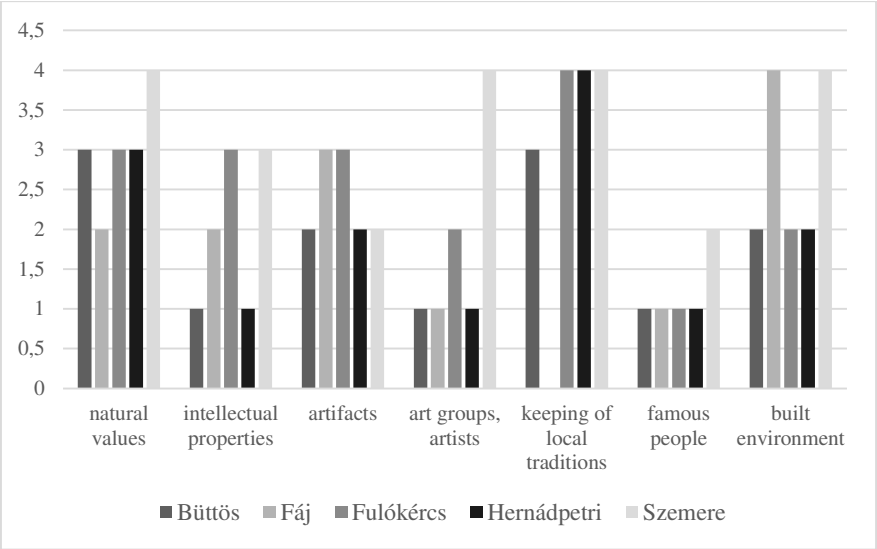

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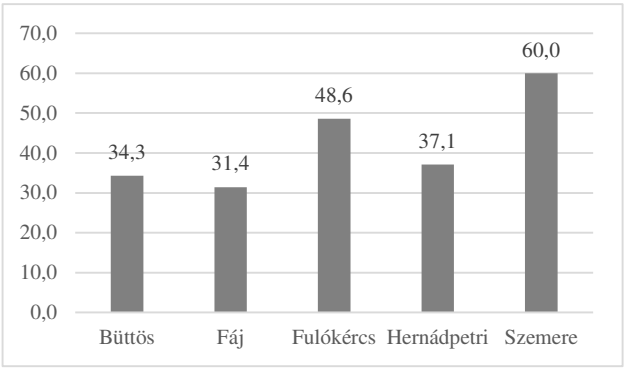
Figure 11. Scores on CNR index indicators for the settlements

The final pillar of the LIP index is the cultural and natural resources (CNR).

Figure 11 shows more elaborate correlations. The well-known belief that the inhabitants of Abaúj live in a beautiful natural environment but have a harsh life has been proven. A significant number of people keep local traditions, especially in Fulókércs, Hernádpetri and Szemere (in Fáj none of the interviewees could name any local traditions). In terms of the built environment the Fáy mansion in Fáj (which, according to our latest information has been dropped from the National Programme for preserving historic mansion and castles) and the Pallavicini mansion in Szemere (that houses the local kindergarten) shall be mentioned. Most of the artistic activity in Szemere is connected to the local elementary school, where a specialization in folk-dance and arts is offered.

As Figure 11 shows, Szemere achieved better results than the other four settlements in regard to the cultural and natural resources index. Our qualitative research shows that the CNR index is high due to the mayor and a group of individuals who are active in keeping the local traditions alive, encouraging artistic activities, organizing local community events and working hard toward keeping the mansion and its park in good condition. The local government offers accommodation for travellers in the major of the former village clerk, Lajos Perlik.

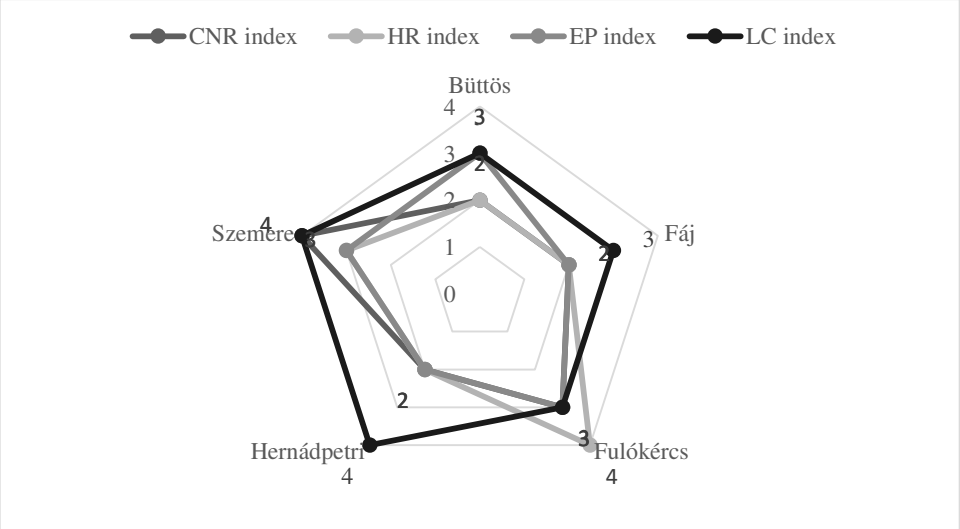


Source: the authors

Figure 12. The values of CNR index by settlements

In relation to the CNR index (Figure 12) Fáj is in last place among the settlements studied, with Szemere leading and Fulókércs in a relatively strong position.

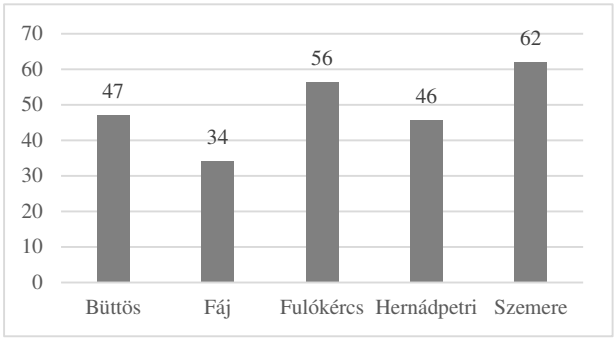
Finally, we present the local innovation potential (LIP) index that has been calculated for the five settlements (Figure 13).



Source: the authors

Figure 13. The "Pattern" of local innovation potential (LIP)

Among the settlements in focus, the local innovation potential in Szemere is the highest. Here two pillars of the LIP are especially strong (CNR and HR). Fulókércs, with its high local courage, follows Szemere falling behind by only one point. Büttös and Hernádpetri share the third place, although – as pointed out above - these two villages are rather different in many aspects. Fáj has the lowest cumulative index, partly because of its unfavourable socio-demographic, geographical and economic conditions (and probably requires immediate intervention).



Source: the authors

Figure 14. The values of local innovation potential (LIP) by settlement

Figure 14 shows the value of LIP for each settlement. As our analyses allowed us to presume, Szemere has the highest local innovation potential, followed by Fulókércs and Büttös. Szemere achieved high points in all components used for the measurement of LIP, while Fáj has low points in all of them. Fulókércs is a leader in local courage, an outstanding community that is able to provide community well-being even if the economic conditions are unfavourable. Büttös and Hernádpetri are contradictory, which is clearly shown in their result of local innovation potential.

SUMMARY, CONCLUSIONS

The study aimed to form an aggregated, integrated index based on the results of fieldwork and survey that is capable of showing the local innovation potential and the possible directions for future developments. We also wanted to show that two settlements of similar socio-demographic and geographical backgrounds can vary significantly, can show very different patterns. And, on the other hand, we wanted to show that two settlements that are very different at first glance (and at second as well) can face similar challenges and fall into one category.

In the future we would like to test our index further, to compare it to other indexes, to broaden the research and to fine tune our index. As our index is partially based on qualitative data, broadening the perspective has its limits (we cannot do research in thousands of settlements), but regional research is possible.

In our view, as an aggregated index containing small mosaics, the LIP index shows the colours, the similar patterns but also the existing shades and nuances of settlements. It is built on both qualitative and quantitative data, on "soft" and "hard" social scientific methods. It aims toward systematic analysis by creative and innovative approaches. It does not fail to mention that social realities and worlds depend on the point of view taken. They can only be shown from the perspective of parallel universes and opinions. The picture will never be homogenous or, at least, it will never be identical.

Acknowledgement

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REFERENCES

CASTRO SPILA, J. & LUNA, Á. & UNCETA, A. (2016). Social Innovation Regimes: An Exploratory Framework to Measure Social Innovation. SIMPACT Working Paper, (1), 5-23.

COMTE, A (1979) A pozitív szellem. Két értekezés (Positive Mind. Two Essays). Budapest: Magyar Helikon.

ECONOMIST INTELLIGENCE UNIT (2016). Old problems, new solutions: Measuring the capacity for social innovation across the world. https://www.essmart-global.com/wp-content/uploads/2016/12/2016.09.29-Economist-Social-Innovation-Index.pdf (retrieved: January 2019)

G. FEKETE, É. (2001). Innovációk a kistérségi fejlesztésben. Tér és Társadalom, (3–4) 39–53. (Innovation in Regional Development) https://doi.org/10.17649/TET.15.3-4.819

HOWALDT, J., KOPP, R. & SCHWARZ, M. (2014). Theoretical Approaches to Social Innovation – A Critical Literature Review. A deliverable for the project: "Social Innovation: Driving Force of Social Change" Dortmund: SI-DRIVE.

KOCZISZKY, G. & SZENDI, D. (2018). Regional Disparities of the Social Innovation Potential in the Visegrad Countries: Causes and Consequences. European Journal of Social Sciences Education and Research, 12(1), 35–41. https://doi.org/10.2478/ejser-2018-0004

LADÁNYI, J. & SZELÉNYI, I. (2004). A kirekesztettség változó formái. Közép- és délkelet-európai romák történeti és összehasonlító szociológiai vizsgálata (Various forms of segregation. comparative study of Roma from Central and South-Eastern Europe). Budapest: Napvilág Kiadó.

NEMES, G. & VARGA, Á. (2015). Társadalmi innováció és társadalmi tanulás a vidékfejlesztésben – sikerek, problémák, dilemmák (Social innovation and social learning in regional development – success and problems). In: Veresné Somosi, M. & Lipták, K. (eds.): „Mérleg és kihívások" IX. Nemzetközi Tudományos Konferencia Kiadvány. http://gtk.uni-miskolc.hu/files/8799/M%C3%89RLEG%20%C3%89S%20KIH%C3%8DV%C3%81SOK%20KONFERENCIA%20KIADV%C3%81NY%20Miskolc-Lillaf%C3%BCred%202015.10.15-16..pdf (retrieved: January 2019)

NÉMEDI, D. (2010). Durkheim and innovation. Sociological Review, 2010/2, Retrieved: January 2019 http://www.szociologia.hu/dynamic/revsoc_2010_2_4_16_nemedid.pdf

PÉNZES, J. (2014). Periferikus térségek lehatárolása – dilemmák és lehetőségek (Defining Segregatated Areas – Dilemmas and Opportunities). Debrecen: Didakt Kft.

SCHUMPETER, J. (1934). The Theory of Economic Development. Cambridge, MA: Harvard University Press.

SPENCER, H. (1898). The Principles of Sociology, in Three Volumes. New York: D. Appleton and Company.

SZENDI, D. (2018). A társadalmi innovációs potenciál mérésének lokális szintű lehetőségei (Possibilies of measuring social innovation potencial at local level). Erdélyi Társadalom, 16 (1), 31–58.