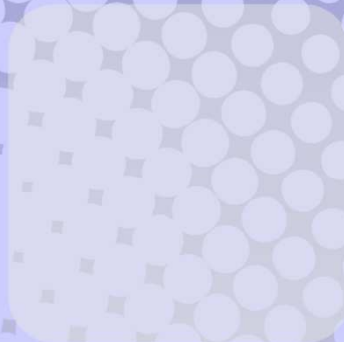


# DETUROPE



**Central European Journal of Regional Development  
and Tourism**



**Czech Republic**



**Hungary**



**Serbia**

# **DEUROPE**

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## **X. Conference of Young Regionalists**

In June 2017, the X. Regional Conference of Young Regionalists was co-organized by the West Hungarian Research Department of the Institute for Regional Studies, the Hungarian Academy of Sciences CERS, and the Hungarian Regional Science Association and the Széchenyi István University Doctoral School of Regional and Economics Sciences.

In her lecture, Dr. Viktória Szirmai research professor (HAS Centre for Social Sciences Institute for Sociology) explained what processes take place today regarding the social polarization trends of European cities and Hungarian cities in global urbanization alike. Dr. János Rechnitzer professor (head of the Doctoral School) spoke about the new directions of city research based on Enyedi's inspirations. Dr. László Faragó professor, senior research fellow (HAS CERS Institute for Regional Studies) presented the national and European directions of urban planning and the we gained insight into the practices of urban development. Dr. Dávid Fekete, senior lecturer, Vice Mayor (Győr city with county rights) held an exciting lecture on the economic functioning of the Hungarian government. The high-quality plenary lectures were heard by 40 people, and after the lunch the sessions began. The five sessions included 6-7 lectures, so more than 30 Hungarian researchers presented their topics. The workshop was successful, the best presentations were selected and their studies can be published in the journal *Deturope*.

In the following five sessions, we could hear interesting presentations by young researchers:

- The transformation of the economic structure (Chairs: Prof. Dr. János Rechnitzer and Prof. Dr. József Nemes Nagy)
- The social structure and shape of the urban space (Chair: Prof. Dr. Viktória Szirmai)
- The process of urban planning, the vision of cities and planning (Chair: Prof. Dr. László Faragó)
- Smart and creative cities (Chair: Dr. Mihály Lados)
- Resources and spaces in cities (Chair: Dr. Pál Szabó)

The event was concluded with a standing reception, which was hosted at the Liszt Ferenc Street Building of West Hungarian Research Department of the Institute for Regional Studies (HAS – CERS) where we organized a duo-guitar show. As part of the reception, informal conversations have emerged that are likely to further inspire the research community.

Our Guest Editors – Prof. Dr. János Rechnitzer, Judit Berkes – have selected and prepared for this issue of our journal *Deturope* – the Central European Journal for Regional Development and Tourism the most interesting papers from this event.

## **PERCEPTIONS OF CZECH RURAL LIFE BY ITS INHABITANTS IN CONNECTION TO TOURISM**

## **PERCEPCE ŽIVOTA NA ČESKÉM VENKOVĚ JEHO OBYVATELI VE VZTAHU K CESTOVNÍMU RUCHU**

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### **Abstract**

Rural tourism in the EU Member States is an important segment of the tourist market. Rural areas achieve multiple benefits from developing rural tourism. From this point of view, rural tourism revitalises rural areas, decreases depopulation, enables the valorisation of economic resources, etc. On the other hand, rural tourism highlights, and thus preserves, the cultural, environmental, natural, traditional, and historical characteristics of a specific rural area. In this way, the regional diversity, authenticity, and recognisability are maintained in the united Europe, which provides a competitive advantage to the European Union's tourist market. However, bottom-up initiatives within the local communities and appropriate attitudes towards the development of tourism are important. The aim of this contribution is to evaluate the perceptions of Czech rural life by its population with a focus on tourism. The evaluation is a part of a broad-based questionnaire survey aimed at the assessment of different aspects of rural life. The perceptions of tourism are monitored in conjunction with other characteristics of self-assessment by respondents and their assessment of the villages in which they live. Classical dependencies of the obtained data from the survey were analysed at first, and then multidimensional statistical methods (CATegorical Principal Component Analysis, cluster analysis) were used in the hypothesis testing of the interference of "hard" and "soft" factors of the rural development. This comparison confirms that "hard" and "soft" development factors really affect each other. Therefore, rural development strategies need to be designed so that both sets of factors are in line with the aim of synergy. The hard localization and realization factors themselves, without supporting the development of soft factors, do not have the desired effect.

**Keywords:** rural tourism, inhabitants' perceptions, questionnaire survey, Categorical Component Analysis, cluster analysis

### **Abstrakt**

Venkovský turismus představuje ve státech EU významnou součást nabídky cestovního ruchu. Venkovské oblasti získávají z rozvoje cestovního ruchu četné benefity. V tomto slova smyslu se rurální turismus podílí na revitalizaci venkovských oblastí, snižování populačních ztrát, valorizaci ekonomických zdrojů atd. Vedle toho také vychází a vede k zachování kulturního prostředí, přírodních, historických a kulturních charakteristik konkrétní oblasti. Tímto způsobem je podporována ve sjednocené Evropě regionální diverzita a autenticita, což poskytuje konkurenční výhodu na trhu CR v rámci EU. Důležitá je však iniciativa a vhodné postoje k CR zdola, v rámci místních komunit. Cílem příspěvku je hodnocení postojů obyvatel českého venkova k jejich životu na venkově se zaměřením na cestovní ruch. Hodnocení je součástí široce pojatého dotazníkového šetření, jehož cílem bylo hodnotit různé aspekty života na venkově. Vnímání cestovního ruchu je sledováno ve spojení s ostatními charakteristikami sebehodnocení respondentů a jejich hodnocení obcí, ve kterých žijí. V datech z dotazníkového šetření byly analyzovány klasické závislosti, při testování hypotéz o prolínání „tvrdých“ a „měkkých“ faktorů rozvoje venkova

byly využity vícerozměrné statistické metody (kategoriální analýza hlavních komponent, shluková analýza). Provedené srovnání potvrzuje, že se „tvrdé“ a „měkké“ faktory rozvoje skutečně navzájem ovlivňují. Rozvojové strategie venkovského prostoru je tedy třeba navrhovat tak, aby byly obě skupiny faktorů v souladu, s cílem vzájemné synergie. Samotné tvrdé lokalizační a realizační faktory bez podpory rozvoje měkkých faktorů nemají žádoucí účinek.

Klíčová slova: venkovský CR, percepce obyvatel, dotazníkové šetření, Kategoriální analýza hlavních komponent, shluková analýza

## INTRODUCTION

At present, rural agriculture is not a dominant economic activity. An increasing proportion of the population commutes to work outside their home village. The significance of tourism is gaining importance, and also the specific Czech phenomenon, which is second housing, maintains its important role. The development and quality of life in municipalities, cities, regions and states is closely linked to people-to-people relationships, mutual trust or trust in institutions; all the elements that are collectively referred to as social capital. Social capital is a dynamic structure that regulates individual behaviour in networks and vice versa (Giddens, 1984). In terms of the potential or the realization of certain goals, it may also be perceived as a collective resource (Havlíček, 2007; Pisseli, 1999). Although we know of a number of examples of inconsistent use of social capital (e.g. Granovetter, 1973, draws attention to the exclusivity of networks whose actors abuse them for short-term personal gain), we consider it, like Putnam (1993, 2001), primarily as a positive value and a development factor.

### **Rural transformation and rural tourism**

The political and economic transformation commenced after 1989 has significantly influenced all the social reality of the country, including the countryside. The changes in the last decades, consisting of a decline in agricultural activity and light industry, have resulted in population decline and economic stagnation, and are linked to serious social problems. Significant changes in the socio-economic environment have led to an increasing rural differentiation. These changes have had the greatest impact on small rural municipalities, which attempted to suspend the overall decline by replacing the fall of traditional forms of livelihood with the service sector (Horáková and Fialová, 2012, p. 17). A gradual transition from agriculture to the development of services is referred to as the post-productivist transition (Ilbery, 1998). Modern post-industrial rurality has emerged, providing new opportunities for the rural use of new alternative forms of livelihoods for the rural population. One of these forms is the use of rural space through sustainable forms of tourism.

Currently, rural tourism is one of the fastest growing forms of tourism (Roberts and Hall, 2001). Petr (2012) discusses the difficulties in viewing of the basic terms and hence the difficulties regarding measurability of the rural tourism phenomenon. Bramwell (1994) considers whether the physical existence of tourism activities in rural areas forms an individual "rural tourism" sector. According to Stříbrná (2005), problems arise in connection with the intermingling of urban and rural tourism in suburban areas, where the differences between rural and urban areas are decreasing due to globalization, suburbanization, ICT development or even the "non-rural" character of some tourism activities operating in rural areas. Similar findings are suggested by the results of the survey presented in this paper. The difficulties associated with the definition of rural tourism lead to problems of measurability of its impacts at the local, regional and international levels, reflecting the diversity of definitions not only of the rural, but also of rural tourism in different countries (Hall et al., 2003).

According to the Dictionary of Tourism (Zelenka and Pásková, 2012, p. 601), rural tourism is an aggregated label for a type of tourism connected with multi-day visits and recreational activities in the countryside (walking, cycling or horseback riding, observation and care of domestic animals, consumption of home-made food, etc.), and with accommodation in private or smaller collective establishments. The attractiveness of rural tourism is based on some aspects of a real or fabulous view of the rural way of life (vast, quiet, peaceful landscape, unpolluted air, work activities, customs and folklore, etc.). Sharpley and Roberts (2004, p. 119) describe rural tourism as a "dynamic phenomenon". One of the most influential approaches to defining rural tourism is the OECD definition created in collaboration with Bernard Lane (Lane, 1994, 2009). This definition describes rural tourism as a discrete activity with typical characteristics (scale, location and character).

### ***Tourism as a factor of rural development***

The countryside was traditionally a place of production, dominated by farming, but changes in farming practices, mechanisation and the influences of globalisation have profoundly affected the fabric of rural communities, which have increasingly shifted from being production spaces to consumption spaces in which tourism plays an important role (Marsden, 1998; McAreavey and McDonagh, 2010). Rural restructuring, as a result of these changes in agriculture, has had significant effects on the social and cultural make-up of rural communities. Out-migration, especially of young people, has been a common practice as people seek work in urban areas to replace now lost, land-based occupations (Butler et al., 1998). Some rural regions in western countries have seen an influx of new wealthy residents from urban and semi-urban areas who



seek leisure and relaxation in the countryside as a form of rural gentrification (Sutherland, 2012). These changes have affected the cohesion and vitality of many rural communities.

In the Czech Republic (Petr, 2012), the question of the countryside was long in the shadow of more important problems whose solutions were given priority (the transformation of the economy and political system, restructuring, unemployment, etc.). Due to the structural reforms, many Czech rural municipalities have experienced a significant drop in production both in agriculture and in light industry. The transformation of Czech agriculture has led to changes in all the levels of social environment of the countryside (Horáková and Fialová, 2012). Changes in ownership, transformation of agricultural cooperatives and the privatization of state farms led to a decline and restructuring of agricultural production. The number of the economically active population in agricultural production has radically decreased, which has led to significant economic and social problems and the consequent outflow of young people into cities. This significantly changed the age structure of the rural population.

Extensive changes in socio-economic conditions have led to increasing rural differentiation. Municipalities in urban hinterlands have seen the inflow of the middle and upper strata of urban residents into new residential locations, leading to a general revitalization of these municipalities. However, the above-mentioned changes had the biggest impact on small, remote rural villages that are not located in a convenient location near a city. Most notably, the changes affected the so-called problematic recreational countryside, which includes a large part of the borderland settled after World War II by new inhabitants, which combines both tourist attractive areas with a high proportion of second housing and major socio-economic problems (Perlín et al., 2010; Horáková and Fialová, 2012). In an effort to slow down the economic downturn, population outflow and overall decline, municipalities have been considering alternative development opportunities in the context of rural diversification. The aim was, among other things, to achieve the multi-functionality of rural space. One of the alternatives is the development of various forms of sustainable tourism in rural areas.

The post-productivist countryside is characterised by multi-functionality. While still spaces of (often limited) production through drastically changed agricultural practices, many rural areas are now also ‘places to play’ for the relatively wealthy, often urban, citizens (Sutherland, 2012). Rural regions have seen increases in the number of tourists visiting, in the variety of recreational activities on offer for tourists, and in the nature of those activities, shifting from passive enjoyment of rural environments to also include more active,

technological and resource-intensive activities such as adventure sports (Butler et al., 1998; Roberts and Hall, 2004). These changes in the characteristics of rural tourism require rural communities to provide high levels of service and often specialist skills and support. Such expertise is not always available within rural communities without significant investment in training and education, which is often not forthcoming, especially in poor rural communities. This limits the ability of these communities to get involved in and benefit from rural tourism opportunities. Tourism has been seen as a key mechanism for revitalising rural communities and has been supported by local and national governments across the world, including in western countries such as Portugal and France (Costa and Chalip, 2005), through to the former Soviet nations of Eastern Europe (Dimitrovski et al., 2012) and in many developing countries throughout sub-Saharan Africa, Asia and South America (Briedenhann and Wickens, 2004), with varying degrees of success. There are examples of cases where rural tourism development has directly benefited local communities economically and socially, such as through helping to preserve regional identity and local traditions and keeping young people in rural regions (Gulcan, et al., 2009; Dimitrovski et al., 2012). However, rural tourism development has often been limited by poor planning, lack of infrastructure and inward investment, and corruption (Macbeth et al., 2004).

While tourism development can bring positive social and economic benefits to rural communities, careful planning, community involvement and transparency are essential at all stages. Hall et al. (2004) argue that tourism works best in areas with a thriving and diverse rural economy in which tourism is just one amongst many regeneration strategies. Without this, tourism development can intensify inequality and other problems (turistification).

It is also important to mention the issue of promoting tourism in rural areas. From the experience in Austria the key elements of 'new rural tourism' in harmony with man, culture and nature and based upon future market trends are: accommodation which is original and typical for the area; a restaurant sector going for local atmosphere and both seasonal and local specialities; new profiles focusing on specific themes (e.g. health, culture) or groups (e.g. families, the active elderly); a natural and cultural environment which is refined and presented in an appealing and didactic manner, taking the interests of the resident population into account and establishing a new partnership with agriculture (Hummelbrunner and Miglbauer, 1994).

One of the main tools of rural area promotion is financial support from the EU (Jarábková et. al., 2016) as a tool for rural diversification. Other tools include information, actions of non-governmental organizations, various forms of activation of local communities,

networking (Roberts and Hall, 2001; March and Wilkinson, 2009) etc. Cawley and Gillmor (2008) even developed a model of integrated tourism, which took account of the various resources (cultural, social, environmental, economic), their use, and the role of pertinent stakeholders. The tourism industry, especially rural tourism, is largely dominated by small and medium sized enterprises (SMEs) and is often considered less innovative than other industries. Cosma et al. (2014) describe the role of innovativeness in the rural tourism promotion on the example of Romanian rural tourism.

### **Perception of rural tourism in the literature**

Tourism development renders various economic, socio-cultural and environmental changes on the host community's life, some more beneficial than others (Lee, 2013). Thus, the participation and support of local residents is imperative for the sustainability of the tourism industry at any destination (Gursoy et al., 2010). Understanding the residents' perspective can facilitate policies which minimize the potential negative impacts of tourism development and maximize its benefits, leading to community development and greater support for tourism. A rich body of literature investigates the relationships between residents' perceived impacts of tourism and their support for tourism development (e.g., Gursoy et al., 2010; Ko and Stewart, 2002; Nunkoo and Ramkissoon, 2012). Yet, most of these studies adopt an a priori categorization of potential impacts (into positive or negative economic, social-cultural and environmental impacts or simply costs and benefits), whereas limited attention is given to the residents' own evaluation of the extent to which they perceive an impact as being positive or negative (Andereck, Valentine, Knopf and Vogt, 2005).

Citizen or civic involvement refers to the residents' general involvement in local community groups and activities, meaning their involvement in the civic community (Allen et al., 1988; Ko and Stewart, 2002). The degree of involvement has demonstrated an influence on residents' overall attitudes towards tourism development (Allen et al., 1988; Ko and Stewart, 2002). Allen et al. (1988) argue that a negative attitude towards tourism development is influenced by people's opportunity for civic involvement. Thus, if local residents are locally involved in both tourism and non-tourism related issues, they are inclined to have a more positive attitude towards tourism development in general.

Local residents are key stakeholders in the process of achieving sustainable development in tourism (Eligh, Welford and Ytterhus, 2002). A main focus in tourism impact research has been to study their perceptions of tourism impacts, measuring these perceptions in relation to

how the impacts affect either their community, their quality of life (QOL), and/or their support for future tourism development (Andereck and Nyaupane, 2011; Ap and Crompton, 1998; Easterling, 2005; Ko and Stewart, 2002). The underlying assumption is that tourism development has consequences for local residents' well-being (Kim, Uysal and Sirgy, 2013), and the support of those residents is vital for the tourism industry, as it makes up a major part of the tourist experience (Ap, 1992).

From a sustainable development perspective (i.e. economic, sociocultural, environmental impacts), the evaluative component also highlights which impact dimensions are more or less important to residents. In addition to theoretical relevance, by the application of an importance measure, the inclusion of an evaluative component would facilitate tourism planning efforts. More precise information about local residents' attitudes would help legitimize the planning process (Jamal and Getz, 1995) and facilitate the adoption of a community-based approach to sustainable development, where benefits and costs to the host population are the starting point in the tourism planning process (Saarinen, 2006).

It is important to note that local residents are a heterogeneous group of people (Ap and Crompton, 1998; Easterling, 2005; Lankford and Howard, 1994; Wall and Mathieson, 2006). The application of stakeholder theory (Easterling, 2005), social exchange theory (Andereck, Valentine, Knopf and Vogt, 2005; Ap, 1992) and segmentation analysis (Fredline and Faulkner, 2000) have mainly illustrated this heterogeneity.

Czech literature describing the attitudes of the population to the development of tourism is also relatively rich and diverse, whether it is the final reports of various research, strategic documents, monographs (Horáková and Fialová, 2012), journal articles or final papers. Some examples are noted below. The relationship of the local population to the development of tourism in specially protected areas as in the example of the Podyjí National Park is described by Lindner and Pachrová (2012). Questionnaire surveys of residents, visitors and key actors are among the methods used by the LAC (Limits to Acceptable Change) model, which is used for the planning and regulation of biosphere impacts (see, for example, Pásková, 2003). The attitudes of tourists to the protected areas are studied for example by Navrátil et al. (2013) or Navrátil et al. (2014). The attitudes of tourists and entrepreneurs in relation to the influence of wind farm construction on the territorial development of tourism in Slezská Harta are analysed by Frantál and Kunc (2008). The characteristics of the area image perceived by its inhabitants in relation to tourism are described by Chalupová et al. (2017), Chromý et al. (2014), Patočka and Heřmanová (2008).

## OBJECTIVES AND METHODS

The aim of the paper is to evaluate the perception of the Czech countryside by its inhabitants, both in relation to tourism and in a wider development context. For this purpose, the perceptions of the rural population of themselves and the perception of the village in which they live correspond to the main parts of the questionnaire described below. The information obtained from the questionnaire survey ("soft" data) is further compared to the previously published typology of rural municipalities (Klufová, 2016) based on the quantitative data from Census 2011 ("hard" data). The aim was to verify whether "hard" and "soft" rural development factors intersect and how. When analysing the data, the authors proceeded from the following hypotheses:

**Hypothesis 1:** There is a statistically significant dependence between the self-assessment of the respondents and the individual types of the above mentioned rural typology, i.e. the self-perception of individual respondents (including the relation to visitors and holidaymakers) differs in different types of rural areas.

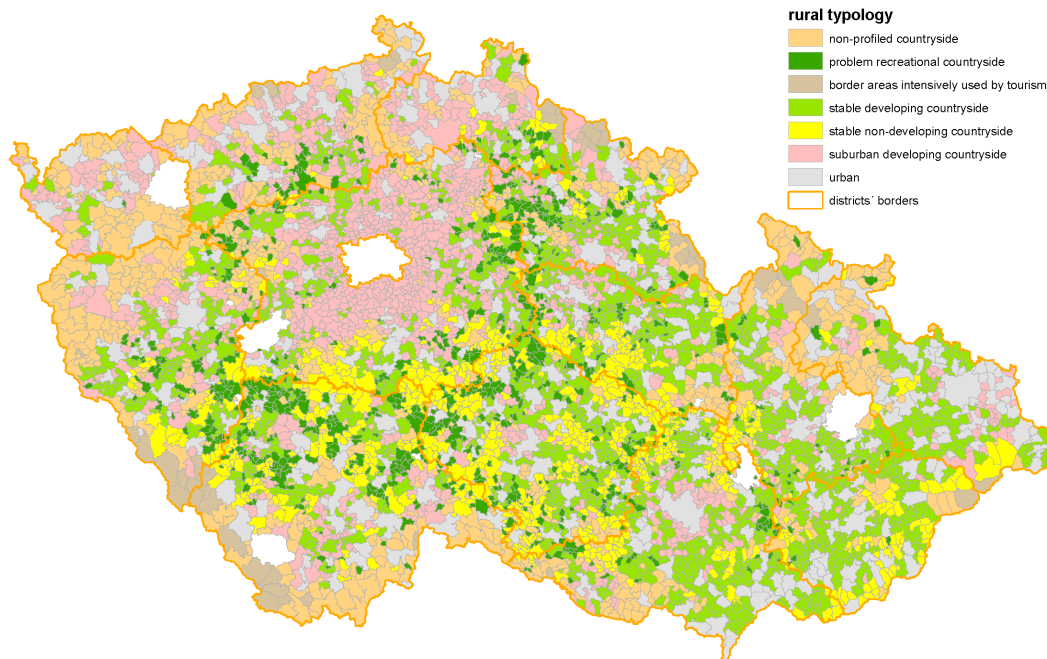
**Hypothesis 2:** There is a statistically significant dependence among respondents' assessment of their village and individual types of the rural typology mentioned above, i.e. the perceptions of the municipality by individual respondents (including attitudes to tourism support) differ in different types of rural areas.

**Hypothesis 3:** In the rural area of the Czech Republic (on the basis of the self-assessment of respondents), several different types of inhabitants of the Czech countryside (profiles of the inhabitants) can be identified. The share of them will also vary according to the types of the rural typology.

**Hypothesis 4:** In the rural areas of the Czech Republic (based on the perception of the municipalities), their inhabitants can identify several basic development factors that will vary according to the types of the rural typology.

### Czech rural typology

The typology of rural municipalities, created by Klufová (2016) in the analysis of the demographic development of the Czech countryside, is based on quantitative data from the Census 2011. Six types of rural communities have been identified (Fig. 1).

**Figure 1** Czech rural typology

Source: own processing in ArcGIS SW

### Statistical methods

Due to the fact that the questionnaire survey mainly obtained categorical (ordinal) data, it had to be processed by adequate statistical methods. The basic test used to determine the interdependence of two categorical variables is the chi-square test of independence. If the assumption for chi-square test in the contingency table is not fulfilled then so-called exact tests are used, e.g. Fisher's exact test (see e.g. Řezanková, 2010). Where the assumptions for the chi-square test were not met, alternative methods (exact tests, or calculation of the significance level reached by Monte Carlo method - see e.g. Pecáková, 2014) were applied in testing Hypotheses 1 and 2.

The basic data reduction methods are Principal Component Analysis (PCA) and Factor Analysis (FA). These methods allow us to replace a plurality of the original variables with a smaller number of latent variables, with the original variables assuming mutual linear relationships. Because the PCA method is designed to analyse quantitative continuous variables, other methods are needed for categorical variables. One of these is CATPCA (CATegorical Principal Component Analysis).

When using the CATPCA method, the use of optimal scaling allows scaling variables at different levels. Categorical variables are optimally quantified within the specified dimensionality. It is also possible to model non-linear relations between variables. The scales of the individual variables may differ. This method also does not require compliance with the assumption of multidimensional normality of data (Šulc and Řezanková, 2015). The choice of the measurement scale of a given variable is very important as it affects the structure of the

correlation matrix. The choice of the appropriate scale is made by the authors. The details of the choice are described, for example, by Linting (2007), and the complete use of the method by Meulman and Heiser (1993).

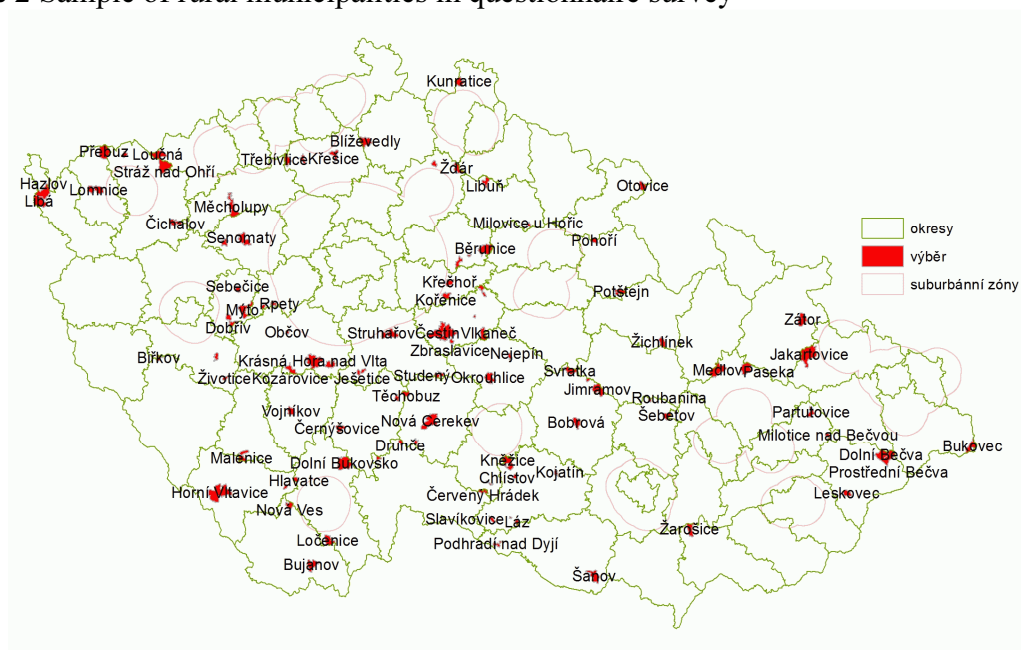
The CATPCA method was used separately to reduce dimensionality within the self-estimation of respondents and separately for the assessment of the municipality by respondents, followed by cluster analysis in testing Hypotheses 3 and 4.

### Questionnaire survey in the Czech municipalities

In order to identify the perceptions of the development of rural communities by their inhabitants, a large questionnaire survey was carried out in 2010 and 2011, where 1000 respondents over 18 years old were addressed (see Fig. 2) within a defined set of 100 rural municipalities (10 respondents were interviewed in each of them). The questionnaire was conducted by Focus agency in autumn of 2010 and in spring of 2011. The municipalities of “border countryside intensively used by tourism” are not included in the analysis due to their specificity and small frequency.

The main part of the questionnaire was composed of several parts: the characteristics of the respondent (using the Lickert scale 1 to 5 evaluated by the respondents), the characteristics of the municipality, the willingness of the respondent to help the municipality, the life in the community (clubs, societies etc.), the activity of the council and involvement of the respondent in its activities, economic activity and the household characteristics of the respondent. In the paper, we focus only on the self-assessment of respondents and the evaluation of the municipality in relation to tourism.

**Figure 2** Sample of rural municipalities in questionnaire survey



Source: own processing in ArcGIS SW

## RESULTS AND DISCUSSION

### Self-evaluation of the Czech rural inhabitants

The respondents had a range of characteristics and their task was to identify those activities or attributes that characterize the particular respondent, their convictions, attitudes and behaviour. The respondents responded to 15 statements (see Tab. 1) to assign a value from 1 to 5, according to the degree of matching the offered characteristic to the respondent's character (1 means the highest degree of agreement and 5 means the absolute disapproval). The respondents could tick all or none of the responses according to the degree of their agreement to the particular characteristics.

When looking at respondents' attitudes towards visitors in relation to other characteristics of themselves, regardless of their membership in the individual types of the Czech rural typology, we find (as expected) that those who positively perceive the visitors to the village and thus support the development of tourism in the municipality, rated themselves as active people.

In the context of contingency tables analysis, the dependency of respondents' perceptions on the type of rural community in which they live was first tested. Tab. 2 shows a statistically significant dependence of the attitude towards the visitors of the municipality on the type of the municipality, i.e. the attitudes of respondents from different types of rural typology to tourism and also other characteristics of self-evaluation differ.

**Table 1** Correlation between positive attitude of respondents to visitors/holidaymakers and other characteristics of respondents' self-evaluation

statements	Spearman's Rho
he/she decides about his/her life	0.201**
he/she is independent	0.239**
he/she prefers family life	0.222**
he/she thinks that village should help its inhabitants	0.198**
he/she likes to keep learning himself	0.204**
he/she thinks about the future	0.240**
he/she likes taking risks	0.068*
he/she does sports actively	0.115**
he/she worries about the future	-0.061
he/she meets with neighbours	0.313**
he/she likes fishing	-0.035
he/she prefers to be alone	-0.109**
he/she deals with public activities	0.239**
he/she likes DIY	0.195**
he/she has a relation to soil	0.289**

Note: \*\* statistically significant correlation on the 0.01 level,

\* statistically significant correlation on the 0.05 level.

Source: own processing in SPSS SW



Tab. 3 shows a generally positive attitude of respondents to visitors in all types of rural municipalities (more than 60% of the population of the problematic recreational and stable developing countryside has expressed a lower or higher degree of agreement; in the case of the non-profiled and stable developing countryside, this share reaches 60%, a higher degree of disagreement (compared to other types) was recorded only in the suburban countryside and the stable non-developing rural areas. In this case (comparing with other results), we can agree with Allen et al. (1988), who argue that a negative attitude towards tourism development is influenced by people's opportunity for civic involvement.

The suburban countryside consists of municipalities that have experienced significant changes in the character of the construction, but also in the way of life in these municipalities, which is much closer to the town. Residential functions predominate here, they can partly fulfil recreational functions in suburban tourism, for instance in form of guesthouses (Navrátil et al., 2012). This may also lead to a moderately neutral attitude of their inhabitants towards the development of tourism as it does not play an important role in the development of this group of municipalities (e.g. Stříbrná, 2005).

**Table 2** Contingency Table Analysis

statements		df	p-value	Monte Carlo p-value (conf. int.)
he/she decides about his/her life	16.923	16		0.384 (0.371;0.396)
he/she is independent	19.302	16		0.247 (0.236;0.258)
he/she prefers family life	32.168	16		<b>0.008</b> (0.006;0.010)
he/she thinks that village should help its inhabitants	22.697	16		0.109 (0.101;0.151)
he/she likes to keep learning himself	28.197	16	<b>0.030</b>	
he/she thinks about the future	15.197	16		0.507 (0.4995;0.520)
he/she likes taking risks	29.932	16	<b>0.018</b>	
he/she does sports actively	48.175	16	<b>0.000</b>	
he/she worries about the future	17.150	16	0.376	
he/she meets with neighbours	19.893	16	0.225	
he/she likes fishing	40.394	16	<b>0.001</b>	
he/she prefers to be alone	55.111	16	<b>0.000</b>	
he/she deals with public activities	73.351	16	<b>0.000</b>	
he/she likes DIY	64.390	16	<b>0.000</b>	
he/she has a relation to soil	58.477	16	<b>0.000</b>	
<b>he/she positively perceives holidaymakers/visitors</b>	38.048	16	<b>0.001</b>	

Source: own processing in SPSS SW

The remaining types of municipalities differ in their attitudes towards visitors statistically significantly, but they are associated with a predominant positive relationship with visitors. There is probably no municipality with intensive use of mass forms of tourism in the sample which would affect the living and social environment of the site. Thus, the respondents of

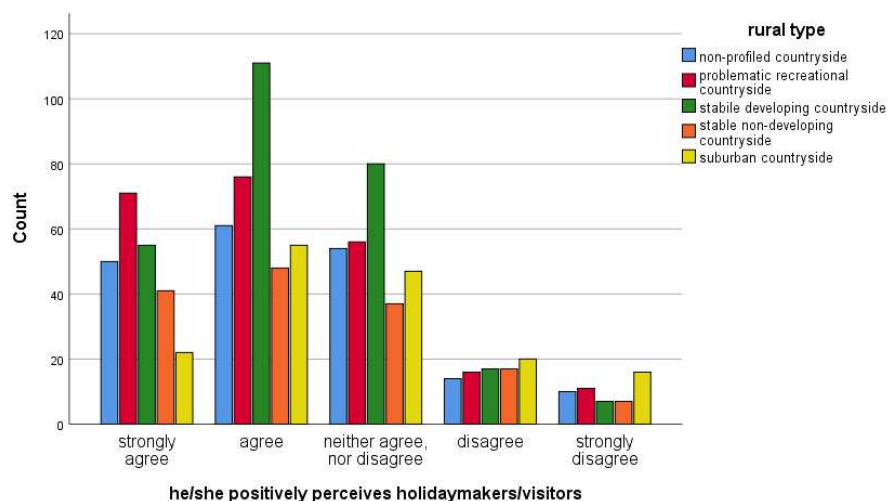
these groups of municipalities have no negative experience with the intensive use of their territory by tourism, touristification and other negative phenomena resulting from excessive tourism intensity. Recreational use prevails in the form of second housing and "soft" forms of rural tourism (agro-tourism, tourism, etc.).

**Table 3** Respondents' attitudes to visitors/holidaymakers according to the Czech rural typology (% in particular type of municipalities)

type	strongly agree	agree	neither agree nor disagree	disagree	strongly disagree
non-profiled countryside	26.5	32.3	28.6	7.4	5.2
problematic recreational countryside	30.9	33.0	24.3	7.0	4.8
stable developing countryside	20.4	41.1	29.6	6.3	2.6
stable non-developing countryside	27.3	32.0	24.7	11.3	4.7
suburban countryside	13.8	34.4	29.4	12.5	9.9

Source: own processing in SPSS SW

**Figure 3** Respondents' attitudes towards visitors/holidaymakers according to rural typology



Source: own processing in SPSS SW

Recreational houses can be found in almost every rural village, with a higher concentration in mountainous and sub-mountainous areas (Vystoupil et al., 2006) and in areas defined as internal peripheries (Musil and Müller, 2008). Owners of these properties usually seek peace, which is in a certain sense contrary to mass tourism. They usually have positive neighbourly ties with local residents. In addition, the owners of second houses have in many cases preserved the preservation of a number of rural settlements, notably in uninhabited areas due to the expulsion of German population after the World War II and in the population losing areas where the outflow of young people was first caused by socialist industrialization and later administrative measures forming the settlement system (Perlín et. al., 2010; Horáková and Fialová, 2012).

### Assessment of the municipality by its respondents

Looking at the evaluation of tourism support by the municipalities, irrespective of their affiliation to individual types of rural typology (Tab. 4), we can find a positive correlation of tourism support with localization factors (nice nature, healthy air, healthy environment, forest existence, realization factors, available services, sports opportunities, good connections with the city, better water than in the city, available medical care, the possibility to buy daily goods, the possibility of free time) as well as selective factors (it is safe, who wants to do business will surely find the opportunity, good neighbourly relations, the opportunity to find a job ...).

**Table 4** Correlation between tourism support by municipality and its other characteristics

statements	Spearman's Rho
It is safe here.	0.015
You can use the public library and the web.	0.226**
People understand each other.	0.142**
There are opportunities to do sports.	0.378**
Traditions are supported.	0.246**
There are good conditions for young people to start their lives.	0.272**
Those who want to do business find an opportunity here.	0.320**
There is affordable housing here.	0.133**
Services are available here.	0.277**
It is close to attractive nature.	0.111**
There is a good connection with the city.	0.233**
There is better water than in the city.	0.187**
There is healthy air.	0.195**
Medical care is available here.	0.289**
There is a healthy environment.	0.260**
There are good relations among neighbours.	0.130**
It is possible to build family houses here.	0.061
There is the possibility to buy good for daily use.	0.252**
There are forests in the neighbourhood	0.071*
I can find a job.	0.300**
There is enough space for self-realization.	0.292**

Note: \*\* statistically significant correlation on the 0.01 level,

\* statistically significant correlation on the 0.05 level.

Source: own processing in SPSS SW

The municipalities' rating by respondents according to rural typology (Tab. 5) shows statistically significant differences of individual types of municipalities for almost all characteristics, except for the opinion on the correspondence in the inhabitants' communication (people understand themselves) and good relations among neighbours.

Respondents' opinions on whether the municipality supports tourism in its territory are more different in comparison with their personal attitudes within individual groups of

municipalities. Residents of municipalities with problematic recreational countryside (more than 40% of respondents in this group expressed a certain degree of disagreement) and suburban countryside (36.9%) believe that tourism is not supported in their communities. The largest support for tourism by the municipality is declared by the inhabitants of stable developing countryside (60.7%) and non-profiled countryside (59.3%).

**Table 5** Contingency Table Analysis

statements	$\chi^2$	df	p-value	Monte Carlo p-value (conf. int.)
It is safe here.				<b>0.023</b> (0.019;0.027)
You can use the public library and the web.	133.038	20	<b>0.000</b>	
People understand each other.				0.226 (0.215;0.236)
There are opportunities to do sports.	190.082	20	<b>0.000</b>	
Traditions are supported.	142.573	20	<b>0.000</b>	
There are good conditions for young people to start their lives.	129.189	20	<b>0.000</b>	
Those who want to do business find an opportunity here.	115.251	20	<b>0.000</b>	
There is affordable housing here.	76.451	20	<b>0.000</b>	
Services are available here.	204.683	20	<b>0.000</b>	
It is close to attractive nature.				<b>0.009</b> (0.007;0.110)
There is a good connection with the city.	236.539	20	<b>0.000</b>	
There is better water than in the city.				<b>0.013</b> (0.010;0.015)
There is healthy air.				<b>0.004</b> (0.002;0.006)
<b>Tourism is supported.</b>	119.009	20	<b>0.000</b>	
Medical care is available here.	161.850	20	<b>0.000</b>	
There is a healthy environment.				<b>0.007</b> (0.005;0.009)
There are good relations among neighbours.				0.071 (0.064; 0.077)
It is possible to build family houses here.	113.051	20	<b>0.000</b>	
There is the possibility to buy good for daily use.	348.485	20	<b>0.000</b>	
There are forests in the neighbourhood				<b>0.000</b>
I can find a job.	169.374	20	<b>0.000</b>	
There is enough space for self-realization.	82.972	20	<b>0.000</b>	

Source: own processing in SPSS SW

**Table 6** Respondents' attitudes to tourism support according to rural typology (% in the type of municipalities)

type	strongly agree	agree	neither agree, nor disagree	disagree	strongly disagree
non profiled countryside	34.4	24.9	20.1	9.5	11.1
Problematic recreational countryside	15.2	16.1	27.8	20.9	20.0
Stable developing countryside	29.6	31.1	28.5	8.9	1.9
Stable non-developing countryside	25.3	17.3	30.7	22.0	4.7
Suburban countryside	15.0	22.5	25.6	20.6	16.3

Source: own processing in SPSS SW

The municipalities of problematic recreational countryside represent small municipalities by population and also by their size with a very high ageing index and the associated higher value of the economic burden index. Compared with other types, they also report a high proportion of commuters to places outside the village and a high proportion of those employed in the primary sector. In this group, almost 70% of family houses are used for recreation. With regard to the population size of these municipalities, and their unsatisfactory human and social capital and small municipal budgets, it is probably very problematic to support tourism development and tourism prevails here in the form of second houses.

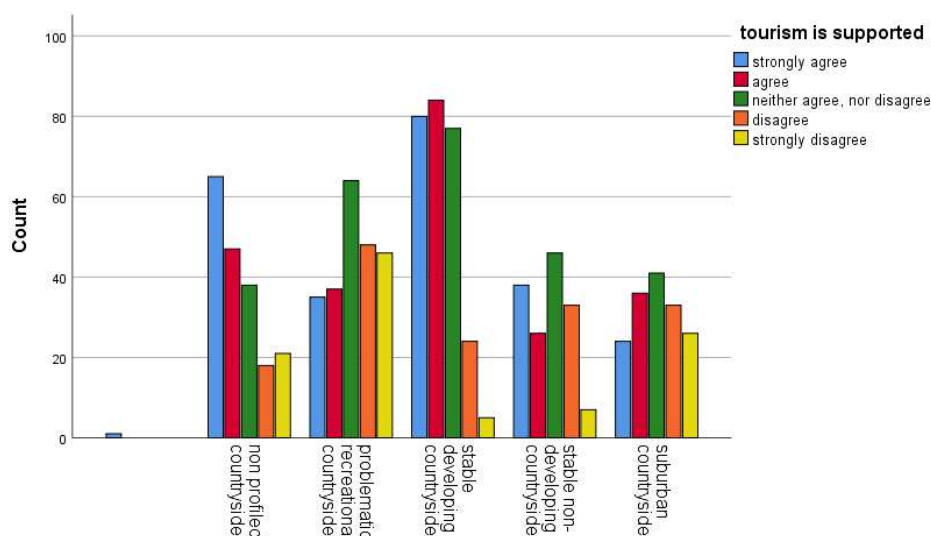
The municipalities of this group also showed a high chronological average of net migration over the period 2001-2012, which could indicate, for example, the change in the use of some second houses from recreation towards permanent housing or, for example, some manifestations of amenity migration (Bartoš et. al., 2011; Sutherland, 2012). This corresponds to a change in the population development in the municipalities of this group, which in the period 1991-2001 decreased by an average of 8%, while in the decade 2001-2011 increased by 3%. In this group, however, the lowest building activity was recorded both in the period 1991-2001 and in 2001-2011. It also shows the lowest share of persons employed in selected service sectors (accommodation and catering), the lowest number of collective accommodation establishments, the lowest share of households with Internet access and the worst disposal of basic services and technical infrastructure from all rural types, which can limit further tourism development (Macbeth et al. 2004). For this reason, it is marked as problematic recreational countryside. These types of municipalities occur almost exclusively in the Czech part.

Suburban communities, as mentioned above, have seen significant changes in the character of their building construction, but in particular in their way of life, which is much closer to the urban one. Residential functions predominate in them, and in part they can fulfill a recreational function in suburban tourism. This is also to some extent the predominant views of their inhabitants on "unsupported" tourism.

The stable developing countryside consists of larger municipalities by population, characterized by high population density, building density and relatively favorable age structure. These municipalities are located predominantly in the Moravian part of the state, then in the Vysočina and Pardubice regions. These are municipalities with the highest share of employees per employed persons and average employer share, the lowest share of those employed in the primary sectors, but also the highest share of commuters to places outside

their village. Municipalities of this type have typically above-average shares of natives, believers, and married people, indicating social stability.

**Figure 4** Respondents' attitudes to tourism support according to rural typology



Source: own processing in SPSS SW

This group of municipalities also recorded intensive construction in 1991-2011, as well as population growth (an average of 7%) and migration gains. The group shows the lowest share of unoccupied houses and homes used for recreation. In terms of the proportion of households connected to the Internet, service facilities and basic technical infrastructure, this group can be described as above-average. Nevertheless, respondents of this type of municipality declare almost two-thirds of the support for the development of tourism by the municipalities, which can correspond to reality (due to their facilities and stability), as tourism is generally considered as one of the mechanisms of economic development of rural municipalities. It corresponds to the idea of the best tourism development conditions in areas with diversified economy (Hall et al., 2004).

The non-profiled countryside consists of smaller populations, but by area larger villages with worse accessibility which are located mainly in the border areas of South Bohemia, West Bohemia and the Jeseníky regions. Compared to other types, the municipalities in this group are characterized by a relatively favorable age structure, low education, low share of believing population, the lowest share of married people and a lower share of natives - low social stability and quality of human capital. These municipalities are made up mostly of more local parts. The structure of employed people is dominated by employees. The share of employers (who are potential creators of new jobs) in the total number of employees is the lowest in this group. The proportion of family houses is also lower. Compared with other groups, no

significant building activity was recorded either in the 1991-2001 period or in 2001-2011. Regarding the population, this group of municipalities stagnated between 1991 and 2001, with an average population growth of 5% in 2001-2011 due to migration gains. These are areas where there has been an intense population change in the past, which has negatively affected both social stability and human capital. The availability of basic services and technical infrastructure can be considered below average in this group. The increase in the population over the last decade, together with the favorable share of recreational areas and the intensive use of these areas by mass forms of tourism, as well as a relatively favorable age structure, indicate the potential for further development (with appropriately chosen regional development tools). However, the low level of education and the low share of employers are a certain handicap.

### **Profile of rural inhabitants**

Seeking for answers to the question of how the typical rural inhabitants look and whether the inhabitants with different self-perceptions live in different types of rural municipalities (Hypothesis 3), CATPCA and cluster analysis were used. Is it possible to identify different types of rural population on the basis of their self-assessment and the evaluation of the community they live in? And how far does the rural typology (made from "hard" data) coincide with the profile of the rural inhabitant (obtained by the analysis of "soft" data)?

Using the Multidimensional Scaling approach allows scaling variables at different levels. Categorical variables are optimally quantified within the specified dimensionality. It is also possible to model non-linear relations between variables.

In the case of self-assessment of respondents, CATPCA led to a reduction of the dimension in the data when the original 16 ordinal variables (the last question was excluded for low frequencies) received 5 main components, which account for 59.5% of the total variability of the set. Component loadings of individual variables are contained in Tab. 7. Individual components - dimensions - can be perceived as certain types or characters of personality that can be described roughly as follows: 1 – active family type; 2 – active sportsman; 3 – engaged DIY guy, 4 – independent, decisive; 5 – pessimist, loner.

Tab. 7 shows a positive relationship to holidaymakers and visitors in an active family type, while the pessimist, and loner, has a rather ambivalent relationship.

The values of the component scores of self-evaluation of individual respondents then served as input variables for cluster analysis to reveal typical groups of Czech rural inhabitants. Using the K-means method, respondents were divided into 6 clusters. The number

of clusters was estimated by the Ward method. The fact that all five components are statistically significant in the distribution of respondents to clusters is shown in Tab. 8.

**Table 7** Component loadings

statements	components				
	1	2	3	4	5
he/she decides about his/her life	<b>0.583</b>	0.105	-0.269	<b>0.571</b>	0.085
he/she is independent	<b>0.617</b>	0.113	-0.190	<b>0.559</b>	0.095
he/she prefers family life	<b>0.640</b>	-0.259	-0.172	-0.094	0.141
he/she thinks that a village should help its inhabitants	<b>0.541</b>	-0.277	-0.274	-0.035	0.026
he/she likes to keep learning himself	0.348	<b>0.601</b>	-0.167	-0.303	0.238
he/she thinks of the future	<b>0.551</b>	0.227	-0.352	-0.231	0.311
he/she likes to take risks	-0.044	<b>0.757</b>	0.044	0.010	-0.027
he/she actively does sports	0.075	<b>0.792</b>	-0.103	-0.118	-0.049
he/she is worried by the future	0.211	-0.327	0.129	-0.347	<b>0.496</b>
he/she meets with neighbours	<b>0.565</b>	-0.200	0.143	-0.050	<b>-0.451</b>
he/she likes fishing	0.031	0.373	<b>0.506</b>	0.201	-0.073
he/she likes to be alone	-0.112	0.013	<b>0.550</b>	0.309	<b>0.434</b>
he/she deals with public activities	0.408	0.355	<b>0.507</b>	-0.156	-0.037
he/she likes DIY	0.479	-0.049	<b>0.602</b>	-0.028	0.055
he/she has a relation to the soil	<b>0.594</b>	-0.270	<b>0.429</b>	-0.092	-0.027
he/she <b>positively perceives holidaymakers/visitors</b>	<b>0.579</b>	0.060	-0.031	-0.165	<b>-0.447</b>

Source: own processing in SPSS SW

**Table 8** Clustering of component scores – Analysis of Variance

components	cluster		error			
	Mean square	df	Mean square	df	F	p-value
1 (active family type)	86.541	5	0.570	993	151.851	0.000
2 (active sportsman)	103.781	5	0.483	993	214.655	0.000
3 (engaged DIYer)	88.966	5	0.558	993	159.414	0.000
4 (independent, decisive)	77.690	5	0.615	993	126.356	0.000
5 (pessimist, loaner)	85.144	5	0.577	993	147.481	0.000

Source: own processing in SPSS SW

Rural residents are usually not sharply defined types (Ap and Crompton, 1998; Easterling, 2005; Lankford and Howard, 1994; Wall and Mathieson, 2006). Detailed analysis of the individual clusters and their mutual comparison showed that all clusters significantly differ statistically in all dimensions. In cluster 1, there is a population dominated by "independent, determined" residents, not doing traditional work at home and reluctant to take risk, i.e.



people who are actively employed and no longer have enough time for hobbies. To a certain extent, this corresponds to a weaker link to family and family values.

Cluster 2 consists of exclusively "traditional" people – with relationships to family, community, land and other values, and ready to take risks. We could label these people as "traditional active country people". The relationship with family values and willingness to take risks is the strongest in this cluster. Cluster 3 forms, compared to the previous cluster, people who are rather "staid", reluctant to take risks, pro-family, devoted to domestic work and DIY, i.e. relying mainly on themselves. We could label this type of rural population as "traditional passive villagers".

**Table 9** Shares of individual types of inhabitants in municipalities according to rural typology (%)

municipality type	clusters (inhabitants)					
	1	2	3	4	5	6
stable developing countryside	22.2 (37.3)	9.6 (18.3)	20.4 (29.7)	11.9 (22.2)	13.3 (23.1)	22.6 (28.9)
stable non-developing countryside	12.0 (11.2)	15.3 (16.2)	22.7 (18.4)	14.7 (15.3)	17.3 (16.7)	18.0 (12.8)
problematic recreational countryside	14.8 (21.1)	15.2 (24.6)	12.2 (15.1)	11.7 (18.8)	14.8 (21.8)	31.3 (34.1)
non-profiled countryside	11.1 (13.0)	17.5 (23.2)	18.5 (18.9)	17.5 (22.9)	22.8 (27.6)	12.7 (11.4)
suburban countryside	17.5 (17.4)	15.6 (17.6)	20.6 (17.8)	18.8 (20.8)	10.6 (10.9)	16.9 (12.8)

Note: The first value represents the frequency within a given type of municipality, the value in brackets, the frequency within a given cluster.

Source: own processing in SPSS SW

Persons who can be termed "extroverts" (non-family, social, to some extent intolerant, but engaged, ready to take risks) prevail in Cluster 4. This type of rural inhabitant is characterized by a high degree of individualism. People dominating Cluster 5 can be described as "introverts" (pessimistic, solitary DIYers, little interest in family and traditional values). The last cluster can be characterized as "passive or resigned". The distribution of individual types of rural inhabitants in individual types of municipalities according to the above mentioned rural typology is presented in Tab. 9.

Through the clusters, there predominate the characteristics of rural areas as a space where people are more tied to the place where they were born, indicating a keeping of traditions and different ways of life into which they have been born. It is passed down from generation to generation and is difficult to teach. It is a guarantee of continuity of traditions. Those types of

municipalities, in which certain problems are manifested, also face a lower quality of human and social capital, i.e. with a higher proportion of persons belonging to Clusters 3 and 5.

The high percentage of people who like to decide on their lives can be perceived as being traditionally used in the country to rely on their abilities and decision-making about themselves, their own homes and their economies. In the clusters of progressive people, with the younger average age of the population, there is not only self-confidence and decision-making, but also sporting activities which are stronger than in clusters where the older population is. Lower sports activity can be explained because people in the country have enough natural movement at work, and by work around the house and in gardens. Therefore, so they do not have to actively do sport like people in the city.

### **Respondents' perception of their municipality**

In searching for answers to the question as to how rural people perceive their village and the extent to which their perception is consistent with rural typology (Hypothesis 4), CATPCA and cluster analysis were again used. Can the different types of rural communities be identified based on their perception by local residents? And how far does the rural typology (made from "hard" data) coincide with the typology of the countryside (obtained from the analysis of "soft" data)?

In the case of municipalities' assessments by their inhabitants, CATPCA led to the reduction of the dimension in the data when the original 22 ordinal variables (the last question was excluded for low frequencies) resulted in 3 main components explaining 47.9% of the total variability of the set. For better interpretation of the components, the varimax rotation method was used in this case. Component loads of individual variables are contained in Tab. 10. Individual components - dimensions - can be seen as certain characteristics of municipalities important for their inhabitants, which can be described roughly as follows: 1 – socio-economic conditions; 2 – natural environment; 3 – social capital.

The variable "tourism is supported" is mostly correlated to the component of the socio-economic condition, which is quite logical since appropriate socio-economic conditions (realization factors) are required for a development of tourism services and an overall support of tourism in a given location. It is also positively correlated to the natural environment (locational factors).

**Table 10** Component loadings

statements	components		
	1	2	3
It is safe here.	-0.122	0.290	<b>0.451</b>
You can use the public library and the web.	<b>0.594</b>	0.023	-0.158
People understand each other.	0.115	0.067	<b>0.781</b>
There are opportunities to do sports.	<b>0.698</b>	0.121	0.032
Traditions are supported.	0.211	<b>0.344</b>	0.332
There are good conditions for young people to start their lives.	<b>0.691</b>	-0.208	0.340
Those who want to do business find an opportunity here.	<b>0.696</b>	-0.193	0.246
There is affordable housing here.	<b>0.545</b>	-0.205	0.324
Services are available here.	<b>0.814</b>	-0.005	0.008
It is close to attractive nature.	0.075	<b>0.693</b>	0.049
There is a good connection with the city.	<b>0.632</b>	-0.034	-0.168
There is better water than in the city.	-0.044	<b>0.644</b>	0.167
There is healthy air.	-0.063	<b>0.756</b>	0.201
<b>Tourism is supported.</b>	<b>0.571</b>	0.174	0.041
Medical care is available here.	<b>0.677</b>	0.087	-0.148
There is a healthy environment.	0.052	<b>0.763</b>	0.205
There are good relations among neighbours.	0.028	0.250	<b>0.765</b>
It is possible to build family houses here.	<b>0.430</b>	-0.126	0.224
There is the possibility to buy good for daily use.	<b>0.685</b>	0.149	-0.033
There are forests in the neighbourhood	-0.020	<b>0.671</b>	-0.120
I can find a job.	<b>0.638</b>	-0.237	0.239
I can realize myself in my free time.	<b>0.480</b>	0.189	0.169

Source: own processing in SPSS SW

The values of the component scores served as the input variables for the cluster analysis, which was to reveal the typical villages of the Czech countryside from the point of view of their inhabitants. The K-means method was used for clustering. Villages in the sample were divided into five clusters. The number of clusters was estimated by clustering using the Ward method.

By cluster analysis, five groups of municipalities according to the perception of their inhabitants were identified: 1 – a group of municipalities with a high quality natural environment, but insufficient conditions for business, services and possibilities of employment, which may negatively influence the potential development of tourism; 2 – a cluster of municipalities with high quality natural conditions, social capital, leisure opportunities, promotion of traditions and tourism; 3 – a cluster of municipalities where respondents in 10 statements out of a total of 22 expressed predominantly neutral, responses negatively to the issue of tourism support, as well as to statements about entrepreneurial opportunities and opportunities to find employment, but positively evaluated interpersonal relationships; 4 – municipalities with a high quality natural environment, a neutral attitude towards the quality of interpersonal relationships, lack of services and opportunities for entrepreneurship; however, where tourism is supported; 5 – a group of municipalities with a

high quality environment, limited possibilities for self-realization of the population and neutral support of tourism.

**Table 11** Share of particular types of municipalities according their inhabitants' perception with respect to rural typology (%)

municipality type (rural typology)	municipality type (respondents' perception)				
	1	2	2	4	5
non-profiled countryside	16.4 (15.2)	43.4 (24.1)	2.6 (6.4)	29.6 (27.2)	7.9 (8.7)
problematic recreational countryside	52.2 (58.8)	13.5 (9.1)	10.0 (29.5)	9.1 (10.2)	15.2 (20.3)
stable developing countryside	1.1 (1.5)	45.9 (36.5)	8.1 (28.2)	20.7 (27.2)	24.1 (37.8)
stable non-developing countryside	20.7 (15.2)	44.0 (19.4)	2.0 (3.8)	27.3 (19.9)	6.0 (5.2)
suburban countryside	11.9 (9.3)	22.5 (10.6)	15.6 (32.1)	20.0 (15.5)	30.0 (27.9)

Note: The first value represents the frequency within a given type of municipality. the value in brackets frequency within a given cluster.

Source: own processing in SPSS SW

Tab. 11 shows the distribution of individual types of municipalities identified according to the perception of respondents within the typology of municipalities obtained by the analysis of "hard data". The Chi-square test ( $p$ -value = 0.000) confirms the statistically significant dependency of the perception of municipalities by their population ("soft" factors) and typology generated by "hard" data analysis. Due to the subjectivity of individual respondents' opinions, it is understandable that different types mingle.

## CONCLUSIONS

This comparison confirms that "hard" and "soft" development factors really affect each other. The development potential of rural municipalities is not only due to their location, infrastructure, size, etc., but human capital and social capital also play a significant role in the quality, activity and viability of the local population. Detailed analysis of the individual clusters and their mutual comparison when seeking profile of rural inhabitants showed that all clusters significantly differ statistically in all dimensions. It confirmed hypotheses 1 and 3. Subsequent evaluation of respondents' perception of their municipality also confirmed the statistically significant dependency of the perception of municipalities by their population ("soft" factors) and typology generated by "hard" data analysis thus confirming hypotheses 2 and 4. Therefore, rural development strategies need to be designed so that both sets of factors are in line with the aim of synergy. The hard localization factors themselves, without supporting the development of soft factors, do not have the desired effect.

The current countryside is characterized by a high growth in recreational (consumer) functions after 1990 (Marsden, 1998; McAreavey and McDonagh, 2010), when the increased

demand for the rural leisure environment in the sense of spending free time (instead of consumption of its goods) was triggered. The process by which local resources are valorised and subsequently transformed into products of consumption is referred to as commodification. In the case of the countryside, Woods (2011) talks about different forms of consumption: consumption of countryside, clean air, unique nature, rural culture, traditions, cuisine and products.

The development of tourism has been a very attractive theme in recent decades and most of the municipalities in the Czech Republic are preparing or developing some tourist attractions. However, tourism is not suitable for every rural area (Binek et al., 2007), because it is a sector that requires significant public and private investment for its high-quality development, and the economic impacts are often uncertain and unstable (e.g. seasonal). It turns out that the importance of tourism for development is in some cases overestimated and the benefits and incomes achieved do not reach the visions of the actors or predominantly serve certain groups only (see e.g. Horáková and Fialová, 2012). Tourism can develop in key sectors only in certain areas, it is mostly complementary activity with limited economic benefits.

Each region, each municipality, each development actor must therefore clearly define what type of development he/she is considering, and what kind of development he/she is aiming for. Recently, endogenous approaches based on the initiation of activity within the local community are promoted (Gursoy et al., 2010) - approaches based on local resources and local conditions that support creativity - BOTTOM - UP approaches, approaches that improve the quality of life in the village and set a new standard of living. A typical example is the use of the LEADER program or the CLLD method.

Well-suited, gentle types of tourism can provide jobs in the countryside to positively influence the regeneration and maintenance of rural, natural and cultural heritage. However, the development of rural tourism should be pursued through the development of specific "non-mass" forms associated with rural actors (agritourism, ecotourism, wine tourism, gastronomy focused on local specialties etc.). An indispensable condition for the sustainable development of tourism in rural areas is the consensus among the actors concerned in this development, especially the acceptance by the local community as show many examples in various European countries (e.g. Haven-Tang and Jones, 2012; Panyik et. al., 2011; Hegarty and Przezborska, 2005).

The real recovery of the countryside (through the development of tourism) relies primarily on its inhabitants, on their activity and entrepreneurship, on the capacities and enthusiasm of representatives of municipalities, on the joint efforts of all rural actors – citizens, the non-profit sector, entrepreneurs, representatives of municipalities and regionalists working within municipalities' areas.

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## WHAT CAN THE LOCATION OF BIOGAS PLANTS TELL US ABOUT AGRICULTURAL CHANGE? A CASE STUDY FROM THE CZECH REPUBLIC

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### Abstract

Facilities for generating renewable energy form important elements in the rural landscape of the Czech Republic. The distribution of these facilities is highly uneven due to various natural and socio-economic factors. In our paper, we are focusing our attention on one of the important facilities for the generation of renewable energy in the Czech Republic; anaerobic digestion (AD) plants. In 2016, more than five hundred AD plants could be found in the country with a total installed capacity of 360 MW. By means of analyses of data on location of individual AD plants, quality of soils, size of agricultural farms (in which majority of AD plants is incorporated) we found that agricultural AD plants in the Czech Republic tend to concentrate in areas with larger agricultural farms and also in areas with average and slightly below average conditions for agricultural activities. Core areas where agricultural AD plants are the most densely located were also identified. In these areas, large farms with AD plants tend to crowd out smaller farms. Pressure to grow maize for ADs significantly competes here with growing of other agricultural crops for food. This finding is in strong contradiction with the official national agricultural policy where support for small farms is systematically emphasized. Core areas with AD plants make a belt that mostly covers sub-mountainous central parts of the Czech Republic where traditional agricultural plants are now significantly being displaced by maize to feed AD plants.

**Keywords:** agricultural AD plants, natural conditions, agricultural geography, size structure of agricultural farms, Czech Republic

### INTRODUCTION

The Czech Republic has seen an enormous increase in the number of anaerobic digestion (AD) plants in the period after the accession to the European Union in 2004. These AD plants are fed by farm or household wastes or energy crops and produce biogas energy that is

transformed into electricity and heat. The current number of these stations, according to the data of the Czech biogas association ([www.czba.cz](http://www.czba.cz)), exceeds five hundred (2016) with a total installed capacity of 360 MW, whereas in 2004 there were only a few units with minimal installed capacity. The biogas plant sector annually generates about 2,000 GWh of electricity from renewable sources. The proportion of renewable energy produced from biogas in the Czech Republic is about one-quarter of the total electricity produced from renewable sources. Biogas alone already generates about 2.8% of total electricity production in the Czech Republic (2014). It is, therefore, a significant source of energy, which in addition to the electricity supplied to the transmission network also generates heat, which is currently used unfortunately only rarely, just for sporadic heating of nearby buildings and to cover the heating needs of the AD plant itself. This limited utilisation of the heat output makes the benefits of these facilities that could considerably support local development, quite limited (Braun, 2007). On the other hand, it is also necessary to state that the impact of the operation of biogas stations on their neighborhoods does not have to be always positive (Szymańska and Chodkowska-Miszczyk, 2011). We can mention that traffic in the proximity to AD plants is often increased due to the necessity to continuously supply input material (Pantaleo et al., 2013), odour leaks from digesters may occur (Park and Novak, 2013), or an inappropriate feedstock could be used (Marcato et al., 2009), which undoubtedly reduces the environmental benefits of produced renewable energy and complicates the lives of local population (Chodkowska-Miszczyk et al., 2017). The problem is therefore in emerging resistance of a part of the local population against the operation of AD plants (Martinat et al., 2013), the perception of biogas as a source of renewable energy (Doci and Gotchev, 2016) or in the general opposition to the localization of energy plants (Frantál et al., 2016).

There is no doubt that AD plants are distributed unevenly within the Czech Republic. Some AD plants process sludge from sewage treatment plants, others process waste from food production. These types of AD are typically located in suburban locations. However, the largest number of stations (more than 300 AD plants) are agricultural AD plants located in the countryside. This type of AD plants should be mostly focused on the energy processing of agricultural wastes, which would otherwise have been left unused. Nevertheless, in the conditions of the Czech Republic, these agricultural AD plants primarily run on intentionally grown green maize. Our earlier studies suggest (Martinat et al., 2013, 2016), that AD plants are associated with a changing structure of sowing areas of agricultural crops in the Czech Republic as a result of the massive use of intentionally grown green maize (currently covering about 230,000 hectares). At the same time there has been a significant reduction of the number of livestock (as a result of cheap imports), which used to consume green maize. A

third observation is the high installed capacity of the biogas stations operating in the Czech Republic (typically 0.7-0.8 MW). For comparison, in neighbouring Germany, where we find about eight thousands of such devices, their average size is significantly smaller and their primary focus on energy processing of agricultural wastes and household wastes is also different. Similar observation can be made in the UK (Styles et al., 2016) or in Poland where AD investments are usually separated from agricultural companies (Budzianowski, 2012, Chodkowska-Miszczyk and Szymańska, 2013). It can be therefore assumed that with such a large installed capacity of the individual stations, there is pressure to change the use of sowing areas near the biogas stations, in order to supply sufficient feedstock to keep the plant running. Connected environmental consequences as for example a higher level of soil erosion (Centeri et al., 2015) while growing maize are obvious. Thus, the aim of this paper is to explore the relationship between the presence of AD plants, farm types and agricultural conditions in the Czech Republic.

It is clear that agricultural biogas stations have a significant potential to influence the quality of life and local development in positive and negative terms (Darnhofer 2005, Plieninger et al., 2006, Martinat and Turečková, 2016). The massive subsidy support of the Government of the Czech Republic for renewable energy, was a consequence of a commitment towards to the European Union of producing 13.5% electricity from renewable sources by 2020 (National Action Plan for Development Renewable Energy, 2010). AD plants have become a significant alternative income for farmers in times when their revenues from traditional agricultural activities are declining. Despite original policy ambitions, it is less clear to what extent AD plants have been an effective tool for limiting the impacts of climate change or for local development support (Doležalová et al., 2009, 2014a, 2014b, Ženka et al., 2016 or Duzi et al., 2017). It is therefore important to research also the attitudes and views of farmers on this significant change in the use of agricultural land (Frantál and Prousek 2016, Silva and Delicado, 2017). This change is related to a pan-European approach to the use of renewable energy resources and the limitation of the use of traditional resources of energy. The theoretical conceptualization of this problem for example can be found in the concept of energy transition (Van der Horst, 2014, Frantál et al., 2014 or Bridge et al., 2016).

The aim of this paper is to explore the relationship between the presence of AD plants, farm types and agricultural conditions in the Czech Republic.

## **THEORETICAL BACKGROUND**

It is clear that the size of agricultural farms significantly influences the decision making of their managements on how to develop economic strategies of particular farms. One of the

more traditional simple answers to this problem could be found in theory on economies of scale that can be traced back to the classic economists of the 18<sup>th</sup> century (Krugman, 1980). Many authors have explored this issue, e.g. agriculture in Germany (Fernandez-Cornejo et al., 1992), the Corn Belt in the USA (Paul et al., 2004) or agriculture in the Central European countries (Gorton and Davidova, 2004). Fewer authors have devoted their endeavour to the theoretical implications that are linked to economies of scale in agriculture (like e.g. Duffy, 2009 or more recently de Roest et al., 2017). De Roest et al. (2017) in their study declare that the size of farms really matters when discussing their necessary diversification.

The size of AD plants is a key factor affecting their economic profitability (Skovsgaard and Jacobsen, 2017). However it is not clear what size of AD plant should be the most beneficial for the host municipality. We know from previous researches that operators of AD plants (usually owners of agricultural farms in the case of the Czech Republic) prefer bigger sized AD plants due to profitability (Martinat et al., 2013). But such decisions are accompanied by much more complicated logistics; large amounts of input material have to be continuously transported to the AD and thus stored) or environmental problems (odour, cleaning of roads etc.). It has to be stressed that large farms (around thousand hectares in the Czech Republic), also have better access to money for investments so their decision making about future activities is more flexible.

As for the hosting municipality where AD plant is located, other factors are important. First of all, it is the suitable location of the AD within a municipality that seems to be of crucial importance (Martinat and Tureckova, 2016). The local population strongly appreciate if the benefits that are generated from local AD plant are shared with them (Soland et al., 2013), e.g. in the form of heat supplies at reasonable prices or in the form of funding for the local community (Klagge and Brocke, 2012). AD plant can be also treated as attraction for tourists that might be beneficial for local entrepreneurs (Upreti and Van der Horst, 2004, Zoellner et al., 2008, Navrátil et al., 2015).

Another concept that offers different perspective while thinking about consequences of biogas energy and local development is a concept of circular economy. Usage of local agricultural and households waste for energy processing that is consumed locally seems to be the most environmentally beneficial way to deal with this issue. A concept is widely discussed for example by Paul et al. (2017) or Pan et al. (2015) who warn that waste that is processed in AD plants should be rather reworded to resource that enables closing the local consumption loop to beneficial circle.

## METHODOLOGY AND DATA

In order to study the specifics of agricultural structures in areas with the intensive operation of agricultural AD plants, we used the data of the Czech Statistical Office related to farm numbers in size categories according to the size of farmed agricultural areas from 2002 and 2010. The first named year determines the period before the beginning of the dynamic growth of the number of AD plants, i.e. prior to the country's accession to the European Union, which meant the start of the supports for renewable energy. The second year mentioned is the last year for which these data were published in a comparable time series. This period is characterized by an intensive transformation of the structures and extent of agriculture in the Czech Republic due to the opening of the internal market for agricultural imports.

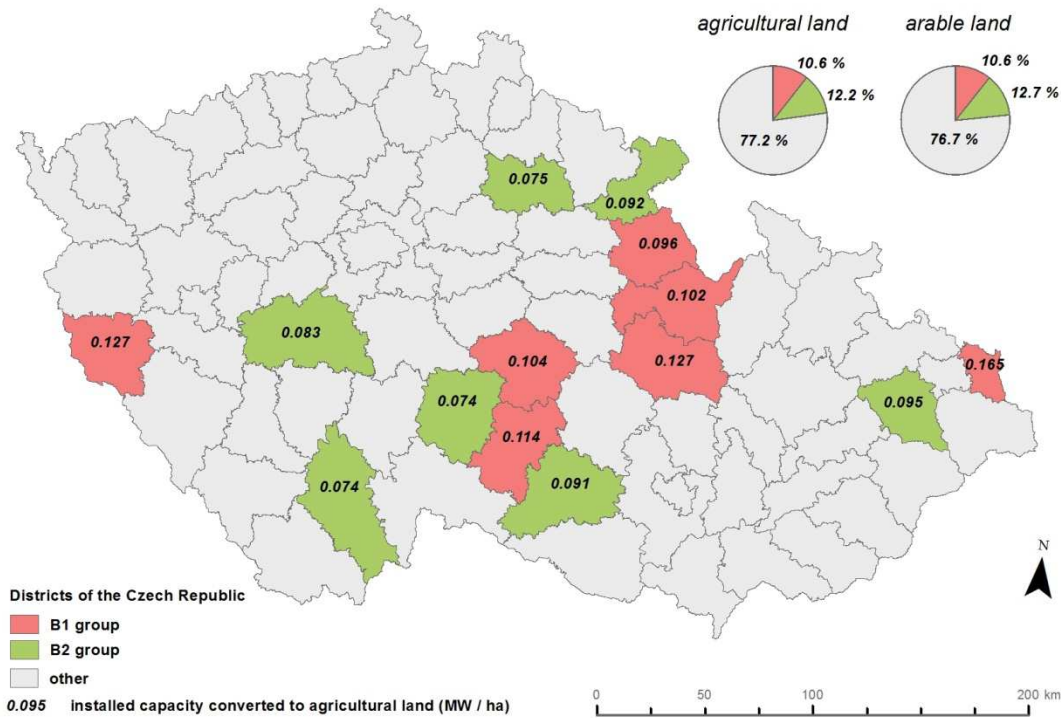
Due to the unavailability of data on the state and development of agricultural activities in the lower territorial units of the Czech Republic (municipalities or municipalities with extended competences), the data on the district level was used for the analyses. In the first step, we grouped data on agricultural AD plants (location, installed capacities) into 77 districts. In this way we identified districts of the Czech Republic, where we suppose hypothetically the greatest impact of these stations on the changes of local agricultural structures. For these calculations, the data related to AD plants originating from the Energy Regulatory Office of the Czech Republic ([www.eru.cz](http://www.eru.cz)) for 2012 (i.e. 243 units with a total installed capacity of 171.4 MW) was used. We were interested in the number of agricultural AD plants and their total installed capacity in individual districts. We suppose that the higher the total installed capacity of agricultural AD plants in the district, the higher the pressure on the changes in agricultural structures should be evident. In order to refine the model and therefore to more accurately identify the area surveyed, the total installed capacity was weighed by the size of the agricultural land in the individual districts. The expected intensity of installed capacity of agricultural AD plants was calculated for the individual districts of the Czech Republic (see Tab. 1 and Fig. 1). These fourteen districts account for approximately one-fifth of the area of the Czech Republic (20.6%), where are distributed 16.1% of agricultural land and 23.3% of arable land on the basis of the results of the last available agricultural census (Agrocensus, 2010). The total installed capacity of the agricultural AD plants in the area is 44.6% of the national total. In terms of numbers, it is 40.7% (99 stations) of the national total in 2012.

**Table 1** Delimitation of areas with significant operation of agricultural AD plants (districts of the Czech Republic)

<i>order of districts with the highest installed capacity of AD plants per hectare of agricultural land</i>	<i>installed capacity converted to agricultural land (MW / ha)</i>	<i>order of districts with the highest installed capacity of AD plants per hectare of agricultural land</i>	<i>installed capacity converted to agricultural land (MW / ha)</i>
group B1		group B2	
Karviná (1)	0.165	Nový Jičín (8)	0.095
Domažlice (2)	0.127	Náchod (9)	0.092
Svitavy (3)	0.127	Třebíč (10)	0.091
Jihlava (4)	0.114	Příbram (11)	0.083
Havlíčkův Brod (5)	0.104	Jičín (12)	0.075
Ústí nad Orlicí (6)	0.102	Pelhřimov (13)	0.074
Rychnov nad Kněžnou (7)	0.096	České Budějovice (14)	0.074

Source: Energy Regulatory Office of the Czech Republic ([www.eru.cz](http://www.eru.cz)), Agrocenzus 2010, own calculations.

**Figure 1** Groups of districts of the Czech Republic (B1, B2) with the most significant operation of agricultural AD plants



Source of data: Energy Regulatory Office of the Czech Republic ([www.eru.cz](http://www.eru.cz)), Agrocenzus 2010, author's processing.

We divided the 14 districts mentioned above into 2 groups of districts in which we assume a different intensity of the impact of agricultural biogas stations on local agricultural structures. Based on the intensity of the installed capacity converted to the area of agricultural land in the district, we created groups B1 (with significant intensity) and groups B2 (with less significant intensity). In the analyses, we compared the groups of districts B1, B2 and B (i.e.  $B = B1 + B2$ ) with the rest of the Czech Republic ( $\Sigma CZ$ ). Individual groups of districts cover a quarter

(B1) and one fifth (B2) of the installed capacity of agricultural AD plants in the Czech Republic. Further, the area outside the area B ( $\Sigma$  OTHER) was also considered (see Tab. 2).

It is evident that, in the context of ongoing structural changes, far more factors are involved in agriculture than just the installation and operation of agricultural biogas stations. At the forefront of these factors, which significantly affect the deployment and transformation of agricultural activities, are the natural conditions with which agriculture is closely linked. It is therefore relatively complicated to decide which changes in agricultural structures can be identified in the territory as a consequence of primary or secondary factors and whether the primary driving force of change were natural conditions or other factors, such as agricultural biogas stations.

**Table 2** Basic characteristics of groups of districts of the Czech Republic based on intensity of operation of agricultural AD plants

<i>Groups</i>	<i>total area</i>		<i>agricultural land</i>		<i>arable land</i>	
	<i>abs. (ha)</i>	<i>rel. (%)</i>	<i>abs. (ha)</i>	<i>rel. (%)</i>	<i>abs. (ha)</i>	<i>rel. (%)</i>
B1	757,169	9.6	370,818	10.6	268,082	10.6
B2	870,399	11.0	423,325	12.2	318,698	12.7
$\Sigma$ B	1,627,568	20.6	794,143	22.8	586,780	23.3
$\Sigma$ OTHER	6,259,044	79.4	2,689,355	77.2	1,927,068	76.7
$\Sigma$ CZ	7,886,612	100.0	3,483,498	100.0	2,513,848	100.0

Source: Source: Energy Regulatory Office of the Czech Republic ([www.eru.cz](http://www.eru.cz)), Agroczensus 2010, own calculations.

The individual districts of the Czech Republic were grouped according to the natural conditions for farming, which serve to uncover the trends caused regional differentiation of natural conditions. The natural conditions are represented in this case by the average price of agricultural land, which was calculated for each of the districts as the arithmetic average of agricultural land prices for the individual cadastral areas of the district. Agricultural land prices that we used can be termed as administrative ones (not market prices), which were calculated only on the basis of local natural conditions (according to the soil ecological units), socio-economic factors were not taken into account. The database of so-called official farm land prices is available as an annexe to the Decree No. 463/2002 Coll., which establishes a list of cadastral territories with assigned average administrative basic prices of agricultural parcels in the Czech Republic (Mze, 2002). The selected methodological approach slightly diminishes the existing inter-district differences of the natural and agricultural conditions, but for our purposes, the choice of this indicator seems not to be a problem. The districts of the Czech Republic (77 units) were at first sorted according to the average price of agricultural land in the district and further grouped into 7 groups (see Tab. 3 and Fig. 2) which are representing



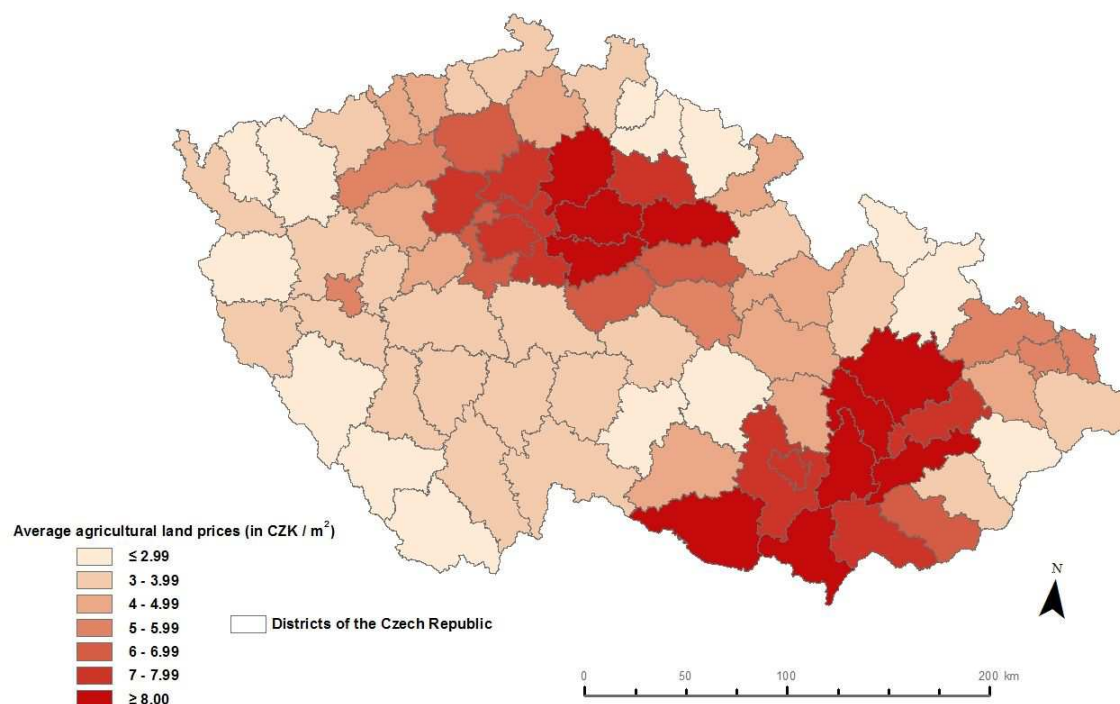
different natural conditions for agricultural management. The basic size characteristics of each from groups of districts are illustrated in Tab. 4. It is evident that the individual groups of districts have a different "agricultural" size due to the unbalanced natural conditions in the Czech Republic. If we try to generalize the natural conditions found in the groups of districts, then one-sixth of the agricultural land is situated in sub-mountainous areas and almost one-third of it is in mountainous conditions. By contrast, more than a quarter of farmland is distributed in the most fertile areas. Taking into consideration that the average official price of agricultural land is 4.73 CZK/m<sup>2</sup> (0.18 Euro/m<sup>2</sup>) according to the authors' calculations in the Czech Republic (this price differs from the information of the Czech Ministry of Agriculture that the average land price in the Czech Republic is 5.24 CZK/m<sup>2</sup>, however for the other calculations, this difference is insignificant), then in the below-average conditions almost two-thirds of the agricultural land could be found.

**Table 3** Groups of districts of the Czech Republic according to natural conditions for agriculture

$\leq 2.99 \text{ CZK} / \text{m}^2$ ( $\leq 0.11 \text{ Euro} / \text{m}^2$ )	Jablonec nad Nisou, Prachatice, Český Krumlov, Klatovy, Sokolov, Bruntál, Jihlava, Jeseník, Vsetín, Žďár nad Sázavou, Semily Karlovy Vary, Tachov, Trutnov
$3-3.99 \text{ CZK} / \text{m}^2$ ( $0.11-0.15 \text{ Euro} / \text{m}^2$ )	Cheb, Ústí nad Labem, Domažlice, Děčín, Jindřichův Hrádek, Pelhřimov, Frýdek-Místek, Příbram, Strakonice, Šumperk, Liberec, Chomutov, Rychnov nad Kněžnou, Rokycany, Havlíčkův Brod, Plzeň-jih, Písek, České Budějovice, Plzeň-sever, Zlín, Benešov, Tábor
$4-4.99 \text{ CZK} / \text{m}^2$ ( $0.15-0.19 \text{ Euro} / \text{m}^2$ )	Beroun, Blansko, Nový Jičín, Ústí nad Orlicí, Náchod, Teplice, Rakovník, Svitavy, Most, Třebíč, Česká Lípa
$5-5.99 \text{ CZK} / \text{m}^2$ ( $0.19-0.23 \text{ Euro} / \text{m}^2$ )	Plzeň-město, Karviná, Ostrava, Opava, Chrudim, Louny
$6-6.99 \text{ CZK} / \text{m}^2$ ( $0.23-0.27 \text{ Euro} / \text{m}^2$ )	Litoměřice, Praha-západ, Kutná Hora, Pardubice, Uherské Hradiště
$7-7.99 \text{ CZK} / \text{m}^2$ ( $0.27-0.31 \text{ Euro} / \text{m}^2$ )	Praha, Kladno, Praha-východ, Mělník, Brno-město, Brno-venkov, Přerov, Hodonín, Jičín
$\geq 8 \text{ CZK} / \text{m}^2$ ( $\geq 0.31 \text{ Euro} / \text{m}^2$ )	Prostějov, Znojmo, Olomouc, Vyškov, Břeclav Mladá Boleslav, Kroměříž, Nymburk, Kolín, Hradec Králové

Source: Annex to the Decree No. 463/2002 Coll. (prices of agricultural lands).

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

**Figure 2** Districts of the Czech Republic according to natural conditions for agriculture based on the administrative average prices of agricultural land

Source: Annex to the Decree No. 463/2002 Coll. (prices of agricultural lands).

**Table 4** Groups of districts of the Czech Republic according to natural conditions for agriculture (according to administrative average value of agricultural land)

<i>price of agricultural land</i>	<i>total area</i>		<i>agricultural land</i>		<i>arable land</i>	
	<i>abs. (ha)</i>	<i>rel. (%)</i>	<i>abs. (ha)</i>	<i>rel. (%)</i>	<i>abs. (ha)</i>	<i>rel. (%)</i>
≤ 2.99 CZK / m <sup>2</sup> (≤ 0.11 Euro / m <sup>2</sup> )	1,700,609	21.6	575,475	16.5	252,521	10.0
3-3.99 CZK / m <sup>2</sup> (0.11-0.15 Euro / m <sup>2</sup> )	2,558,452	32.4	1,075,235	30.9	700,368	27.9
4-4.99 CZK / m <sup>2</sup> (0.15-0.19 Euro / m <sup>2</sup> )	1,027,204	13.0	459,390	13.2	343,799	13.7
5-5.99 CZK / m <sup>2</sup> (0.19-0.23 Euro / m <sup>2</sup> )	417,237	5.3	208,417	6.0	172,516	6.9
6-6.99 CZK / m <sup>2</sup> (0.23-0.27 Euro / m <sup>2</sup> )	440,113	5.6	225,690	6.5	195,022	7.8
7-7.99 CZK / m <sup>2</sup> (0.27-0.31 Euro / m <sup>2</sup> )	723,206	9.2	356,211	10.2	319,825	12.7
≥ 8 CZK / m <sup>2</sup> (≥ 0.31 Euro / m <sup>2</sup> )	1,019,791	1.9	583,080	16.7	529,797	21.1
Σ CZ	7,886,612	100.0	3,483,498	100.0	2,513,848	100.0

Source: Czech Office of Cadastre and Surveying ([www.cuzk.cz](http://www.cuzk.cz)), Agrocensus 2010, Annex to Decree No. 463/2002 Coll. (prices of agricultural lands).

<sup>1</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

## RESULTS

### Size categories of agricultural farms

A nationwide overview of the size of the farms in four size categories (less than 9.99 ha, 10-

44.9 ha, 50-99.9 ha and more than 100 hectares of agricultural land) is provided in Tab. 5. In 2010 two thirds of farms in the Czech Republic were below the size of 9.99 hectares of agricultural land, a one fifth was in the range of 10-49.99 hectares and only about a tenth of farms were larger than 100 hectares. This deployment recorded interesting shifts over the studied period. It is necessary to emphasize that the total number of farms in the period 2002-2010 decreased by 17% to 44.5 thousand, corresponding to the drop in the number of the smallest farms (up to 9.99 hectares), which decreased by almost one fifth. The reduction of the number has occurred also in the case of farms with an area of 10-49.99 hectares, by about 8%. Clearly, there are shifts in favour of larger farms, especially in the case of farms with an area of 50-99.99 hectares (up to almost one-third), a lower intensity of growth is evident for hundred-hectare farms and larger farms (about 9%). It can be said that there is a dynamic concentration of farmed agricultural land in larger farms with 50 hectares or more at the expense of the smallest farms whose economic activities are economically less efficient. Despite this fact, the average size of the farm is gradually decreasing.

**Table 5** Numbers of farms in the Czech Republic in 2002 and 2010 in the size categories of agricultural land

<i>ha</i>	<i>2002</i>		<i>2010</i>		<i>index of change</i>	<i>the difference (2010-2002)</i>
	<i>number of farms</i>	<i>the share of farms in the total number of farms in the Czech Republic %</i>	<i>number of farms</i>	<i>the share of farms in the total number of farms in the Czech Republic %</i>	<i>year 2002 = 100</i>	<i>the share of farms in the total number of farms in the Czech Republic</i>
≤ 9.99	38,162	71.1	30,840	66.4	80.8	-4.7
10-49.99	9,717	18.1	8,957	19.3	92.2	+1.2
50-99.99	1,759	3.3	2,310	5.0	131.3	+1.7
≥ 100	4,029	7.5	4,370	9.4	108.5	+1.9
Σ CZ	53,667	100.0	46,447	100.0	86.6	

Source: Czech Statistical Office, own calculations.

For a more detailed analysis of the size of agricultural farms with regard to natural conditions and the occurrence of AD plants, we will deal with the individual size categories of agricultural holdings separately. First, we will focus on the smallest farms with an area of 9.99 hectares of agricultural land. As mentioned above, these farms account for two-thirds of the number of farms in the Czech Republic and are the most numerous category. These are in particular small farmers who have restituted their land and, in particular, family farms managing limited areas. It is understandable that in this category of farms there is the most significant fluctuation of the number of farms due to the inclusion of very small, economically hardly sustainable farms, which very often emerge as well as disappear. However, let us now take a look at the structure of this category of the smallest agricultural holdings.

### Farms with less than 9.99 hectares of agricultural land

As can be seen from Tab. 6, in terms of changing conditions for agricultural management, there is a certain differentiation in both the time horizons observed. While in the case of the mountain, foothill areas and areas with average and slightly above average natural conditions, the share of these smallest farms in their total number is in very balanced proportions (61-63%); in the case of the most lucrative areas, this is a higher proportion (about 75%). A similar distribution is also visible for the 2000 starting year, so we can state a certain higher degree of stability for the smallest farms in the most fertile areas. This hypothesis is supported by a much more intensive decline of the smallest farms in the examined intervals in mountain and sub-mountain areas than in more fertile areas. The only category where the number of farms has stagnated is precisely these fertile areas. It can be said that from the point of view of the internal structure of these small farms, farms move from areas less suited to farming to more suitable areas. This assumption is related to the low efficiency of farming these small farms in mountain and foothill areas.

**Table 6** Distribution of farms in size 9.99 and less hectares in the Czech Republic in 2002 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK}^1 / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	6,955	5,298	76.2
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	9,871	7,700	78.0
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	4,621	3,298	71.4
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	1,651	1,514	91.7
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	2,024	1,570	77.6
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	4,878	4,915	100.8
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	8,162	6,545	80.2
$\Sigma \text{ CZ}$	38,162	30,840	80.8

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

**Table 7** Distribution of farms in size 9.99 land and less in the Czech Republic in 2002 and 2010 according to intensity of operation of agricultural AD plants

<i>groups</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	3,729	2,489	66.7
B2	3,405	2,674	78.5
$\Sigma \text{ B}$	7,134	5,163	72.4
$\Sigma \text{ OTHER}$	31,028	25,677	82.8
$\Sigma \text{ CZ TOTAL}$	38,162	30,840	80.8

Source: Czech Statistical Office, own calculations.

In areas with very intensive operation of agricultural biogas stations (area B1) we find a relatively lower representation of the smallest farms (less than 9.99 hectares), and particularly in area B1 there are noticeable very strong drops in their numbers (up to one third), which hasn't occurred in other types of investigated areas (see Tab. 7). The number of these smallest

farms is declining very quickly as a results of crowding out by large farms with AD plant that expand their growing of maize as much as possible.

### Farms with 10-49.99 hectares of agricultural land

In the case of farms with an area of 10-49.99 hectares, which account for roughly one-fifth of farms in the Czech Republic, interesting spatial specifics can also be identified. A characteristic feature of these farms is their changing share in various natural conditions. Thus, while we see above 22% (above the national average) in the case of the mountain, foothill and agricultural average areas, the share of this type of farms is declining to 12% for the most fertile areas. While the share of these farms increases in the total number of the mountain, foothill and average areas in the meantime, in fertile areas, this type is rather stagnant and slightly declining (Tab. 8).

If we look at the specifics of areas with agricultural biogas stations, we see an increased occurrence of these farms (an area of 10-49.99 hectares - see Tab. 9). In the case of area B2, these farms account for even a quarter of the total, which is exceptional in the sample, with B1 showing significant increases in the share of farms (by almost 3%, which is more than in the case of mountain areas). In terms of the number of farms in the period under review, declines in the number of farms with a size of 10-49.99 hectares are relatively strong (decrease by 13%), the increasing relative importance of these farms is primarily due to the abovementioned decline in the smallest farms.

**Table 8** Distribution of farms in size category from 10 to 49.99 hectares in the Czech Republic in 2002 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK} / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	1,986	1,901	95.7
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	3,039	2,830	93.1
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	1,485	1,245	83.8
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	486	524	107.8
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	537	429	79.9
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	932	950	101.9
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	1,252	1,078	86.1
$\Sigma \text{ CZ TOTAL}$	9,717	8,957	92.2

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

**Table 9** Distribution of farms in size category from 10 to 49.99 hectares in the Czech Republic in 2002 and 2010 according to intensity of operation of agricultural AD plants

<i>groups</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	993	866	87.2
B2	1,332	1,155	86.7
$\Sigma \text{ B}$	2,325	2,021	86.9
$\Sigma \text{ OTHER}$	7,392	6,936	93.8
$\Sigma \text{ CZ TOTAL}$	9,717	8,957	92.2

Source: Czech Statistical Office, own calculations.

### Farms with 50-99.99 hectares of agricultural land

Farms with an area of 50-99.99 hectares, which can be considered to be an average farm in terms of their size, account for 5% of the total number of farms in the Czech Republic in 2010. There is also a link between the changes in the share of this type of farms and the changing natural conditions. While the share of farms with an area of 50-99.99 hectares exceeded 5.5% in mountain and foothill areas in 2010, this share fell to 3.3% in the most fertile areas with improved natural conditions (Tab. 10). This change can be related to a higher concentration of farms in larger, more economically efficient units in mountain and sub-mountain areas, while in the most fertile areas the pressure on mergers isn't so large due to the high quality of agricultural land and hence the high efficiency of farming. This assumption explains both the increase in percentage points for the share of these farms as a whole, as well as the very high increases in the absolute number of farms in mountain areas (almost 60%). When talking about the internal structure of the distribution with farms with an area of 50-99.99 hectares, there are not more than half of them in the mountain and foothill areas in the Czech Republic.

It appears that farms with an area of 50-99.99 hectares, not only in mountain and sub-mountain areas but also in areas with intensively-run agricultural biogas stations seem to play a very strong role. The share of the number of farms from the total number of farms is relatively higher compared to natural conditions (up by 7.3% in B2 category - Tab. 11). The share of these farms, calculated for the Czech Republic (5.0%), is lower than the figure for the total category B (6.6%). Here, too, attention is given to the growing importance of this category within each size range of farms, which is stronger than for mountain and foothills areas.

**Table 10** Distribution of farms in size category from 50 to 99.99 hectares in the Czech Republic in 2002 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK}^1 / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	284	453	159.5
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	514	715	139.1
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	257	318	123.7
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	93	139	149.5
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	130	123	94.6
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	210	281	133.8
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	271	281	103.7
$\Sigma \text{ CZ TOTAL}$	1,759	2,310	131.3

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

**Table 11** Distribution of farms in size category from 50 to 99.99 hectares in the Czech Republic in 2002 and 2010 according to intensity of operation of agricultural AD plants

<i>groups</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	176	236	134.1
B2	234	337	144.0
$\Sigma$ B	410	573	139.8
$\Sigma$ OTHER	1,349	1,737	128.8
$\Sigma$ CZ TOTAL	1,759	2,310	131.3

Source: Czech Statistical Office, own calculations.

**Farms with 100 and more hectares of agricultural land**

The fourth size category are farms with more than hundred hectares of agricultural land. Even in this case, there is a clear increase in the share of this category in the monitored period to 9.4% of the total number of farms. It is obvious that most of this type of farms (12-13%) are encountered in areas with slightly above average natural conditions (area with agricultural land price in the range 5-6.99 CZK / m<sup>2</sup>), while relatively less are already found in the most fertile areas (7-8%). From the analysis of the increase of the number of this type of farms in individual regions, the surface increase is about one-tenth (Tab. 13). It can be said that the distribution of this type of farms within the Czech Republic is the most balanced compared to other types. These farms manage a major part of the agricultural land of the Czech Republic and have a decisive influence on land management. No significant specificities were identified from the analysis of these farms in areas with the intensive operation of agricultural biogas stations (see Tab. 12).

**Table 12** Distribution of farms in size category 100 and more hectares in the Czech Republic in 2002 and 2010

<i>groups</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	405	418	103.2
B2	433	482	111.3
$\Sigma$ B	838	900	107.4
$\Sigma$ OTHER	3,191	3,470	108.7
$\Sigma$ CZ TOTAL	4,029	4,370	108.5

Source: Czech Statistical Office, own calculations.

**Table 13** Distribution of farms in size category 100 and more hectares in the Czech Republic in 2002 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK}^1 / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	708	766	108.2
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	1,150	1,287	111.9
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	496	548	110.5
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	274	284	103.6
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	280	297	106.1
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	458	516	112.7
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	663	672	101.4
$\Sigma$ CZ TOTAL	4,029	4,370	108.5

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

As mentioned above, farms with an area of 100 hectares or more of agricultural land are the decisive driving force of Czech agriculture. Given the enormous scope of this category, which includes larger corporations of natural persons and smaller limited liability companies slightly larger than the hundred-hectare exchange, as well as huge thousands of hectares, we have added a time horizon of 2006 for which is the internal structure of these largest of agricultural holdings available (unfortunately only available for 2002 for enterprises with more than 100 hectares as total). Therefore, for the 2006-2010 period, enterprises with a size of 100-499.99 hectares and then enterprises with 500 hectares and more were first evaluated. First, we say a few words about farms with an area of 100-499.99 hectares.

In terms of numbers, farms with an area of 100-499.99 hectares account for 5.5% of the total number of farms in the Czech Republic (2,579 in 2010). The number of these farms grew by about 9% in the monitored period (207 new businesses were added to the category). The distribution of these farms does not show significant differences depending on the natural conditions. It is only possible to state a higher level of these farms in above-average farming conditions (5-6.99 CZK/m<sup>2</sup>), where the share of these farms reaches more than 7%, while in the most fertile areas it is less than 5% (see Tab. 14).

**Table 14** Distribution of farms in size category from 100 to 499.99 hectares in the Czech Republic in 2006 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK}^1 / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	423	455	107.6
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	667	739	110.8
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	299	328	109.7
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	163	176	108.0
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	165	187	113.3
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	309	320	103.6
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	346	374	108.1
$\Sigma \text{ CZ TOTAL}$	2,372	2,579	108.7

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

Looking at farms with an area of 100-499.99 hectares of high-intensity areas of agricultural biogas stations (Tab. 15), we do not find any significant differences. Only for the area, B2 was a higher rate of increase in the number of these farms observed (17%) over time, which exceeds the increase in the other categories of areas. It can be stated, therefore, that the number of large farms is growing strongly in the area B2 that is in an area with an increased intensity of operation of biogas stations.

The last evaluated size category of farms are businesses with an area of 500 hectares of agricultural land and more. This largest type of farms is found in the Czech Republic in 1,791 cases and represents a 3.9% share of the total number of farms, which did not change much in the monitored period of 2006-2010. However, the number of these farms has been progressively reduced (by 38 units since 2006), indicating a gradual decline in the importance of the largest farms, which have no significant features in their deployment in the context of changing natural conditions (see Tab. 16).



**Table 15** Distribution of farms in size category from 100 to 499.99 hectares in the Czech Republic in 2002 and 2010 according to intensity of operation of agricultural AD plants

<i>groups</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	202	223	110.4
B2	231	271	117.3
$\Sigma$ B	433	494	114.1
$\Sigma$ OTHER	1,939	2,085	107.5
$\Sigma$ CZ TOTAL	2,372	2,579	108.7

Source: Czech Statistical Office, own calculations.

**Table 16** Distribution of farms in size category 500 and more hectares in the Czech Republic in 2006 and 2010 according to natural conditions for agriculture

<i>price of agricultural land</i>	<i>number of farms (2006)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
$\leq 2.99 \text{ CZK} / \text{m}^2 (\leq 0.11 \text{ Euro} / \text{m}^2)$	311	311	100.0
$3-3.99 \text{ CZK} / \text{m}^2 (0.11-0.15 \text{ Euro} / \text{m}^2)$	559	548	98.0
$4-4.99 \text{ CZK} / \text{m}^2 (0.15-0.19 \text{ Euro} / \text{m}^2)$	226	220	97.3
$5-5.99 \text{ CZK} / \text{m}^2 (0.19-0.23 \text{ Euro} / \text{m}^2)$	119	108	90.8
$6-6.99 \text{ CZK} / \text{m}^2 (0.23-0.27 \text{ Euro} / \text{m}^2)$	113	110	97.3
$7-7.99 \text{ CZK} / \text{m}^2 (0.27-0.31 \text{ Euro} / \text{m}^2)$	192	196	102.1
$\geq 8 \text{ CZK} / \text{m}^2 (\geq 0.31 \text{ Euro} / \text{m}^2)$	309	298	96.4
$\Sigma$ CZ TOTAL	1,829	1,791	97.9

Source: Czech Statistical Office, own calculations.

<sup>i</sup> As administrative prices (not market prices) of agricultural lands are used for our calculations, natural conditions for agriculture can be simply ranked from the worst (the lowest prices) to the best (the highest prices).

However, in the case of areas with the intensive operation of agricultural biogas stations, we find certain specificities in relation to these largest farms (Tab. 17). The occurrence of this category of farms is relatively higher here (in category B1 to 5%), however, given the occurrence of these increased shares in the two monitored periods, this fact cannot be related to the operation of biogas stations. From the point of view of the changing number of these types of enterprises, the relatively higher stability of their number is typical. This type of farms is usually the most flexible as for their capital to be invested or to get a bank loan for reasonable interests which makes their operation specific.

**Table 17** Distribution of farms in size category 500 and more hectares in the Czech Republic in 2002 and 2010 according to intensity of operation of agricultural AD plants

<i>price of agricultural land</i>	<i>number of farms (2002)</i>	<i>number of farms (2010)</i>	<i>year 2002 = 100</i>
B1	200	195	97.5
B2	212	211	99.5
$\Sigma$ B	412	406	98.5
$\Sigma$ OTHER	1,417	1,385	97.7
$\Sigma$ CZ TOTAL	1,829	1,791	97.9

Source: Czech Statistical Office, own calculations.

## **DISCUSSION AND CONCLUSION**

This paper has examined how the size of agricultural farms in the Czech Republic varies according to changing natural conditions and what the distribution of AD plants can tell us about the strategies of certain farm types. We found that agricultural AD plants have a tendency to concentrate in areas with larger agricultural farms and also in areas with average and slightly below average natural conditions for agricultural activities. We can say that this has been heavily affected by the massive support policy of the Czech Government and the EU for development of AD plants in the Czech Republic after 2004. This policy followed an idea of development of AD plants as a tool that helps farmers in times when their traditional agricultural activities were declining due to competition with large scale imports of cheaper food from abroad. Thus, environmental concerns and concerns about benefits for local development were not taken into account. As a result of this policy, it was mainly big farms in the Czech Republic who set up AD plants. As co-funding from own sources was necessary, smaller farms (who have more limited access to bank loans) were largely excluded from this opportunity. Moreover, our research results show that large farms tend to crowd out smaller farms out of areas with dense occurrence of AD plants where pressure to grow maize for ADs significantly competes with growing of other agricultural crops. This finding is in strong contradiction with the official national agricultural policy where support for small farms is systematically emphasized.

The location of the majority of AD plants in areas with average and below-average natural conditions for farming can be explained as the effect of operators' decisions who tend to focus their agricultural activities (food production) on land of the best quality whilst diversify their economy by changing the activities on land with less favourable natural conditions. For comparative purposes it is worth noting that the average size of agricultural farm in the Czech Republic dramatically exceeds the size of farms in Western Europe which could make the Czech farms more profitable.

Our paper illustrates discrepancies in the different objectives of the Common Agricultural Policy of the European Union and national support of the Czech Republic, which primarily targeted their subsidy schemes to support the development of agricultural AD plants on the largest agricultural farms, while in the European context support was more targeted to typical western farms that are much smaller (Chaplin et al., 2004, Breustedt and Glauben, 2007, Bojnec and Latruffe, 2013). As a result of this support, the areas where agricultural AD plants are primarily concentrated within the Czech Republic are the Cesko-moravska vrchovina Highlands, the adjacent part of southern Bohemia and the area under the Orlické hory Mountains. These areas have seen significant changes in agricultural outputs due to increasing local demand for intentionally grown crops for AD plants (especially for green maize), taking

the place of other crops (especially potatoes) that were no longer profitable since the country entered the EU and opened its borders to cheaper food imports. The usage of agricultural waste in these AD plants is very low, which together with the under-utilisation of heat outputs, strongly limits the potential environmental benefits of operating these agricultural AD plants.

### **LIMITATIONS OF THE STUDY**

The authors acknowledge that the data analysed in the research are not that recent; spatiotemporal changes and consequences of the size structure of agricultural farm and spatial distribution of AD plant have been analysed for 2002 and 2010. The building of new AD plants in the Czech Republic has been stopped in 2014 when supports for new AD plants was ended, so our results do not cover the whole period of diffusion of AD plants in the Czech Republic. However, we believe that our results might contribute to the detection of factors that lie behind the current distribution of AD plants in the Czech Republic. We are also aware that our study is based only on selected indicators as the administrative price of agricultural land and size of agricultural farms and it would be beneficial if some other indicators were also studied and more sophisticated statistical tools employed. We endeavour to develop this topic in future papers.

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# **INTERPRETATION OF DISRUPTIVE INNOVATION IN THE ERA OF SMART CITIES OF THE FOURTH INDUSTRIAL REVOLUTION**

## **A ROMBOLÓ INNOVÁCIÓ ÉRTELMEZÉSE A NEGYEDIK IPARI FORRADALOM OKOS VÁROSAINAK KORSZAKÁBAN**

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### **Abstract**

The exponential development of information technology and, in this context, the latest generation of open innovation systems result in revolutionary changes in almost every industry as well as in other areas of life. From the automotive industry to the energy sector and to tourism, newcomers emerge everywhere, building on the tools of disruptive innovation, which with earlier unprecedented speeds transform their previous industry power.

The essence of the smart city approach is to put the latest tools of technological advancement in serving the social, economic and ecological sustainability of cities' lives for the inhabitants as well as for the enterprises of the city.

Industry 4.0 is an imagined future, which in our opinion – in direct or indirect ways – would have a fundamental influence on smart cities and their environment and regions, given that their primary goal is to improve a country's competitiveness.

In our study, we review the relevant literature on the definition of and approach to innovation as well as the smart city concept in this new revolutionary age, we demonstrate relevant correlations between the concepts of disruptive innovation, smart city and Industry 4.0.

**Keywords:** Smart City, Innovation, Industry 4.0

### **Absztrakt**

Az infokommunikációs technológiák exponenciális fejlődése és ezzel összefüggésben a nyílt innovációs rendszerek legújabb generációja forradalmi változásokat eredményeznek szinte minden iparágban. Az autóiipartól az energetikán át a turizmusig mindenütt olyan új szereplők jelennek meg akik az úgynevezett romboló innováció (disruptive innovation) eszközeire építve korábban soha nem látott sebességgel alakítják át a korábbi iparági erőviszonyokat.

Az okos város megközelítés lényege, hogy a technológiai fejlődés legújabb eszközeit a városok életének társadalmi, gazdasági és ökológiai fenntarthatóságának szolgálatába állítsa a városok lakói és az ott működő vállalkozások érdekében. A romboló innováció korszaka új kihívásokat és lehetőséget teremt és várhatóan a globalizáció korábbi hullámainál is jelentősebb változásokat hoz a városok számára.

Az Ipar 4.0 egy elképzelt, megálmodott jövő, amely, véleményünk szerint – közvetlen vagy közvetett módon –, elementáris hatást gyakorol az okos városokra, azok környezetére és régióira, melyek elsődleges célkitűzése az ország versenyképességének javítása.

Tanmányunkban áttekintjük az Innováció definíciójának vonatkozó szakirodalmát ebben az új forradalmi korban, majd releváns példák bemutatásával igazoljuk hipotézisünket az iparági erőviszonyokat illetően.

**Kulcsszavak:** Smart City, Innováció, Ipari forradalom 4.0

## INTRODUCTION/ OBJECTIVES AND METHODS

In our view, there are two key driving forces behind the rapid global economic, political and environmental changes we are experiencing: demography and Info-Communications Technologies (ICT).

The role of the cities has become more important and all the sustainability issues have relevant urban dimensions. By utilizing ICT options environmental, social and economic sustainability issues can be handled and solved at higher level, however, this cannot be done without the capability for radical/disruptive innovation. The radical innovation vision of Industry 4.0 is a response to the global competitiveness challenges, which also requires a supporting infrastructural and social environment having urban dimensions as well.

The concept of smart cities is an answer for the environmental, economic and social sustainability issues generated by the previously listed challenges. Smarter cities are utilising ICT technologies and in order to do so they need to innovate.

The exponential development of the Info-Communications Technologies itself is a result of innovation and as an additional layer, creative adoption of the new technologies in order to solve issues also requiring innovation. The modern networked, collaborative innovation processes are strongly connected to innovation ecosystems<sup>1</sup> that are typically linked to metropolitan areas.

Industry 4.0 concept is also about development of the innovation capabilities with special industrial focus. While Industry 4.0 is originally not a city-focused vision, the targeted network of smart factories is also linked to cities both as research and development centres and also as locations of the new smart factories.

In our study, reviewing the relevant literature on the definition of and approach to disruptive innovation, to Industry 4.0 as well as the smart city concept we intended to demonstrate relevant correlations between these factors. Deep discussion of definition of each key components of the study (innovation, Industry 4.0, smart city) is beyond the framework of this article. Our focus is the connection between the mentioned concepts. In order to do so we analyse the overlaps between the measurement methods related to innovation, Industry 4.0 and smart cities with a comparative table. We also visualise the correlations with a conceptual chart.

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<sup>1</sup> Innovation ecosystem is the term used to describe the large number and diverse nature of participants and resources that are necessary for innovation. These include “entrepreneurs, investors, researchers, university faculty, venture capitalists as well as business development and other technical service providers such as accountants, designers, contract manufacturers and providers of skills training and professional development” source: <http://www.know-hub.eu/knowledge-base/videos/innovation-ecosystems-as-drivers-of-regional-innovation-validating-the-ecosystem.html>

## RESULTS

### Demographic challenges

The 7 billion population of the world in 2010 is expected to grow over 10 billion by 2060 and over 11 billion by 2100. 80% of this growth is forecasted to come from Africa. According to the United Nations, Department of Economic and Social Affairs, Population Division 2015 forecast the population of Europe meanwhile is expected to decline from the 735 million in 2010 below 650 million by 2100. Historically between 1950 and 2010 the world has experienced proportionally an even more radical shift in population when the world population increased from 2.5 billion to 7 billion driven by a close to 3 billion population growth in Asia. (United Nations, 2015). Population growth in combination with globalisation and the ICT revolution that impacted all other industries resulted very significant economic growth and improving living standards on one side and very serious environmental issues on the other side including non-sustainable usage of natural resources and alarming level of global warming.

### Technology development

The earlier wave of the ICT revolution starting with the personal computers followed by the rapid extension of the internet combined with the liberalization of world trade and the global logistic networks resulted the global economy as we know it today utilizing technology enabled global scale labour arbitrage as one of its key drivers.

ICT is not just one of the fastgrowing industries or disciplines but plays key role in the fundamental changes we are experiencing in the global economy. ICT is in a unique position, firstly because of the exponential technological development of the performance of the basic electronic components often referred to as the Moore's Law<sup>2</sup> and secondly because ICTs are the key drivers of the revolutionary development of all domains from medicine through energy distribution to the automotive industry. Experts predict that this exponential development will continue at least in the next 10-15 years.

Probably the most well-known description of the intensifying changes caused by the disruptive ICT based innovation<sup>3</sup> is the Wall Street Journal article by Marc Andreessen published in 2011: *Why Software Is Eating the World*. In his visionary article Andreessen predicted that „more and more major businesses and industries are being run on software and

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<sup>2</sup> Moore's Law is a computing term which originated around 1970; the simplified version of this law states that processor speeds, or overall processing power for computers will double every two years. (<http://www.mooreslaw.org/>)

<sup>3</sup> Disruptive Innovation refers to a technology whose application significantly affects the way of market or industry functions. A disruptive innovation is differentiated from a disruptive technology in that it focuses on the use of the technology rather than the technology itself. ( <https://www.investopedia.com/terms/d/disruptive->)



delivered as online services—from movies to agriculture to national defence. Many of the winners are Silicon Valley-style entrepreneurial technology companies that are invading and overturning established industry structures. Over the next 10 years, I expect many more industries to be disrupted by software, with new world-beating Silicon Valley companies doing the disruption in more cases than not.” (Andreessen, 2011, p.1.). Several years later it is enough to have a look at the changes on the list of the top 10 global companies by market value to appreciate software has been really eating the world.

Software-enabled innovation is reshaping almost all industries. Automotive, the segment that plays dominant role in continental Europe and especially in Central and Eastern Europe is not an exception.

As Mary Barra (2016), the Chief Executive Officer of General Motors has stated, car industry is going to go through more changes in the next 10 years, than it had in the last 50 years. Barra emphasizes the following technological trends:

- Electro mobility: Combustion engine cars are a thing of the past
- Connected Car: Cars “communicate with each other” – Continuous, automated data collection and mobile communication
- Autonomous car: Self-driving cars
- Car sharing: Instead of owning vehicles, emergence of as a service based business model (Barra, 2016).

Changes occur not only in automotive industry. Nowadays 90% of all production processes are also supported by some kind of ICT tools. The increasingly significant and essential role of ICT applied by companies has changed the life and working conditions. Miniaturization and the development of communication technologies enable the blending of the physical and the virtual world and by creating a new, so-called CPS – Cyber-Physical System, in which physical space has an especially important and defining role. Industrial production becomes now to be integrated into an intelligent environment called ‘smart factory’.

Based on this technological evolution, Germany announced the arrival of Industry 4.0 vision, with its core element being the integration of CPS into the production and logistics systems, as well as the introduction of the network of tools and services in the production processes, influencing value production, business models, organizational structures, decision making and communication mechanisms, creating a change of paradigm of such a degree, which can rightly be called the fourth industrial revolution.

There can be observed similar revolutionary changes in a couple of other industries such as energetic and public utilities (spread of renewable energy production, distributed energy production model, “smart grid”), media and entertainment (social media, video streaming vs.

traditional media), tourism and transportation (emergence of new software enabled business models represented rapidly emerging new players like Airbnb or Uber for example).

### **Role of the cities**

Beyond the previously mentioned growth and shift of geographic distribution of the global population there is an additional trend: the increasing level of urbanization. Today more than half of the global population lives in cities. While in 1950, 30% of the world's population was urban, by 2050, 66% is projected. Urban population is expected to grow by 2.5 billion by 2050, with nearly 90% of the increase concentrated in Africa and Asia. "As the world continues to urbanize, sustainable development challenges will be increasingly concentrated in cities, particularly in the lower-middle-income countries where the pace of urbanization is fastest", (United Nations, 2015, p. XXI.). Besides the mentioned demographic changes knowledge and innovation capabilities are also concentrating in few numbers of cities that are becoming global knowledge and innovation centres with innovation ecosystems of global impact (Start-up genome, 2017).

### **Cities – basic centres of innovation and development**

The development of cities in Europe was motivated by several factors. Demographic growth, technological development, and demand for living in a community, requirement of security as well as interest representation should be highlighted. Although centuries have evolved and changed, essential functions of cities have remained so nowadays.

For interpreting success at city level (Rechnitzer, Smahó, 2004; Enyedi, 1996), the following factors can be considered:

- Quick change of structure
- Strong innovation capability
- Decision-making power
- Knowledge-based production
- Urban society, strong and prosperous middle class
- Employment and income growth
- External, global relationships

Rechnitzer and Smahó (2011) also state, the city is competitive, if it is successful, furthermore they lay emphasis on urban, regional strategy making, future research and preparation, and on the role of innovation as a whole. The current rapid technological development has necessitated the evolvments of smart cities (and their regions) that have to provide and perform manifold tasks: they should not only adopt novelties, but also initiate and promote innovation activities. This, of course, implies a significant change in certain

functions, roles, way of thinking as well as attitudes, which is inherent in the previously mentioned destructive innovation.

Based on this Etzkowitz and Leydesdorf (1997) introduced the Triple-Helix model defining three main distinctive entities:

- University
- Enterprise
- Government

According to the interactions between the actors they identified three structures as follows:

- **Structure I:** the state (government) controls and there is no bottom-up innovation. There can be a strong, government-driven demand for innovation (former Soviet-Union) and can be a weaker one (some Latin American countries).
- **Structure II:** there are strong boundaries, fixed links between the actors. This can be well observed in the USA and in Sweden.
- **Structure III:** this form can be characterized by overlapping, clusters, common purposes. This is a criterion of countries consciously planning future. The main goal of the actors is cooperation by reducing impediment factors in order to have common development orientation.

We consider, even this Structure III describes and defines the interactions of the knowledge-based economy development (David, Foray, 2002; OECD 1996), the development of collaborative networks that utilize the values of one another and build business processes as well as knowledge transfer. Although the role of universities and governments in the first two industrial revolutions was small, in the age of digitization it can already be observed, that their significance is fundamental: without government or university research there would be no Internet today, for example.

The trend necessitates more and closer cooperation between the three actors, which can be made in the form of networking links or by creating of clusters. Government is expected to play supporting role; enterprises have to identify the innovation potentials as well as to define goals and directions. Industry companies, as purchasers of R&D&I activities, can serve as a major engine for a new knowledge-based economy in a knowledge-based society (David, Foray, 2002), contributing to the emergence of a digital ecosystem and thereby promoting the country's competitiveness (Lengyel, 2010).

Industrial development policies of dominant European countries (Kagermann, Wahlster, Helbring, 2013; Roland Berger, 2014) are based on wide-ranging relations between research centres (academia centres, universities, and research institutes), state administration (government) and industry. Innovation potential and the primary depositories of the related

economic development are the research sites, however, changes, challenges and new opportunities can only be tackled if industrial enterprises and the state are involved in production, knowledge transfer and new institutional and social forms of applications.

Some specific examples of links between/among Triple-Helix members:

- Research Centre - Industry: joint R&D&I tenders and projects; patterns and factories
- Research Centre - State: targeted state aid for financing specific research activities
- Research Centre - Industry - State: operation of technology platforms, participation in R&D&I excellence programs

### **Innovation – creative destruction – disruptive innovation**

A century ago, the first economic theory approach to innovation can be linked to Schumpeter, the Austrian-born American economist. In 1911 (Schumpeter, 1980) his starting point was that the economic cycle can be fundamentally interpreted as an equilibrium situation. Manufacturers are basically not interested in any creative activity; they are focusing purely on satisfying the only quantitatively changing needs of their consumers. Schumpeter used the term „development” (Schumpeter, 1980), that should be considered as a separate phenomenon, which is absonant from all other phenomena observable during this cycle or in tendencies towards equilibrium.

Development is a spontaneous, shocking change of the proces's path, a disturbance of balance, which once and for all modifies, relocates the existing equilibrium situation.

Schumpeter defines innovation as the following five events – as well as the combination thereof:

- Introduction of a new product or a new product quality
- Introduction of a new production method, however, it might consist a new way of treating a product commercially
- The opening up of a new market
- The opening up of a new source for raw materials or semi-manufacture regardless of whether the source has existed before
- The creation of new organizational structure in industry, for example by creating or breaking down a monopoly situation

“Creative destruction” was introduced in Schumpeter's (1942) book: *Capitalism, Socialism and Democracy*. Schumpeter used it to describe the disruptive process of transformation that accompanies such innovation. Innovative entry by entrepreneurs was the disruptive force that sustained economic growth even as it destroyed the value of established companies and labourers that enjoyed some degree of monopoly power.

In the mid 1990s Christensen introduced the expression of “disruptive innovation”. It refers to an innovation that creates a new market and value chain and at the same time disrupts the existing ones. According to Christensen a disruptive innovation can be interpreted as a product or service designed for a new set of customers (Christensen, 1997)

The process of the disruptive innovation can be described as follows:

- Innovation centres of market leaders develop the latest, smaller size technologies – mainly technically straightforward and simpler than the older ones –, but after unsuccessful market tests they stop the developing process.
- New companies (outsiders, entrepreneurs) begin to invest into the uncertain, new and unexploited technologies and try to attract customers.
- If they put their feet on the market with the new product, they develop it by ‘sustaining’ innovation.
- When the novelty reaches the old product’s market indicators, it rapidly starts to cannibalize the market of the older one.
- Manufacturers of the old products notice the technology change too late and are not able to make up the lagging anymore.

The failure of successful companies is caused by the non-allocation of sufficient resources into innovations based on technologies which cannot be used on the current market of the company. Being afraid of ambiguous success as well as because of limited motivation they do not invest in such innovation development. However, companies are able to avoid disruptive innovation if they invest resources into searching for new opportunities during the company’s growth period and manage projects in proper manner (Christensen, Bower, 1996).

At the turn of the millennium OECD countries summarized the results of their comprehensive research in a book also known as Oslo Manual (2005) containing guidelines for collecting and using data on industrial innovation. The first edition was focusing essentially on product and process innovation in manufacturing technology.

The European Commission has also joined the relevant researches and the revised manual was published in 2005 introducing the concept of marketing, organizational and management innovation and the conception of knowledge transfer networking as well.

In the Hungarian relevant literature (László Gáspár, 1988) considers innovation as a universal activity that at the same time represents the renewal of the economic, political and cultural spheres.

János Rechnitzer (1993), by widening the above mentioned concepts, points out that innovation can be interpreted as new human and community behaviours. As the actors of innovation as well as their functions are changing, it is irrelevant what the new product is. The

question is whether this novelty was unknown to the given social groups or economic actors or not.

He specifies the types of innovation in the following grouping:

- Economic-organizational: an environment where all the institutional conditions are given for the free spread of innovation, for example act of free company establishment (foundation)
- Product: in addition to new technical products the novelties of production control can be interpreted within this frames
- Activity: non-materialized knowledge and new information for improving economic and life functions
- Social-political: improvements related to community living spaces beyond the individual, for example the changes in Hungary in 1989

As the milieu of innovation (Rechnitzer, 1993) can be interpreted on the one hand those economic and production relations that homogenize the production culture, thereby gaining mutual knowledge and increasing their mutual trust network, on the other hand existing features that are present in the local social relations, culture and institutional system. These are all the factors that cities can provide.

The European Digital City Index (EDCI) describes how well different European cities support digital entrepreneurship. For start-ups and scale-ups, it provides information about the strengths and weaknesses of local ecosystems, allowing them to plan accordingly and consider where they may need to devote more resources. For policy makers aiming to encourage digital entrepreneurship in their own city, the Index helps identify existing and promising hubs of activity, in order to learn from their practices. Additionally, it allows benchmarking of performance against other European hubs, and helps identify which policy areas to prioritize. (European Digital City Index, 2016)

“The Digital Economy and Society Index is a composite index that summarizes relevant indicators on Europe’s digital performance and tracks the evolution of EU member states in digital competitiveness.”(<https://ec.europa.eu/digital-single-market/en/desi>) The composite index contains five differently weighted dimensions: Connectivity, Human Capital / Digital Skills, Use of Internet by citizens, Integration of Digital Technology by businesses, Digital Public Services. The DESI aims to assist EU countries in identifying areas requiring investments and actions for creating a Digital Single Market. Based on DESI, comparing to worldwide results Europe is becoming more digital, for example the top EU countries (Denmark, Sweden, and Finland) are also top worldwide performers in digital. But, as a whole, the European Union needs to improve in order to catch up with the most digitized countries in the world (Japan, South Korea, and the USA). DESI is not a city level indicator,

but its structure can be used when we make comparison with city level indexes therefore we mention it here.

Global Start-up Ecosystem Report is a comprehensive analysis of the leading global start-up ecosystems. It is based on more than 100 indicators that are grouped into the following main categories: 1) Performance, 2) Funding, 3) Market Reach, 4) Talent, 5) Start-up Experience (Start-up genome, 2017).

The Global Innovation Index (GII) provides detailed metrics about the innovation performance of 127 countries and economies around the world. Its 81 indicators explore a broad vision of innovation, including political environment, education, infrastructure and business sophistication. (Soumitra et al., 2017)

Global Start-up Ecosystem Report (GSER) is published by a private research organisation called Start-up Genome and its conclusions are based on data from 10,000 start-ups and 300 partner companies. The global survey includes data from thousands of start-ups across 56 ecosystems, as well as data via partnerships such as Crunch Based and Deal Room. (Start-up Genome, 2017)

## **Industry 4.0**

The industry of Europe in the 21<sup>st</sup> century faces significant challenges. The ever-decreasing raw material supply, the rising energy prices and the demographic changes require the modification of the existing model. The increasing competition mostly driven by the increasing productivity of the Asian industry and innovation makes it clear that the production industry needs solutions it can efficiently respond to challenges with (McKinsey & Company, 2013).

The following factors in our opinion post a challenge to the industry of the 21<sup>st</sup> century (United Nations, 2011):

- Global competition
- Market volatility
- Customized products
- Time-to-market and delivery performance (speed)
- The sustainability of the full life cycle of products
- Productivity (resource-efficiency, value orientation)
- Shortage of skilled labour

The production systems have been gradually complemented with information technology support tools in recent decades, as increasingly complex technological solutions, production in often multiple locations and the coordination of supporting logistics processes started to pose an ever-more complex challenge. Accordingly, 90% of all production processes are now

supported by ICT tools. The increasingly dominant and pivotal role of ICT in companies has changed lifestyles and working environment, the significance of which is unquestionable.

Miniaturization and the development of communication technologies enable the blending of the physical and virtual world and give way to the so-called CPS – Cyber-Physical System. Industrial production becomes to be integrated into an intelligent environment called ‘smart factory’ in the related literature.

Based on this technological evolution, Germany announced the arrival of Industry 4.0, also called the fourth industrial revolution.

The 2011 Hannover Expo opened a new era for the German industry due to the public debut of the scientific project called Industry 4.0. According to the concept the smart factories of the future will produce smart products for the global market. Deeper horizontal and vertical integration is expected from every member of the value chain while the collaboration will move to a service based model. Physical and virtual worlds are converging and the product itself becomes intelligent and it will control the production. Personalized, customized products are going to be produced using advanced mass production technologies.

The evolution of ICT, the smarter and smaller devices (Smart Devices), the growing role of the Internet as well as the emergence of cloud-based computing technology and services (Cloud-Computing) further enhance the importance of computer data processing and information systems in the industry. The ever-smaller microcomputers, embedded systems communicate wirelessly over the Internet resulting in a new system called Cyber-Physical System (CPS).

Instead of a uniform mass production both in manufacturing as well as in services those ones gain advantageous positions that may combine the cost advantages resulting from automation and modern work organization methods with tailor-made solutions for their customers.

Potential customers should be very well known and the planning of products and services should be built around the customer needs. Instead of looking for customers for a single product or technology, we have to know the often hidden requirements, and to look for real solutions providing much more than what currently is available. A good example is the famous saying associated with Henry Ford: “If I had asked people what they wanted, they would have said they would have a faster horse.” (Schoonmaker, 2014)

For measuring and estimating of innovation willingness and readiness of countries, regions as well as cities, Roland Berger (2014) created the “RB Industry 4.0 Readiness Index”. The index uses the following sets of indicators when creating a so-called country ranking.

1. Industrial excellence:

- Production process sophistication



- Degree of automation
- Workforce readiness
- Innovation intensity

2. Value network:

- High value added
- Industry openness
- Innovation network
- Internet sophistication

### **Smart Cities**

The concept of the smart city has become increasingly widespread today. As a starting point, we may use the internationally known ITU-T/FG SSC Smart City definition from 2014 which was based on the evaluation of 116 different definitions developed by researchers, government bodies, international IT companies, and other practitioners. (Kondepudi et al. , 2014.)

"A smart sustainable city (SSC) is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects".(<https://www.itu.int/en/ITU-T/focusgroups/Documents/Approved-Deliverables/TR-Definitions.docx>)

The smart city concept is co-created by corporations (like IBM, Siemens, CISCO and recently multiple Chinese ICT giants), players from all layers of public administration and international organizations from city level up to the European Union/United Nations and it is also a scientific concept developed by scholars. It is worth to mention, that like most of the popular concepts, smart city approach has its critics as well highlighting among others the security and data privacy issues raised by the extensive usage of networked smart devices and sensors.

As one of the leading global corporations IBM has played a significant role in developing the smart city concept. By announcing the launch of the “Smarter Planet” initiative in 2008 they were aiming more efficient and reliable solutions of social, environmental, economic problems through the latest advances in ICT. The three main features of Smarter Planet solutions are marked with three “i”, based on English initials: instrumented, interconnected and intelligent operation.

One of these elements is a smart city focusing on responses to urban challenges. The Smart City Assessment methodology of IBM examines the operation of the city at three levels (Dirks, Keeling, 2009):

- The mission and direction (government) of the city (City Operation Systems)
- Services used by the inhabitants and enterprises operating there (City User Systems)
- The infrastructure supporting the above (City Infrastructure Systems)

Based on the above smart technologies are not viewed by themselves only, but from the point of view whether they support the realization of the goals of a city strategy, as well as how they serve the city's inhabitants and enterprises.

The methodology suggests taking into account systematized indicators based on following aspects:

- Prerequisites (preconditions)
- Management
- “Smart” systems
- Results, achievements

The aspect “Smart systems” should be emphasized because according to our interpretation without the innovative application of ICT we cannot speak of a smart city

As a trigger of global social and economic changes, we highlight two factors: knowledge as a non-conceivable production factor and the appreciation of the role of ICT, which together require a new kind of thinking about the digital economy. This is confirmed by the Smarter Cities Study commissioned by IBM Hungary (Lados, Horváthné, 2011). City and ICT support each other in order to achieve common success by realizing livable or smart city as a goal to be achieved.

Numerous organizations and research groups published smart city and sustainable development indexes that are following similar logic and often overlapping sets of indicators. A list of some of these rankings:

- TU Wien European Smart Cities Ranking
- Smart City Index by Boyd Cohen
- IBM Smarter City Assessment
- ISO 37120:2014 Sustainable development of communities - Indicators for city services and quality of life
- Smart City Index Italy by Between
- Sustaina 100 by Sustaina
- Sustainable Development Goals by United Nations

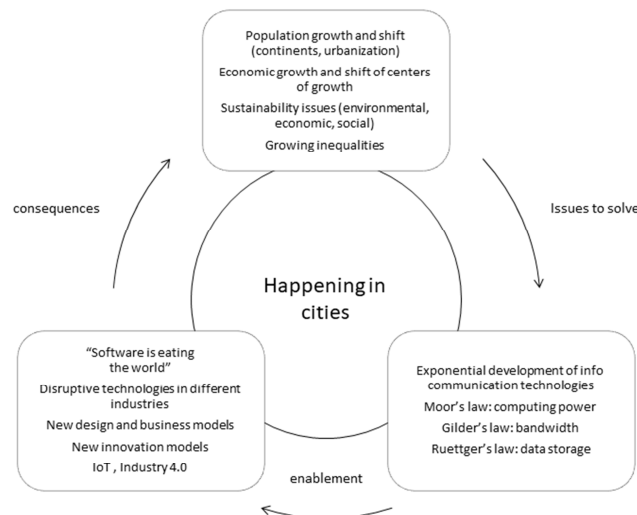
The Technical University of Vienna (Technische Universität Wien, TUW) (Giffinger et al., 2007) is one of the leading scientific centres in ‘smart cities’ research, where the Smart City

Ranking (SCR, TUW SCR), a kind of competitiveness, “smartness” index of European cities derived from a system of indicators chosen by the researchers is regularly published. They defined six basic characteristics in their research (Figure 1) (Giffinger et al., 2007):

- Smart Economy
- Smart Governance
- Smart People
- Smart Mobility
- Smart Environment
- Smart Living.

These are weighted and represent the current and relative ranking among the cities involved, considering the criteria of smart cities.

**Figure 1** Relationship between technology development, demographic shifts and sustainability issues



Source: edited by authors

Varying numbers of towns are chosen from different European countries, but they fundamentally have to meet certain criteria in order to be considered for the annual assessment:

- The city's population must be between 100 and 500 thousand
- 80% of the data pertaining to the indicators must be available
- The city must be included in the Eurostat Urban Audit Database
- Must have at least one operational university

Factors are assigned to the characteristics, data for which is derived from indicators. For example, within the Smart Economy Characteristic (competitiveness), having interest to this paper, we can find the Innovative Will factor, which comes from three NUTS2 indicators:

- R&D expenditure in % of GDP

- Employment rate in knowledge-intensive sectors
- Patent applications per inhabitant

Innovation is present here as well, as a highlighted evaluation point of view of cities. (Giffinger et al., 2007)

ISO 37120:2014 standard (<https://www.iso.org/standard/62436.html>) defines and establishes methodologies for a set of indicators to steer and measure the performance of city services and quality of life. ISO 37120:2014 is applicable to any city, municipality or local government that undertakes to measure its performance in a comparable and verifiable manner, irrespective of size and location.

## CONCLUSION

Human race experienced unparalleled technological development and partially as a result of it unparalleled population expansion and economic growth during the decades behind us. Both the distribution of the population growth and the distribution of the incremental income and wealth are geographically uneven. Besides population growth we are also experiencing very extensive urbanization as well. The importance of the cities has been continuously increasing as by now more than 50% of the global population is living in cities while 70% of the global GDP is generated in urban areas. This concentration is expected to continue. The radical changes are generating very serious issues in the area of environmental sustainability while economic and social inequality is also becoming more and more serious concern.

Base technologies like computing power (Moor's law), bandwidth (Gilder's law<sup>4</sup>), and data storage capacity (Ruettinger's law<sup>5</sup>) have been developing on exponential speed. Besides the development of these technologies new innovation and business models have emerged that are resulting radical changes of the status quo in almost all industries and geographical areas. This phenomenon is often called disruptive innovation.

We believe that the concept of smart cities and also Industry 4.0 are strongly correlated to the concept of disruptive innovation.

- The importance of the cities has been increasing and most of the sustainability issues has very strong urban dimension as well. The smart city initiative is about utilizing Info-Communications Technology enabling solutions to handle environmental, social

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<sup>4</sup> An assertion by George Gilder, visionary author of *Telecosm*, which states that "bandwidth grows at least three times faster than computer power." This means that if computer power doubles every eighteen months then communications power doubles every six months. Source: <https://www.netlingo.com/word/gilders-law.php>

<sup>5</sup> Ruettinger's law of storage states, that companies double they storage needs every 12 months Source: *Applying E-Commerce in Business* By Rana Tassabehj p. 274

and economic sustainability issues. This cannot be done without the capability for radical/disruptive innovation.

- The concept of Industry 4.0 is an attempt of the German/European industry to respond global competitiveness challenges. It is about innovative application of the exponentially developing Info-Communications Technologies in the industrial value chain. Industry does operate also in urban environment and most of the prerequisites of implementing a radical innovation vision like Industry 4.0 require a supporting infrastructural and social environment that has a very important urban dimension as well.

Analyzing some of the practical measurement methods related to city performance, smart cities, Industry 4.0 and city innovation capabilities, we found that there is a very significant overlap between the indicators (Tab. 1). The indicators typically applied to assess innovation capabilities are very much the same as the ones measuring and ranking smart cities and also there is a remarkable overlap with the Industry 4.0 indicators we observed. It seems to confirm the correlation between innovation capabilities and the concept of Smart Cities and Industry 4.0.

**Table 1** Comparison of innovation, Smart City and Industry 4.0 indicators

Innovation Indexes				Smart City Indexes			Industry 4.0 Index
GII	EDCI	DESI	GSER	Technical University of Vienna	IBM Smart City Assessment	ISO 37120	Roland Berger
Institutions	Business Environment	Digital Public Services	Funding	Smart Governance	City Services	Governance/Fire and Emergency Response/Urban Planning	
Human Capital and Research	Skills	Human Capital	Talent	Smart People	Citizens	Education/Health	workforce readiness
Infrastructure	Digital Infrastructure	Connectivity/Use of Internet			Communication	Telecommunication	Internet sophistication
	Non-Digital Infrastructure			Smart Mobility/Smart Environment	Water/Energy	Energy/Environment/ Shelter/Solid Waste/Wastewater/ Water and Sanitation	
	Lifestyle			Smart Living		Recreation	
Market Sophistication	Access to Capital						
	Market		Market Reach	Smart Economy		Economy	
Business Sophistication	Entrepreneurial Culture		Startup Experience		Enterprises		Industry openness
	Mentoring and Managerial Assistance					Finance	
Knowledge and Technology output	Knowledge Spillovers	Integration of Digital Technology				Innovation	production process sophistication
							innovation intensity/innovation Network
Creative outputs			Performance				degree of automation

EDCI	European Digital City Index
DESI	Digital Economy and Society Index
GSR	Global Startup Ecosystem Report
GII	Global Innovation Index
ISO 37120	City indicators for service delivery and quality of life
Roland Berger	RB Industry 4.0 Readiness Index

Source: edited by authors based on the mentioned data sources

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## **IMMIGRATION AND REGIONAL COMPETITIVENESS – RELEVANT THEORIES IN THE MIGRATION RESEARCH AND IN THE REGIONAL SCIENCE**

### **BEVÁNDORLÁS ÉS REGIONÁLIS VERSENYKÉPESSÉG – A MIGRÁCIÓKUTATÁS ÉS A REGIONÁLIS TUDOMÁNY FŐBB ELMÉLETEINEK ÖSSZEVETÉSE**

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#### **Abstract**

International and interregional migrations, the geographic form of human mobility have a number of social, economic and political effects. These impacts can vary depending on the reference period, region or sector as well as on the goals and aspects of our interpretation. Another important question in connection with regional competitiveness is how decision makers act and react after perceiving migratory movements. Analysing the interference between immigration and regional development, we can rely on the well-known migration theories, however, a comparison of further models and concepts relating development and regional issues can be more useful for researchers. These questions are relevant, since the issues of the regional science, such as regional competitiveness and regional policy, have in the background strong associations with migratory phenomena.

The aim of this study is to introduce the theoretical background, summarizing the mainstream solutions and the controversies as well. Thus the first part presents the role of the migration theories and these of the regional science in connection with the linkages between immigration and regional competitiveness. Besides it points out the importance of immigrants' inclusion. The next section focuses, complemented with the outcomes of a multivariate statistical analysis, on the theories on determinants and causalities of migration, exploring the connecting points with the issues of the regional policy.

**Keywords:** immigration, regional development, subsidiarity, theories

#### **Absztrakt**

A humán migrációt megjelenési formái mellett politikai, gazdasági és társadalmi háttere, a folytonosan alakuló környezet, valamint az ezekből táplálkozó víziók és döntések határozzák meg. A mai térbeli elemzések ugyanakkor kiváltképp a vándorlások irányaira, hatásaira koncentrálnak. A migráció tehát nem csupán aktualitása miatt izgalmas terület. Többféle szempontú és több szinten megközelíthető vizsgálatoknak kínál lehetőségeket, tudományágak és elméletek összetett alkalmazásával.

Ide sorolhatóak a migrációkutatás tételei is. Ezen elméletek egy része a klasszikus alapmodellek rendszerét képezi, többségük azonban az 1980-as évekbeli paradigmaváltást követően alakult ki, illetve formálódik a mai napig.

A tanulmány azt vizsgálja, mennyiben alkalmazhatóak a maga idejükben és tárgykörükben bizonyítást nyert migrációelméletek a bevándorlás hatásainak elemzésekor, különösen a regionális versenyképesség szempontjából. A kérdés megválaszolásában néhány kiválasztott empirikus kutatás eredményeinek értelmezése is segítségünkre van. A migráció okait és körülményeit feltáró elméletek összevetése, rendszerezése mellett sor kerül az integráció kérdésére, illetve a kapcsolódó kritikus pontok bemutatására is.

**Kulcsszavak:** bevándorlás, elméletrendszer, fejlettség, migráció, régiók



## **INTRODUCTION**

Newcomers and foreign residents make significant contributions to development at national or local level: with their workforce, experiences and knowledge, but with their cultural characteristics or international connections as well. On the other side, mobility brings negative effects with: expenditure of the welfare system, conflicts in the society, discrepancies regarding values and goals of the host community, and, of course, deprivation.

Determinants of human migration have an influence of the intensity, direction and other factors of development in the host region, however, these elements and the interference among them correlate a number of further variables as well. The interference between migration and competitiveness should not only be analysed after welfare but the well-being of the local inhabitants as well, however, researches on migratory effects generally focus on certain popular elements (Haas 2007, Hahn 2012), highlighting in most of the cases the fiscal effects and the cultural diversity. A comparative approach to the relevant literature, a good combined dimension of evaluation lead us thus to a multidisciplinary viewpoint.

Although, the factors of local or regional competitiveness vary and are in coherency with one another: labour market issues, urban development, topics of knowledge and education, innovation, crime and security, social segregation, fiscal marginalization, international connections etc. According to Zolberg we should analyse the impacts of immigration from more complete and interdisciplinary aspects on the base of additional theories relating to development, market or historical structures (1989). The aim of this study is to introduce the theoretical background summarizing the mainstream solutions, the role of the migration theories and these of the regional science as well.

## **OBJECTIVES AND METHODS**

Analysing migratory issues, both the widely-used and the modern migration theories provide us with multidimensional aspects, however, a comparison of the models and the concepts relating development and regional issues are useful as well.

As for the linkages between immigration and regional competitiveness, it is thus essential to explore the role of the migration theories and these of the regional science. Theories of migration, both from classical and modern viewpoint, can help us better understand the migratory factors of local competitiveness, analyse the phenomena from a more complex aspect. However, the critical approach to and application of these theories is essential, since they are often controversial and are partially independent from previous results.

The paper focuses on the applicability of the migration theories and these of the regional science in connection with the linkages between immigration and competitiveness. It also aims to point out the importance of a controversial topic, the immigrants' inclusion. The study besides tries to explore the role of determinants and circumstances of immigration in the development of the host country or region. This one will be additionally illustrated with a short introduction of the outcomes of a multivariate statistical analysis of migratory and competitive variables.

## RESULTS AND DISCUSSION

### Applicability of the basic theories

Theories to development and regional development are useful for researcher in migratory issues. A comparative approach to the literature of the migration research and the regional science leads us thus to a multidisciplinary viewpoint, similar to a good combined dimension of evaluation.

Three schools of the regional development can particularly help us better understand the interaction between immigration and local development: Keynesian economics, with its governmental interventions and multiplier effects (Shaw 1989), the exogenous theory on the base of governmental investments and the importance of mobility (Lengyel 2010), and the endogenous growth theory with its local resources and spill-over effect (Ortiguera, Santos 1997).

**Table 1** Applicability of the three main theories of the regional science in migration strategies

<i>Theory</i>	<i>Elements</i>	<i>Period</i>	<i>Factors of competitiveness</i>	<i>Factors to migration policy</i>
Keynes	Government expenditure, quantitative growth, cumulative causation	1960-1970	Discrepancies in regional development, issues of income	Regional discrepancies in managing migration
Exogenous	Basic government role, mobility of capitals and external factors	1970-1990	Employment and standard of living, infrastructures	Changes in legal and administrative environment, adaptation in national policies
Endogenous	Bottom-up movements, local resources, integration	from late 1990s	Movement of knowledge, human and social capital, standard of living	Changes in competence levels, issues of cooperation and integration

Source: own edition after Capello (2007) and Lengyel (2010)

The topic of the effects of temporary and circular migration are basically forgotten theories, though its structure is regulated by the interests of the economies and thus the regional host society is able to react to the changing demand in the labour market (Carrera, Hernandez-Sagrera 2009). The European Union still only calls attention to this issue in its communication first in 2007 (COM 248/2007). On the other hand, Wickramasekara emphasizes, that in case of temporary settlement the integration costs are lower (2011).

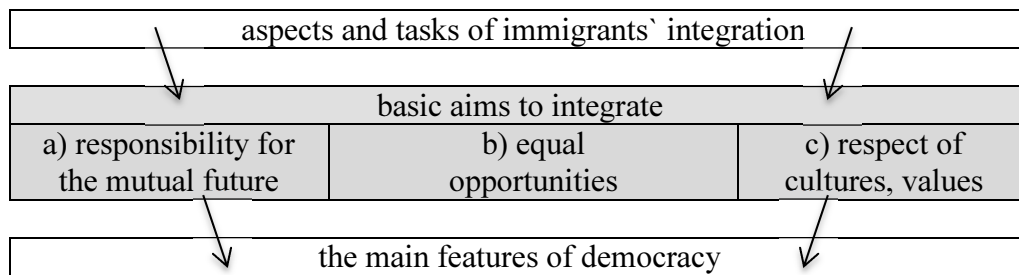
### **The literature on immigrants' inclusion**

The interpretation and determination of social, economic or political integration of a newcomer vary (Angenedt 2000). In the same way, we find in the current political issues – but also in the literature – different type of definitions e.g. assimilation, incorporation, integration and inclusion.

Since the 1980s European states have been facing the challenge, how to include immigrants on different stages. Like Fassmann and Münz in their book also present (1996), the illusion of temporary or circular migration has disappeared, guest workers stayed in their new homeland, new migratory groups have been arriving: new labour force, more family members, students, refugees and illegal migrants as well. Marginalisation of migrants could have negative effects on the democratic politics, since it undermines the process of democratic representation and accountability (Jones-Correa 1998). The negative consequences of exclusion could therefore scatter further as social and economic integration, just as the backwash-effect from Myrdal (1960). Thus, national strategies and solutions regarding the integration of immigrants should cover the key areas of growth and well-being: labour market, education, welfare system, civic and political life, and these are only the main points – systematically like by an urban development strategy (Palmai, Patay 2014).

After summarising the areas of inclusion of immigrants, the role of integration can be, however, also derived from the aspect of the theories in connection with democracy, as Fig. 1 shows: One of the basic elements of democracy is that (a) all members of a community have a share in the decision-making processes regarding the future of this community. The second element (b) of a democracy is the equality of opportunity in the social, economic and politic area – these two cases are also defined as main features of the democracy e.g. according to the Democracy Reporting International (2011). Entzinger (1999) adds to this, that another characteristic of modern democracies in the western countries is the respect for cultural differences, identities and values (c).

**Figure 1** The role of inclusion in democracies – from the aspects of the theories



Source: own illustration

The literature approaches to the participation of migrants from different aspects. According to the theory of Morales and Giuni (2011) the meaning inclusion of immigrants can be defined on 4 levels: macro, mezzo, micro level and the level of individual.

Theories privilege the national context, and this is maybe because the range of citizenship and immigration policies is always defined at national level. Regional actors and local governments, however, know the daily life of migrants, strengthening the linkage between migrants and natives (Penninx et al. 2004). Local governments experience first challenges brought by ethnic, cultural and social diversity that immigration causes (Rogers, Tillie 2001). It is also essential to emphasize the civil level, it means, the importance and role of civil organisations. After Koopmans et al. (2005), on the local level civil society organisations open opportunities for migrants, motivating them for collective action. These facts lead us to the statements of the regional sciences especially regarding networks, and social capital (Bourdieu 1978, Loury 2005).

### **The role of migratory determinants in regional studies**

The European Union also calls our attention to the potential immigration brings with for the development of the European states (European Commission 2015).

At the same time, according to Todaro's hypothesis (1969), immigrants leave their home on the grounds of their – often sketchy – conception on the possibilities. Derived from this and from the theories of Borjas (1989) or Treibel (2011) but also from several empirical studies, groups with less potential on the market (lack of education, experience, possession or contact) tend to migrate to countries or urban areas that can offer a secure welfare background or an equal income distribution, while migrants with higher education, more experiences or possessions usually chose a destination with stronger market competition despite the social inequality in the host country.

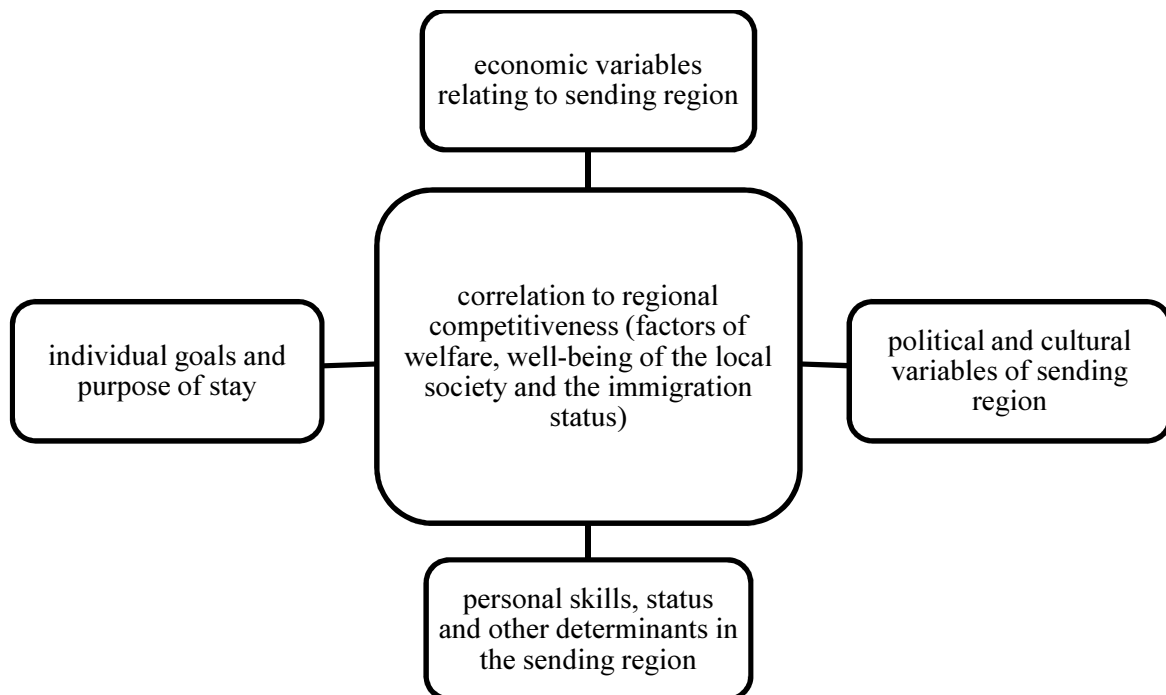
Determinants of human migration have an influence of the intensity, direction and other factors of development in the host region, since migrants bring these determinants with (Collins 2013). Thus personal competitiveness of migrants must affect the factors of the regional and nation competitiveness of the host country. It means, migratory determinants and

the political, fiscal, cultural circumstances of emigration are crucial for the personal and professional development of migrants and therefore for the regional competitiveness as well (e.g. employment or social cohesion).

The theory of Collins can be illustrated on the base of the outcomes of a multivariate statistical analysis, e.g. as Figure 1 shows. This example presents the result of a study that explored how newcomers (from 35 sending countries, from the EU and other macroregions) can contribute in Austria and in addition in Vienna to the development from national, regional or personal aspects. The administrative and legal categories, e.g. the degree of integration, the purpose of stay etc., were defined after the terms of the Austrian Aliens' Law Packet (Peryl, Cayci 2011). The parameters cover the main determinants (economic and political features of the sending countries, female employment etc.), purpose of stay (applied permit, family options etc.) and consequences of settlement (e.g. labour market performance, socioeconomic factors, renewal of permits).

The next figure (Fig. 2) presents in summary the outcomes of this study, as an example to illustrate the linkages between migratory determinants and competitiveness, the role of the circumstances of immigration and of the immigrants themselves in the personal and national/regional competitiveness.

**Figure 2** Personal determinants and regional competitiveness - *the outcomes of a multivariate statistical analysis, derived from indices on the circumstances and effects of immigration in Austria (2013)*



Source: own illustration, the indices of the study were derived from the data of the Austrian Statistical Office, Austrian Ministry of Interior, Statistics of the UN, Austrian Integration Office and Vienna City Government

A multivariate analysis can thus also indicate the coherency and the linkages between the determinants migrants bring with and the factors of the regional competitiveness, demonstrating this theory of Collins. Migration theories help us thus evaluate the results, understanding the interference between individual and regional competitiveness. It is relevant because a part of the migrants arrives without a detailed plan, they do not gather enough information regarding the future possibilities or hardships they could endure in the host country. However, some migrants aim to stay for a long time, want to work, establish security and take part in the civic life too – while others might only hope to get involved into the social and political system.

### **The role of the determinants of migration in the literature**

Since the research field of migration is multifaceted, the different areas of migration research and their theories should be analysed from different viewpoints.

Portes identified four different fields: the origins and determinants of migration, the directionality and continuity of the movements, the utilization of the appearance of the mobile labour force and the socio-cultural adaption (1999). The first two research fields, the “old school” paradigms provide us with basic concepts and conclusions regarding motivations and proceeds of migratory movements, such as the behaviourist - and the equilibrium models, and the network concepts. Massey (1993) und later Favell (2008) missed the interdisciplinary approach in migration theories. Castles (2008) and de Haas (2007) also came to similar conclusions highlighting that the literature of the migration research develops often independently from the previous findings or the evaluations of other disciplines. However, while I agree with these statements, the basic or most quoted migration models and theories can essentially be grouped into four sections: sociology, economics at macro- and micro level, human geography and a group of multidisciplinary approaches (Tab. 2):

**Table 2** The main migration theories along disciplines

<i>Sociology</i>	<i>Economics</i>		<i>Human geography</i>	<i>Multidisciplinary aspects</i>
Social capital Networks Pull-push model Transnationalism	Macro-	Micro-	Gravity model Theory of transitions Institute-systems	Migrations systems Weltsystem theory Cumulative causality
	Neoclassics (1) Keynesians Dual market Neo-marxists	Neoclassics (2) Human capital New economics		

Source: own edition based on Zlotnik (1998) and Kupiszewski (2002)

Migration theories can be analysed and classified on the base of other aspects as well, thus the particular methods of classification support us in evaluating and applying the different models the literature offers. Theories can be grouped e.g. as basic (classical) and modern ones (Thieme 2003), as optimist (developmentalism) or pessimists (Marxism) theories (de Haas 2008), and furthers, on the base of the reference level such as macro or micro level theories (Morawska 2005). The dominant theories in explaining causes of migration are the follows: the neoclassical theory at macro and at micro level, the dual market, human capital and welt system theories, the push-pull model, the new economics of migration and the model of networks. The migration models derived from different theories of the economics, can be considered both at macro and micro level – with their underlying assumption that migrants move on the base of rational economic considerations and reliable information relating to costs and benefits. In summary, theories of the macro-level can be described – after comparing the mainstream thoughts – as complementary ones, since they only focus on some main factors, leaving other contexts out of consideration such as political background, cultural attitudes, environmental condition or the individual elements of the decisions.

Theories of migration have to account for complex migration systems, according to Arango (2000) or Massey (1999), which encompass the geographical mobility from the time of industrializing, over regimes of transition to mature economies and to an era of globalization and regionalization.

### **Regional policy and subsidiarity**

The results of the regional science provide us with suggestive aspects regarding regional competitiveness and regional policies in migration research. Global competitiveness motivates provinces and cities to work to attract and retain the creative and talented human capital (Florida 2005).

Immigration policy can thus be designed to direct and manage migration, becoming a serious component of policies developed to react on global competitiveness. Some countries with migratory experiences all have programs to attract the best they want (Gafner, Yale-Loehr, 2010). Thus subnational powers are working in various ways to hold their positions as globally attractive and competitive in terms of human resources as well. The roles of municipalities have gained importance in recent years due to the implementation of decentralised policies, though experiences have shown different types of evolution of modernisation in the western and eastern countries (Torma 2003). This modernisation was based on the aspects of fiscal issues, effectiveness and subsidiarity in Western Europe (Balazs 2003). At local level, migration and migration policies have more direct effects. So provide regional or local authorities support in strengthening the linkage between migrants and natives

(Penninx et al. 2004). Local governments experience first challenges brought by ethnic, cultural and social diversity that immigration causes (Rogers, Tillie 2001).

One of the newly important elements of modern governance is - beyond efficiency – the ability for cooperation (Schedler, Proeller 2000). Matschek and Wirth point out that it is the local level that has been getting more and more tasks over the decades, since in addition to decentralisation; and there is a need for solutions for new fiscal problems, demographical challenges and social conflicts. Here can the regional science provide us with additional aspects. A crucial point in this is the subsidiary approach to the human resources, as Varun Uberoi and Tariq Modood also point out that legal exemption for anti-discrimination practices and multicultural education policies remain mainly in place and not countrywide (2013).

Thus, today, a cooperative attitude of the regional or local government regarding integration of immigrants and the priority of information-transfer among the actors (local community, immigrants, institutions, authorities, entrepreneurs, civil groups, media) profoundly affect the outcomes of the labour market and thus both the social and economic development of the region.

## **CONCLUSION**

The demographic profile of a region is usually seen as basic background regarding competitiveness and growth. Immigration has, however, not only impacts on the demography, immigrants can contribute significantly to the economic and social development of regions or urban areas.

Thus beyond national legislative, subnational levels also have an important role. The circumstances and effects of the inclusion can be observed in local context as well. It is the local level that directly shapes the attitudes of the native population towards migrants and the immigrants' contribution to the development. The characteristics of the individual level, of the migrants themselves, can also help us to find further solutions for this topic, but the local civil communities have also an impact on the opportunities and willingness of migrants for the participators. Theories of migration, both from classical and modern viewpoint, can help us better understand the migratory factors of local competitiveness, analyse the phenomena from a more complex aspect. However, the critical approach to and application of these theories is essential, since they are often controversial and are partially independent from previous results.

A comparative approach to the relevant literature and a good combined dimension of evaluation lead us thus beyond a simplified interpretation of migratory effects to a multidisciplinary viewpoint. The interference between migratory movements and



development of subnational units seems to be an interesting but yet largely unexplored topic for researchers and regional policy makers.

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## **COMPARISON BETWEEN EUROPEAN PROTESTANT AND CATHOLIC ECONOMIC DEVELOPMENT THROUGH MODERN PAINTING**

### **AZ EURÓPAI PROTESTÁNS ÉS KATOLIKUS GAZDASÁGI FEJLŐDÉS ÖSSZEHASONLÍTÁSA AZ ÚJKORI FESTÉSZET TÜKRÉBEN**

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#### **Abstract**

Since Max Weber, economists suggest that religious activity affects the European economic development, and this hypothesis was proven between the seventeenth and nineteenth centuries. Accordingly Protestant economic thinking accelerated the evolving system of capitalism, giving adequate attitudes to the accumulation of wealth. This research supposes that the mentioned capitalist approaches have their own impressions on visual arts, particularly on modern painting. It examines almost nine hundred religious paintings from the fifteenth to nineteenth centuries, investigating signs of business activities on the artworks. This form of qualitative examination apply the methodology of content analysis. As a result of the study the former hypothesis of Weber could be verified from multidisciplinary approach.

**Key words:** Spirit of capitalism, Protestant ethics, economic development, modern painting

#### **Absztrakt**

Max Weber óta tudjuk, hogy a felekezeti hovatartozás befolyással bír egy térség gazdasági fejlődésére, legalábbis a 17. és 19. század közötti Európában ez a tétel igazoltnak látszik. Ennek megfelelően a protestáns gazdasági gondolkodás elősegítette a kapitalizmus születését, hiszen a korábbi világszemlélettől eltérő attitűdöket állított a vagyon felhalmozásának szolgálatába. Jelen tanulmány azt vizsgálja, nyomon követhetőek-e a protestáns és katolikus gazdasági gondolkodás különbségei a festészetben, és amennyiben igen, milyen következtetéseket vonhatunk le azokból. Az elemzési sokaság csaknem kilencszáz vallási témájú festményt tartalmaz, a mintába ebből azok a művek kerültek, amelyek gazdasági tevékenységet is megjelenítenek. A tanulmány kvalitatív kutatáson alapul, a tartalomelemzés technikáját alkalmazza. Az eredmények alapján Weber megállapításai az újkori festészet alapján is megerősíthetőek, a művek gazdaságetikai különbségeket tükröznek.

**Kulcsszavak:** a kapitalizmus szelleme, protestáns etika, gazdasági fejlődés, újkori festészet

## **INTRODUCTION**

According to Weber (1920) the spiritual reason for capitalism is Protestant ethic, while the materialistic origin was the capital accumulation after the Great Geographical Discoveries,

and the reinforcement of private ownership. *The Protestant Ethic and the Spirit of Capitalism* argues that Protestant entrepreneurs created a brand new business atmosphere on the market. It connects economic activity with vocation (Luther) and the teaching of predestination (Calvin), putting profit maximization into a devotional level. Firstly, the solid work of man has become a concrete calling from God, which encouraged people to do their best in business life. This enterprising spirit and saving lifestyle characterized Protestants more than their Catholic fellows – argued Weber. In connection with predestination Calvin (1585:237-239) thought that every people had been concretely determined for the afterlife in Heaven or Hell before their birth, which exclude any human efforts to influence the quality of their afterlife. However economic success played a key role in their earthly lives, because it signaled that a person had been chosen for salvation (Barro & McCleary, 2006:50), that is why Protestants were committed to gain more and more. Hard working and moderate lifestyle has led to wealth accumulation, hence the spirit of Protestantism contributed to the birth of capitalism referring to Weber.

### **OBJECTIVES AND METHODS**

The first part of the publication processes secondary sources about the sociological relation between economy and religion. The questions are given: is it possible, that religious-based individual traits caused economic difference between Protestant and Catholic countries? how can we recognize the mentioned diverse attitudes and traits? This part of the paper provides empirical evidences for the distinct economic performance, which are explicable with Weber's theory (Weber, 1920). Besides statistical verification the main section of the study compares Italian and Dutch religious and economic themed paintings to explore the differences between Catholic and Protestant economic thinking. After this multidisciplinary examination the paper suggests some other explanations for the economic gap among European countries, between 1700 and 1950.

The aim of the publication is presenting the differences between Protestant and Catholic work ethic from fine arts of the modern period. In this way the study collects Bible-themed paintings between 15<sup>th</sup> and 19<sup>th</sup> centuries (888 pieces) and separates those ones which relay economic message (85 pieces). The method of the examination is content analysis. Contents are such human manifestations which are well documented, decipherable and the analysis is repeatable (Krippendorff, 1995). In a wider sense verbal and written communication, music, paintings or motions could be the subjects of content analysis. According to the suggestion of R. P. Weber (1985) the analyst could reveal by this method cultural characteristics, which are uneasy to examine by classical statistical techniques. Protestant and Catholic work ethic from

historical aspect are much more undercover than analyze them with mainstream scientific methods – that is why the paper applies the alternative method of content analysis.

The contextual units of the analysis are Bible-themed paintings, exactly 888 pieces of European artworks from 15<sup>th</sup> to 19<sup>th</sup> centuries. In the process of data reduction I have examined all of them, than I have chosen those paintings which conclude economic contents. This narrowed database became the source of primer analysis. The study classifies these economic and religious themed artworks into four categories and quantifies the frequencies of each economic messages (categorized by 24 exclusive topics) readable from the paintings. Before describing the results of the examination the paper reviews historical connection between religious affiliation and economic development.

### THE ROLE OF RELIGION IN MODERN ECONOMIC DEVELOPMENT

There is a wide discussion about the effects of religion on economic life (see Barro & McCleary, 2003, 2006; Guiso et al. 2003, 2006), which could be a detailed topic of another paper. Nevertheless the strong correlation between Protestant dominance and the level of economic development is statistically detected (Young, 2009). According to historical GDP values from Maddison database Protestant countries had overtaken the Catholic world in terms of income from the 17<sup>th</sup> till the middle of the 20<sup>th</sup> century.

**Figure 1** Religious divisions of Europe in the middle of 16th century

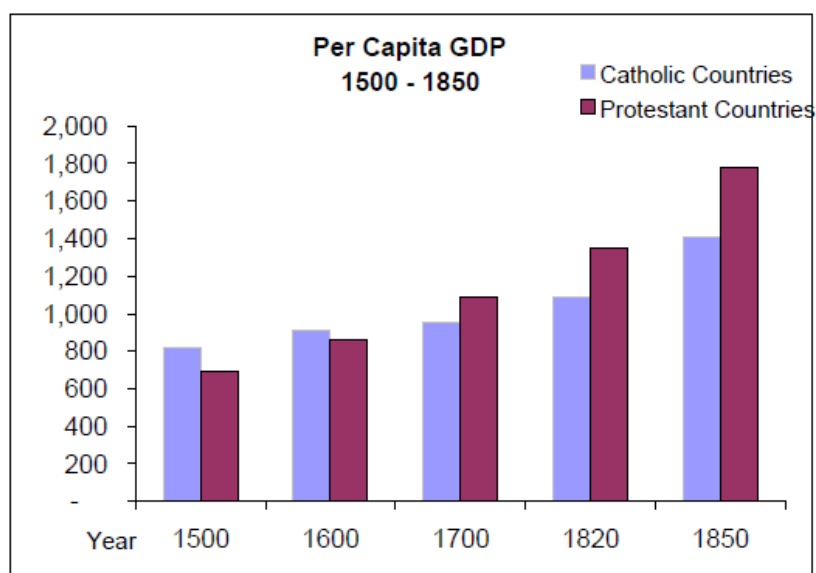


Source: Teacherweb

Religious divisions of Europe in the middle of the 16<sup>th</sup> century are shown in Fig. 1. In the modern era many European countries preserved their Catholic majority. Mediterranean states, especially France, Venice, Naples and the Papal States were largely determined by this religion. North and Central parts of the Continent were influenced by reformers, the people of Netherlands and Scotland were Calvinists, the Holy Roman Empire and Scandinavian nations belonged mostly to Lutheran denominations. It signals rapid social transformation, because the population of these countries was all Roman Catholic prior to 1520.

Besides religious statistics it is worth to study historical economic development of the mentioned states. Economic data about the modern history are available only as estimations in the Maddison database. Between the 15<sup>th</sup> and 19<sup>th</sup> centuries we know GDP per capita measures connected to seven Western European Catholic<sup>6</sup> and eight Protestant<sup>7</sup> countries. Those countries, which remained Catholic after the Reformation were traditionally the richer areas of Europe in the beginnings of the modern era. However – based on Young's (2009) calculation on the database – economic performance (GDP per capita) of Protestant countries has overtaken the same indicator of Catholic countries by 1700. This phenomenon was unusual, because formerly these eight states possessed more modest income than the other seven countries (Fig. 2).

**Figure 2** Estimated GDP per capita (GK\$) in Protestant and Catholic Regions of Europe, 1500-1850



Source: Young's (2009:5) calculation on Maddison Database (2003)

<sup>6</sup> Austria, Belgium, France, Ireland, Italy, Portugal and Spain

<sup>7</sup> Britain, Denmark, Finland, Germany, Netherlands, Norway, Sweden and Switzerland

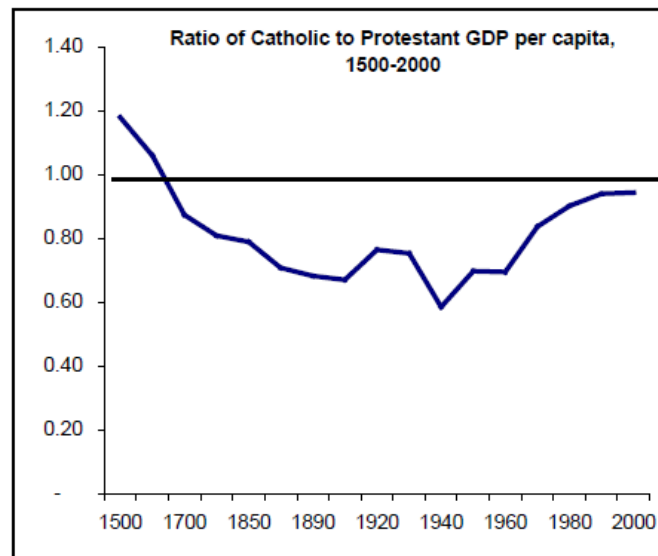
For example in the modern era – according to the estimations – Italy did not show economic recovery, it remains stable around 1500 GK\$ per capita until the end of 19<sup>th</sup> century. Meanwhile the Netherlands has already reached the Italian economic level on the turn of 15-16<sup>th</sup> centuries and has an enormous growth until the beginnings of the 19<sup>th</sup> century. Based on Weber's thesis, religious affiliation was the quint essence of economic development for both of them. As Young summarizes his calculations<sup>8</sup> on Maddison database: "For more than 250 years, Catholic Europe lagged behind the Protestant countries by a substantial margin, averaging 27% lower incomes between 1700 and 1960" (Young, 2009:10).

Naturally the development of Venice, which as a centrum area played key role in the European economy for centuries, has broken not only for religious reason but due to the effects of the Great Geographic Discoveries. The period of colonization favored Western European states like England and the Netherlands, whereas Venice stagnated. In a long run still those countries prospered which has got adequate economic culture for sustainable development, therefore prodigal states as Spain or Portugal – which were mainly Catholic – could not keep their wealth from the Discoveries. Referring to the research of McCagg (1985) Protestants had considerable influence on industrialization which facilitated Dutch and English economic growth. Acemoglu and Robinson (2012) highlights the institutional differences between the mentioned countries (innovations at finances, contract law, commerce and other areas), which in my opinion generated from distinct religious and cultural background. I can confirm this statement with some instances.

The Roman Catholic church ruled economic activity with more rigorous instructions than Protestant denominations in the modern era. "Simony was condemned because it was viewed as the sale of Christ's charisma and usury was condemned because it was the sale of God's time" – says Rowell and Conelly (2012). Furthermore Pope Gregory IX. declared insurance as illicit transaction, while Portuguese (Carmelite Joao Sobrinho) and French (Pierre Tartaret) theologians enhanced the same conviction (Ceccarelli, 2001). These restrictions on business transactions limited economic activity and performance at the same time. In contrast with medieval tradition Luther did not condemn commerce at general, only the ungodly forms of this. He already permitted usury in the case of damage and loss of profit (Luther, 1983). Calvin was more permissive in this query, he lifted a ban on usury (Sebestyén, 1911). These Protestant regulations have enabled institutional changes in the business sector, which contributed to the prosperity of Protestant countries.

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<sup>8</sup> Young's calculation relies on per capita GDP of seven Catholic and eight Protestant countries.

**Figure 3** Catholic Economic Performance Relative to Protestant Regions.

Source: Young's (2009:11) calculation on Maddison Database (2003)

Fig. 3 shows us the widening gap in the performance of Western European economies from the beginnings of the 18<sup>th</sup> century. Only the convergence measures of the European Economic Community (1957-) reduced this inequality between Protestant and Catholic countries, according to Young's explanation (2009). The question is, how can we detect the distinctions between economic thinking of the examined countries? Are there any historical evidences or visual signs of cultural differences? The following part of the paper investigate that.

### **RESULTS: ECONOMIC DEVELOPMENT THROUGH MODERN PAINTING**

Cultural differences firstly appear in the way of thinking, attitudes and lifestyle. The imaging of religiously inspired living is apparent in modern fine arts. For collecting more evidences about cultural and economic correspondences, the following part of the study compares Italian and Dutch religious paintings between the 15<sup>th</sup> and 19<sup>th</sup> centuries.<sup>9</sup> The goal of this investigation to introduce those visual signs which foreshadow the differences in economic thinking of the mentioned countries.

Firstly I have collected Bible-themed paintings from an online database (ArtBible)<sup>10</sup>, where I've selected artworks from the modern era (15-19<sup>th</sup> centuries). The narrowed database contains 888 paintings with the detailed regional distribution in Fig. 4. After that I have

<sup>9</sup> Martin Luther made his declaration (the 95 theses) on October 31, 1517. The period of my investigation extended the beginnings of the modern era, which enable to analyse art before and after the Reformation.

<sup>10</sup> Of course there is not any online database which conclude the whole collection of Bible-themed paintings. The chosen one includes the most famous front-main painters and their works on the topic and some of the less known artists.

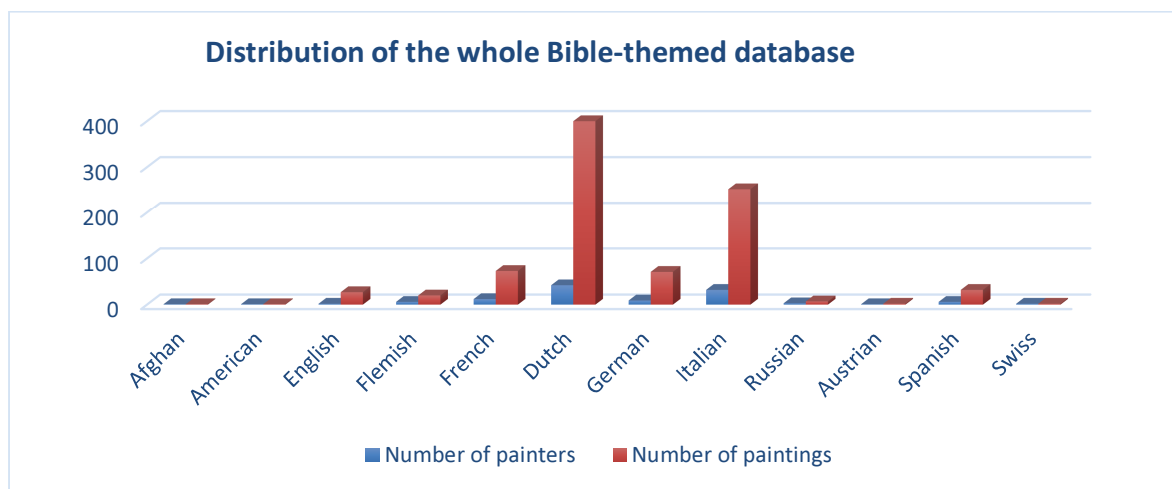


chosen the artworks referring economic activities, and these ones became the subject of the investigation.

### Appearance of biblical topics in modern painting

Probably man consider Italian frescos as major Bible-themed paintings from the modern era but there are more Dutch artworks in the examined period than Italian ones as it is pointed out on Fig. 4. Let us think about the extraordinary lifework of Rembrandt, Brueghel, Van Eyck or Van Gogh! They all verify the importance of Dutch fine arts in the period.

**Figure 4** Territorial distribution of Bible-themed paintings, 15-19<sup>th</sup> centuries



Source: Own edition

Most of the paintings process classical religious topics like the tower of Babel, the expulsion from the Garden of Eden, the life situations and messages of Jesus. The modern era proved to be a fruitful period in Christian art, when biblical topics came to be a popular field to apply brand new techniques. The freshly discovered geometrical method of perspective firstly presented by religious artworks in the Quattrocento such as the majestic painting of the Last Supper by Leonardo da Vinci or the Holy Trinity by Masaccio.

The main difference between Protestant and Catholic artists, that the latter created images more often for sacred usage, as decorations of temples and chapels. Protestants rejected the adoration of God in connection with religious images, some of their leaders – such as Calvin or Zwingli – encouraged to remove these images for prohibiting idolatry (they were called iconoclasts). Therefore Protestants regarded Christian art as more profane thing than Catholic people. The Council of Trent (in 1563) as the most determining event of Counter-Reformation, determined that religious art should be more focused on religious subject-matter

and less on material things – like economic activities – and decorative qualities (IV. Pius, 1563). Italian painters according to the Twenty-fifth session of the decrees had to avoid everything that is profane and strengthen the holiness of the artworks.

**Figure 5.** The creators of Bible-themed works by the numbers of paintings with economic aspects



Source: Own edition

### Illustrating economic activities on religious paintings

Furtherly I have examined all of the 888 paintings by content analysis and selected those ones, which illustrate economic aspects of the Bible stories. I have found 85 pieces of work concerning to some kind of market activities. The creators of the selected paintings is shown in Fig. 5, where the larger name connected to the more fruitful painters on the topic. Those painters excel markedly from the collection who originated from Protestant areas like Rembrandt, Aertsen, Blake and Pieter Brueghel the Elder. The list of the painters and their artworks which were the basis of the analysis is shown at the end of the paper.

There are three categories of the examined paintings: 1) illustration of concrete economic parable or message from the Bible, 2) representing economic activities from Biblical ages or 3) demonstrating traditionally religious topics in business environment (for example the crucifixion with a market scene). The Dutch painter Peter Aertsen is famous for his works related to the least category, such as the painting of “Christ and the Adulteress” in Fig. 6. At the first glance man can think that it is a secular painting about some market activities but a Biblical scene – which gave the title of the work – is illustrated in the background.

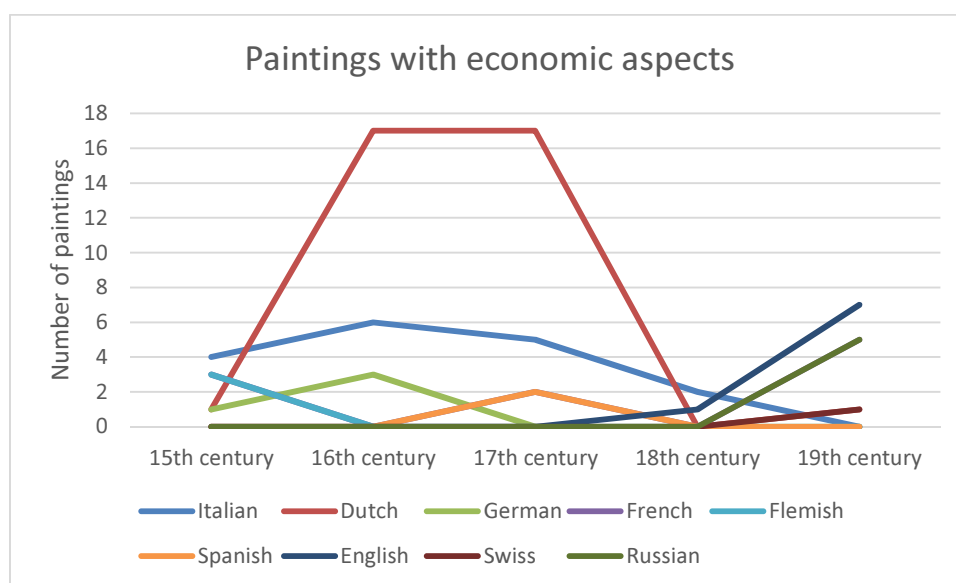
**Figure 6** Christ and the Adulteress by Peter Aertsen, 1559.



Source: ArtBible

The selected paintings with economic aspects connect religious topics with secular life. It is an interesting question whether Roman Catholic or Protestant painters tended to do this kind of artworks. As shown in Fig. 7, the number of Dutch paintings highly exceed the number of Italian ones and it originates from not only the larger rate of pieces from the Netherlands, because they have relatively the greatest number of this kind of artworks. Namely 9% of Bible-themed Dutch paintings represent economic or business activities, while Italian painters did the same only in 6.75% of the cases. In the time of reformation and the born of capitalism (mainly the 16-17<sup>th</sup> centuries) this rate was 20% for the Netherlands (!) and it has been reducing for the following centuries. Meanwhile the rate of artworks with economic aspects did not changed in Italy, it remained stable at the mentioned level permanently. It points to the fact that in the 16<sup>th</sup> and 17<sup>th</sup> centuries religious way of life and economic activity linked more likely in Dutch culture, than in Italian one. The previously mentioned Catholic decrees from the Council of Trent give us sensible explanation for this result.

**Figure 7** Territorial distribution of Bible-themed paintings with economic aspects, 15-19<sup>th</sup> centuries.



Source: Own edition

After quick selection and description we could examine the message of the paintings. The results of this study indicates that Dutch artworks are more pragmatist than Italian ones which latter illustrate mostly sentimental religious stories. In contrast artworks from the Netherlands often show Biblical persons as ordinary people in average life situations. Economic message of the paintings from the two regions also differ. Main economic topic of Dutch paintings are work, redistribution, market, investment and commerce (see at Fig. 8) – which all relate fundamentally to capitalist ideology and practice.

On the other side Italian religious and economic-themed artworks deal with taxation (payment and avoidance), divine providence, coveting, greediness and overconsumption. Instead of thinking about prosperity (as Protestants did) they pointed to the great market sins and the duties for the state. There is a huge difference between the two economic mentalities, because the first one encourages business activities and the latter one warns about it. The results of this investigation show that Dutch masters put market coordination, while Italians bureaucratic coordination into the canvas.



**Figure 8** Main economic topics of Dutch (on the left) and Italian (on the right) paintings



Source: Own edition

## CONCLUSION

According to Max Weber's assumption, Protestant ethics is the key factor of economic differences between European countries in the modern era. This paper applied multidisciplinary approach to investigate the relevance of this theory by examining cultural and economic correspondences. Naturally, besides Weber's explanation, there are some alternative hypothesis about the connection between religion and modern European economic development. They include 1) the impacts of the Jewish community on innovating trade (Sombart, 1924; McCagg, 1985); 2) the importance of secularization by liberalizing economic activity from religious control (Tawney, 1926); 3) the great effects of Bible printing and education on literacy (Becker & Woessmann, 2009, 2010), 4) the new business class established due to the access to Atlantic (slave) trade (Young, 2009, Acemoglu et al., 2005). The frames of this study do not allow discussing all of these opportunities, so it investigated the validity of Weber's thesis on a multidisciplinary field.

The main goal of the current study was to highlight the differences between Protestant and Catholic work ethic from fine arts of the modern period. In this way it collected Bible-themed paintings between 15<sup>th</sup> and 19<sup>th</sup> centuries (888 pieces) and separated those ones which relay also economic message (85 pieces). The findings of this study suggest that Protestant painters illustrated more likely religious topics in business environment than their Catholic

contemporaries. Especially it characterized the Netherlands for the 16<sup>th</sup> and 17<sup>th</sup> centuries, when reformation had considerable influence on their society.

Regarding to the message of these religious and economic-themed paintings Italians concentrated on the good relationship with authorities (tax payment, corruption) while Dutch painters encouraged entrepreneurship and the movement of the invisible hand. The latter reflects to Protestant work ethic and the beneficial attitude for wealth gaining. The fine arts of the Netherlands represent the influence of this country on capitalism.

Although the study has successfully demonstrated the differences between the modern Italian and Dutch paintings, a number of important limitations need to be considered. On the one hand painters in the modern ages often determined by their customers (bankers, churches etc.), therefore it is possible that only a narrow part of the society declared the mentioned business values. For example the Adoration of the Magi by Sandro Botticelli has turned from sacramental illustration because it inserted Medici portraits on the canvas satisfying the needs of the family (Gila, 2006). From another angle it is true that Dutch painters were mostly Protestants and the Italians belonged to Catholic denominations, we could find odd men out. The Flemish Hugo van der Goes for instance moved to a monastery at the peak of his carrier (Gila, 2006) or Van Gogh disappointed in Christianity, even as a teenage he planned to be a minister of the Dutch Reformed Church as his father was (Erickson, 1998).

Whilst this study could not satisfactorily confirm the theory of Weber, it did partially substantiate his concept. These findings may provide several contributions to the current literature from an artistic perspective. This research demonstrated that economic processes can be examined from multidisciplinary approach, and some kind of economic theories are demonstrable in fine arts. It is recommended that further research be undertaken in the field for sociology of religion.

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**The examined artworks in alphabetical order:**

Aertsen (1559): Christ and the Adulteress  
Aertsen (1553): Christ in the House of Martha and Mary  
Aertsen (1575): The Miraculous Healing of a Lame Man by Peter and John  
Aertsen (1575): The Seven Acts of Mercy  
Aertsen (1550): Market Scene  
Aertsen (1551): Butcher's Stall with the Flight into Egypt  
Aertsen (1559): Cook in front of the Stove  
Anthonisz (1547): The Fall of the Tower of Babel  
Blake (1804): God answers Job  
Blake (1795): Nebuchadnezzar  
Blake (1826): The Book of Job - 01  
Blake (1826): The Book of Job - 05  
Blake (1826): The Book of Job - 14  
Blake (1826): The Book of Job - 21  
Bloemaert (1624): The Parable of the Wheat and the Tares  
Bol (1661): Elisha refusing the gifts of Naaman  
Bosch (1516): Haywayn triptych  
Botticelli (1485): The Abyss of Hell  
Botticelli (1482): The Temptation of Christ  
Breenbergh (1655): Joseph Distributing Corn in Egypt  
Breenbergh (1640): Christ and the Rich Young Ruler  
Bruegel, Peter (1566): Census at Betlehem  
Bruegel, Peter (1568): The Parable of the Blind  
Bruegel, Peter (1563): The Tower of Babel (Rotterdam)  
Bruegel, Peter (1563): The Tower of Babel (Vienna)  
Campin (1428): Mérode Altarpiece  
Caravaggio (1598): Martha and Mary  
Caravaggio (1600): The Calling of Saint Matthew  
Caravaggio (1607): The Seven Works of Mercy  
Cuyp (1652): Joseph, the Butler and the Baker  
Delacroix (1849): The Good Samaritan  
Delacroix (1852): The Good Samaritan  
Doré (1865): The Confusion of Tongues  
Dürer (1497): The Prodigal Son among the pigs  
El Greco (1600): Scourging the Moneychangers from the Temple  
Flinck (1638): Isaac blesses Jacob  
Grünewald (1515): Isenheim Altar  
Hodler (1886): The Good Samaritan  
Holbein (1538): Pharaoh's dream  
Holbein (1543): Solomon receives the Queen of Sheba  
Il Guercino (1619): The return of the prodigal son  
Il Guercino (1655): The return of the prodigal son  
Ivanov (1833): Joseph's Brothers Find the Silver Goblet in Benjamin's Sack  
Lastman (1614): Abraham on the way to Canaan  
Leyden (1530): The Adoration of the Golden Calf



Masaccio (1425): Death of Ananias  
Masaccio (1425): Rendering of the Tribute Money  
Master of the Munich Golden Legend (1430): The animals leave the ark  
Master of the Munich Golden Legend (1430): The Tower of Babel  
Polenov (1900): And there was (The life of Christ)  
Polenov (1874): Prodigal Son  
Polenov (1900): John and James  
Polenov (1911): The limits of tyre  
Poussin (1652): Death of Sapphira  
Poussin (1664): Summer (Boaz and Ruth)  
Rafaello (1516): The Death of Ananias  
Rafaello (1516): The Miraculous Draught of Fishes  
Rembrandt (1635): Belshazzar's Feast  
Rembrandt (1645): Boaz pouring Six Measures of Barley into Ruth's veil  
Rembrandt (1648): Esau sells his Birthright to Jacob  
Rembrandt (1657): Jesus preaching  
Rembrandt (1655): Joseph Accused by Potiphar's wife  
Rembrandt (1629): Judas returns the silver coins  
Rembrandt (1633): The Good Samaritan at the Inn  
Rembrandt (1636): The Prodigal Son wastes his Inheritance  
Rembrandt (1627): The rich fool  
Rubens (1625): Abraham meets Melchizedek  
Steen (1679): Adoration of the shepherds  
Strozzi (1640): The Conversion of Zacchaeus  
Tiepolo (1742): The gathering of manna  
Tiepolo (1742): The sacrifice of Melchizedek  
Tissot (1882): The prodigal son in modern life: the return  
Tissot (1862): The return of the prodigal son  
Titian (1508): The flight into Egypt  
Titian (1515): The tribute money  
Titian (1568): The tribute money (London)  
Turner (1800): The fifth plague of Egypt  
Turner (1800): The tenth plague of Egypt  
Van der Goes (1475): Adoration of the Magi  
Van der Goes (1475): Rachel and Jacob  
Van-Gogh (1890): The Good Samaritan  
Van-Limburg (1409): Announcement to the shepherds  
Valckenborch (1568): The tower of Babel  
Valckenborch (1594): The tower of Babel  
Velázquez (1620): Christ in the House of Martha and Mary

# **ECONOMIC DEVELOPMENT AND ECONOMIC GOVERNANCE THROUGH THE EXAMPLE OF THE CITY OF GYŐR**

## **GAZDASÁGFEJLESZTÉS ÉS GAZDASÁGI KORMÁNYZÁS GYŐR PÉLDÁJÁN**

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### **Abstract**

Since the 1990s the metropolitan region and its governance has got into the focus of regional science again. Nowadays a newer wave of metropolitan governance is authoritative, which has exceeded the former administrative-territorial planning aspects, and has appeared on the scene as the mechanism of economic development policy. Examining the development stages of regional policy it is well-known that the classical (modern) approach was superseded by the postmodern one. While the national methods applied in the classical period were characterized by strictness, central regulation, indirect regulation of the market (Fordist approach), in the postmodern period flexibility, decentralization and direct regulation have come to the fore (Post-Fordism). In the postmodern period the state level also takes its role in the financing of innovation and research&development, and the notions of networking and competitiveness are coming more and more to the fore.

In this article I analyze these processes through the case study of Győr. After the theoretical introduction I examine the tools of economic development and economic governance in the Győr metropolitan region. Activities observed in Győr can strengthen the view-point that the processes of economic development and economic governance have nowadays been going on in parallel with each other. Moreover, the co-ordinating activities of local authorities can be observed in the work of organizations that support economic governance. In the course of the research it was also confirmed that built infrastructure can serve as a fundamental condition for the cooperation of network-systems that operate the governance system of a municipality.

**Keywords:** economic development, economic governance, Győr metropolitan region, automotive industry centre, vision

### **Abstract**

Napjainkban a nagyvárosi régiók kormányzása újra a regionális tudományi kutatások fókuszpontjában helyezkedik el, sok kutató szerint reneszánszát éli a terület. A nagyvárosi kormányzás jelenlegi szakaszában a korábbi közigazgatási szemléletet meghaladva a gazdaságfejlesztés került a városok fókuszába, s az önkormányzati szereplők mellett a gazdasági és a civil szektor szereplői is bekapcsolódtak, s egyfajta hálózatos kormányzás figyelhető meg a legtöbb helyen. A regionális politika fejlődési szakaszait vizsgálva közismert, hogy a klasszikus (modern) megközelítést a posztmodern váltotta fel. Míg a klasszikus időszakban alkalmazott állami módszereket a merevség, központi szabályozás, a piac közvetett szabályozása jellemezte (fordista szemlélet), addig a posztmodern időszakban inkább a rugalmasság, a decentralizáció és a közvetlen piacsabályozás került előtérbe (posztfordizmus). A posztmodern időszakban az innováció és a kutatás-fejlesztés finanszírozásából már az állami szint is erőteljesen kiveszi a szerepét, s egyre inkább a hálózatosodás, a versenyképesség fogalmai kerülnek előtérbe.

A tanulmányban a fenti folyamatok győri megjelenését, egymáshoz való viszonyát vizsgálom. Az elméleti felvezetést követően bemutatom a gazdaságfejlesztés és a gazdasági kormányzás Győrben megfigyelhető eszközeit, azok legfontosabb jellemzőit és szereplőit.

**Kulcsszavak:** gazdaságfejlesztés, gazdasági kormányzás, győri nagyvárosi régió, járműipari központ, jövőkép

## INTRODUCTION

The centres of power concentrating around urban regions which are often related to the operation of international enterprises play a significant role in the evolution of Hungary's economic achievement. Examples are AUDI in Győr, Mercedes in Kecskemét, Takata and Bosch in Miskolc. There have been more and more researches aimed at the achievements of the country's economic flagships, with special attention to their regional dimensions. There are countless research examples related to the economic region of Győr. (Filep et al., 2013; Czakó, 2014)

Besides the established multinational enterprises the national supplier network of SMEs (small and medium-sized enterprises) also play a significant role in the development of certain metropolitan regions, as well as the economic environment in the development of which the local self-government, government bodies, enterprises, the representatives of the academic sphere together with the educational institutions also take an active part. Nowadays the new types of cooperation of these organisations have attracted the researchers' attention. These types of cooperation are driving certain city regions towards economic governance. As it was proved by a research completed in 2015 all these types of cooperation present different operational models in certain European automotive centres.

Researchers have still been kept busy by questions on how local economic environment can contribute to the economic performance of the region, moreover, how it is worth interfering with the local economic relationships. The application of which economic development tools proves to be good investment? In what ways can economic governance as a novel initiative help? The topic of the present article is the processes observed in Győr which are related to the development of the economic environment, the economic development measures and the shift towards economic governance.

## ECONOMIC DEVELOPMENT AND ECONOMIC GOVERNANCE

The aspects of metropolitan economic development and governance (such as governance structures, organizational frameworks, methods of public policies, ethnic diversity and economic development etc.) have recently been widely discussed. (Knieling, 2014; Pike et al., 2007; Ash, 1999; Salet et al., 2003; Bacsi, 2017; Bartik, 1991; Montalvo - Reynal-Querol, 2005) There have been active scientific debates (Massey, 1988; Bajmócy et al., 2017; Ayuso-Coll, 2016; Mattoon, 1995; Jessop, 1997; Ostrom, 2010) about these issues.

Since the 1990s the metropolitan region and its governance have got into the focus of regional science again. According to many authors the renaissance of metropolitan governance that began at that time has been going on nowadays as well. (Lefèvre, 1998; Pálné, 2008; Desai et al., 2011; Herrschel-Newman, 2002) The continuous regional expansion

of the cities, the development of information and communication technologies, the failure of the welfare state, or the gradual strengthening of European integration and globalisation have all had the influence that there is a need for new regional participants which can manage, govern bigger areas from an economic point of view by exploiting the economies of scale (Lefèvre, 1998).

Examining Enyedi's stages of city growth, the current stage is the age of the urbanisation of globalised world in which the power centres controlling global processes are not primarily related to countries but to metropolitan regions agglomerating influential transnational corporations. For today some of the cities have "stepped out" of the national city system and linked up with each other at an international level to form a global network of cities (Enyedi, 2012). According to Porter, local clusters play a significant role in the global economy (Porter, 2000). Nowadays villages can be characterised as rural settlements integrated to cities which directly contribute to the development of the whole city region. In turn, strong cities more and more determine their rural environment. The cooperation can extend to numerous areas, such as common provision of public services, energy management, economic development, etc. (Faragó, 2006). Today the city and its region specially stand together, interactions between the areas are becoming more and more frequent, accordingly, what influence a city can have on its own environment is an important aspect.

Nowadays a newer wave of metropolitan governance is authoritative, which has exceeded the former administrative-territorial planning aspects, and has appeared on the scene as the mechanism of economic development policy. The concept according to which city regions must absolutely become one administrative unit formerly caused conflicts, but has now been eliminated: governance problems are to be solved via informal partnerships, and the primary aim is to stimulate economic development and cooperation between the different spheres in the theoretical ground of the new regionalism and Post-Fordism. The governance practice of the present also shows that the solutions, governance structures of different ages often coexist even today. Although the current system is based on voluntary participation, some of the state policies still use different incentives to influence the governance of metropolitan regions (Somlyódyné, 2011).

The topic of metropolitan governance is strongly related now to governance-type cooperation. According to this, the local governments establish network governance in cooperation with the participants of local business and civil sectors which surpass the strict administrative structures. The cooperation between local governments is more frequently realised in the form of network. At similar governance-type city region governance the targets are still set by the local governments, but the representatives of the already mentioned two sectors are involved in the common decision-making process as important partners. The

decisions are often made in relaxed horizontal structure which rarely creates independent organisations; it is rather characterized by a horizontal coordination. The governance methods taken from the market dominate in such cooperation (Somlyódiné, 2008). According to Pálné (1999), an important reason for the replacement of former hierarchical structures with the relaxed horizontal ones was that local resources had been more intensively applied in settlement development. A characteristic feature of the governance type metropolitan governance is that it is mostly realised without governmental institutions, by the cooperation among the participants. This coordination is called institutional collective action by Feiock (2004). Nowadays, it is getting more and more emphasis that in many instances the network governance of metropolitan city regions operates separately from the official structures governing the city, especially in the metropolitan city region of the USA (Oakerson, 2004). At the same time at national level the local government's role of a catalyst is rather characteristic as it is often the city government that takes the lead in the cooperation in the topic of economic development (Fekete, 2017c). According to some expert, the significant cooperation between local authorities and local companies could damage the level of local democracy, because interests of companies are sometimes more important than interests of local people (Crouch, 2011).

Examining the development stages of regional policy it is well-known that the classical (modern) approach was superseded by the postmodern one. While the national methods applied in the classical period were characterized by strictness, central regulation, indirect regulation of the market (Fordist approach), in the postmodern period flexibility, decentralization and direct regulation have come to the fore (Post-Fordism). In the postmodern period the state level also takes its role in the financing of innovation and research&development, and the notions of networking and competitiveness are coming more and more to the fore (Rechnitzer-Smahó, 2011). Brenner (2003) also emphasises that instead of the institutional structures of the Keynesian-Fordist period economic priorities such as territorial competitiveness come to the centre of metropolitan governance.

On the basis of the above ideas, it is worth mentioning how the public sector tried to influence the local economy in the above mentioned two periods. As it can be seen in Tab. 1, economic development of the modern times can rather be conceived as a supply-oriented policy which is mainly characterized by the building of hard infrastructure, top-down approaches, and the economic participants are the beneficiaries. The economic governance of the present postmodern period is rather demand-oriented: it pays more attention to soft investments, allows bottom-up initiatives, and establishes network cooperation among the economic, higher educational, research-development institutions and organisations (Bajmócy, 2011; Lengyel, 2010; Lengyel-Rechnitzer, 2004). In my opinion, all these – of course – do not

mean that tools used in the modern period would disappear, moreover, they often strengthen themselves parallel with the interventions of the postmodern period. Although the interventions based on economic governance are more and more characteristic, most of the cities still make „economic development strategies”.

**Table 1** The interventions of modern economic development and postmodern economic governance

	<b>Modern economic development</b>	<b>Postmodern economic governance</b>
<b>Philosophy of intervention</b>	Supply-oriented	Demand-oriented
<b>Main tools of intervention</b>	Development of hard infrastructure	Soft investments, establishment of economic environment
<b>Direction of intervention</b>	Top-down	Bottom-up
<b>Beneficiary groups of intervention</b>	Economic operators	Economic, higher education, research-development institutions and organisations

Source: own editing

According to Bajmócy (2011) nowadays the third wave of the local economic development can be observed. The first wave between the 1960s and the beginning of 1980s was focusing on the resources outside the region: it tried to motivate the involvement of external corporations by building physical infrastructure, almost exclusively by using community resources. The tools of the first wave were mainly in the interest of large enterprises: discounts, cheap premises and labour, moreover, the development of infrastructure and settlement marketing promoting these measures (see Tab. 2).

On the contrary, the second wave disposed of a more integrated approach. It made efforts to integrate the settled large enterprises, to develop the SME network related to it. The period between the beginning of the 1980s and the middle of the 1990s was characterized by the development of evolving new key sectors, a more targeted choice of investors and the extensive support of SMEs. At the same time, project-based financing dominated by the public sector was still typical, but the development of the so-called soft factors (such as labour training) also appeared. Today's local economic development measures are determined by the competitiveness-based strategic approach. Because of the strict nature of the competition rules of the EU the state's direct intervention in market processes was more and more suppressed in the third wave, and the emphasis is placed on the development of local business environment and innovation potential of enterprises and on the establishment of a liveable environment. At the same time, the role of public sector is still decisive, but together with the strong partnership of business and civil sectors (Bajmócy, 2011).

**Table 2** Stages of development of local economic development policy

	- Stage 1 (1960s – early 1980s)	- Stage 2 (early 1980s – mid 1990s)	Stage 3 (from the mid 1990s)
Characteristics	<ul style="list-style-type: none"> <li>- Involvement of non-regional resources</li> <li>- Aim: resettlement of large companies</li> <li>- Building physical infrastructure</li> <li>- Almost exclusively community resources</li> </ul>	<ul style="list-style-type: none"> <li>- A more integrated approach</li> <li>- Nesting of resettled large companies</li> <li>- Development of SME network</li> <li>- Project-based financing dominated by the public sector</li> </ul>	<ul style="list-style-type: none"> <li>- Competitiveness-based strategic approach</li> <li>- Role of public sector is determinant</li> <li>- Strong partnership of business and civil sector</li> </ul>
Devices	<ul style="list-style-type: none"> <li>- Preferences, cheap site and labour</li> <li>- Building infrastructure</li> <li>- Settlement marketing popularizing provisions</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Development of new key sectors</li> <li>- A more targeted choice of investors</li> <li>- Wide support of SMEs</li> <li>- Development of the so-called soft factors</li> </ul>	<ul style="list-style-type: none"> <li>- Development of local business environment and innovation potential of enterprises</li> </ul>

Source: own editing, on the basis of Bajmócy (2011)

Beside economic governance, cultural governance plays a more and more important role in the life of metropolitan areas (Moon, 2001). That is the reason why an organization from the area of culture was chosen for analysis in the last part of the paper.

## OBJECTIVES AND METHODS

The objective of the study is to present the processes and correlations of economic development and economic governance within a metropolitan region through a case study of Győr, after founding the theoretical bases. In the theoretical introduction the concepts of economic development and economic governance, the related attributes, and the most important differences between the two concepts are presented, as well as the positions of the two activities in the adequate stages of the development of regional sciences. After that the situation in Győr is observed. First of all, those economic development factors are presented, which were realized in the past decade, then the organisations which are evidence of the shift towards economic governance in the framework of a comparative analysis: Győr Automotive Career Model Cooperation, Győr District Employment Pact, Győr Local Community and Arrabona EGTC (Arrabona European Grouping of Territorial Cooperation). The viewpoints of the comparative analysis are the following: city region focus, quality of participants (public sector, economic organisations, civil sector), sustainability, sector-specific nature. The research reveals the present Győr model of economic governance, and the results related to the studied organisations can give clues in connection with the further development of the model.

During the research process the basis of the theoretical research was national and international literature related to metropolitan regions, their governance and economic activity. During the empirical research the economic development tools and measures of Győr

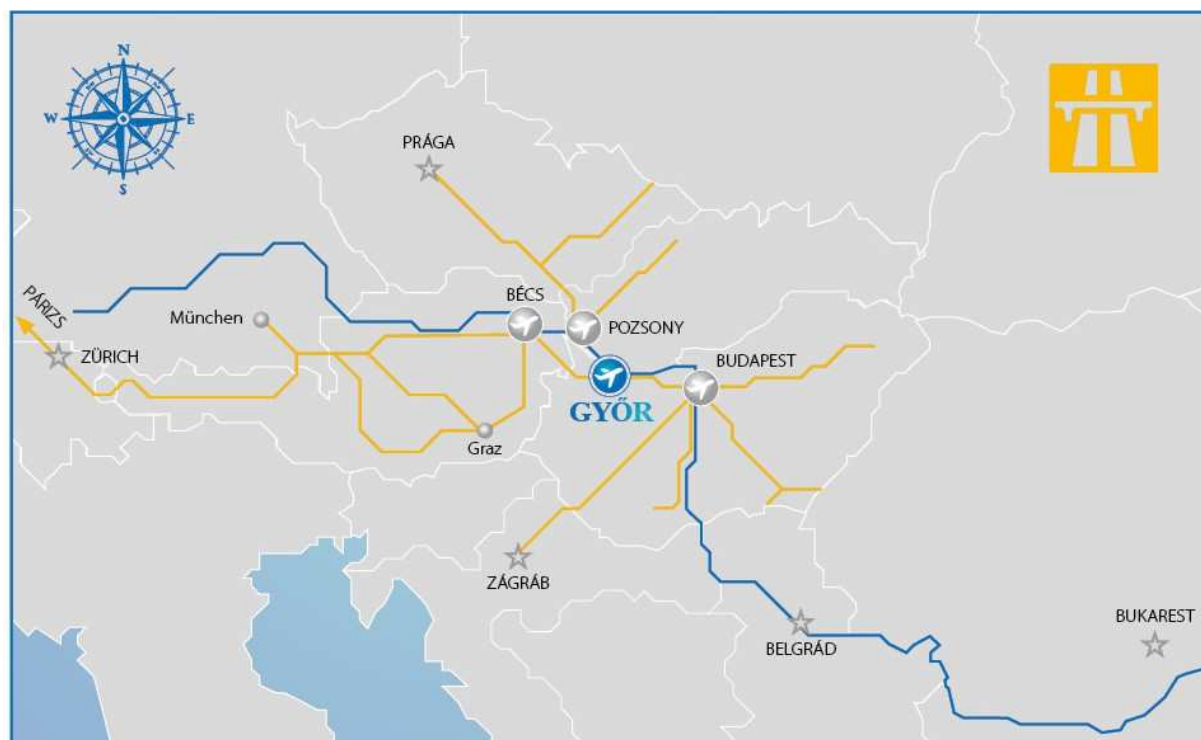
were represented on the basis of the related literature and the data collection by the author, while during the examination of organisations related to economic governance the documents of the given institutions and the materials regulating their operation were used.

## RESULTS

### The example of Győr

Győr is the 6th biggest city in Hungary. It is a city with county rights, the capital of Győr-Moson-Sopron County and the Győr district. The number of inhabitants in Győr is 129.372 (KSH, 2015), its area is 174,5 km<sup>2</sup>. Győr is situated in the Budapest-Vienna-Bratislava triangle and for centuries it has been an important economic and arterial centre. The city has direct access to the motorway in the direction of Budapest and Vienna, it has its own airport (Győr-Pér Airport) and its own river port (Port of Győr-Gönyű). Győr is the centre of Hungary's strongest economic region its largest employer is AUDI Hungária which in 2017 directly employed more than 12.000 people and almost another ten thousand indirectly. AUDI has special economic and social effects on Győr (Czakó 2014). The fact that from among the 23 cities of Hungary having county rights, the amount of business tax paid was the highest in Győr, showing growing tendencies, indicates the strength of Győr. In 2016, 145 billion HUF (500 million EUR) of business tax was generated by the cities having county rights, of which 22 billion HUF (73 million EUR) was realised by Győr (Korsós, 2016).

**Figure 1** Location and accessibility of Győr.



Source. Municipality of Győr



The economic region of Győr has become one of the most determinant economic power centres of Hungary. According to researchers examining the economic development of the city, the concentration of Győr's regional capital showed a significant density even in the last centuries, thus the city could successfully manage the different transitions (it could become a commercial city, then an industrial city from a military centre by this). Győr was helped by the social capital due to which the further intensity of the interactions among the different participants could move at a high level (Rechnitzer, 2016). All the above ideas are in line with the statement according to which one of the most important key elements of growth is that the region should be characterised by the coordinated, efficient cooperation of the government, municipalities and the participants of the educational and economic sphere parallel with the regional establishment of technological and knowledge-intensive activities (Filep, 2014). This statement is in close harmony with the idea of Triple-Helix-model (Etzkowitz & Leydesdorff, 2000).

AUDI Hungária has been playing a prominent role in the economic development of Győr (and Hungary) since 1990. As the biggest employer of the city and the region, the company indirectly provides livelihood to several tens of thousands of people, and has a significant role in Hungary's volume of foreign trade. It is no wonder that the automotive industry, the development of the SME sector related to it, and the extension of supplier capacity always have a major role to play. At the same time, the pursuit of the diversification of the economic structure (e.g. sport economy, environment- and health industry, economic services, tourism), and the close cooperation of the local economy and the university research&development to catalyse innovation processes, are strongly emphasised in the recent materials (Fekete, 2014).

According to international standards, Győr and its suburban area belongs to the medium-size city category, so it is worth to examine, why we speak about metropolitan governance in connection with Győr? According to Enyedi's definition the power centres controlling global processes are related to cities agglomerating influential transnational corporations, so not only the size and the population of a city is important, but also the position in the global market and global supply chain. The presence of the world's biggest engine factory and a huge automotive industry centre in Győr grants a significant position of Győr in the global networks. In my opinion, that is an important reason why we should observe metropolitan governance methods in the Győr region.

### ***Economic development***

Former scientific research stated, that directions of cooperation between the economic development organizations in Győr are mainly based on personal or ad hoc relations (Czakó et al., 2017). In Győr the economic environment is probably most significantly developed by the municipality of the city which carries out its economic development activities through its

own organisation, moreover through its related corporations. Furthermore, there have also been more and more references to the shift towards economic governance. The general assembly of the city of Győr has taken many important measures to boost the economy: since 1 January 2014, the local business tax rate was reduced from 2% to 1.8%, which is decreased to 1.6% from 1 January 2018; year after year it ensured the development of economic infrastructure; in the middle of the year 2000 the city channelled the youth towards vocational training by terminating some secondary grammar school classes in order to supply adequate labour, and introduced a grant system for the young ones studying in skills shortages. At the time of the economic crisis of 2008 the city granted job retention support to the SMEs of Győr. While at that time job retention support for the SMEs was important, in these days they are facing increasing difficulties because of the shortage of skilled labour.

Transport development measures have taken place in urban investment by which the more dynamic accessibility of industrial regions within the city has been realised (e.g. Tibormajori Road, Vonal Road). There are now new transport relationships between quarters that were in the past closed from each other (e.g. Jedlik Bridge, Olimpia Bridge) New Bácsai Road and its connection to Szövetség Street resulted in a new East-West traffic relation etc.

The Department of Urban Planning is one of the related organizational units of the municipality of Győr. It is responsible for the coordination and execution of certain infrastructural developments on the one hand, while on the other hand, it has the Chief Architect Group as an operating part, which prepares and develops the town-planning scheme of Győr, and besides its building regulation, makes important preparatory tasks in connection with the possible reclassification of areas intended for economic activities (GYMJVÖK, 2015).

Besides its internal organisation units, the local government disposes of several business organisations or shares in business organisations in the profile of which economic development is given a considerable emphasis. Győr-Szol Zrt. is one of the most important business organisations in Győr which is 100% owned by the local government. The corporation created in 2010 by merging several municipal companies, actually has 4 boards to carry out its tasks. The Property Management Board is the most significant one from an economic development viewpoint, which can influence the local economic processes through the leasing of local government-owned businesses and the sale of its own territories. The Board also includes the operation of local markets and the market hall, which is an important forum for helping local farmers (gyorszol.hu, 2015).

The Győr International Industrial Park Ltd., which is 100% owned by the city, offers countless services to companies wishing to settle and also to the ones already operating there. As an important economic development organization, it supports the newly established companies with legal advice, technical preparation, and tender consultancy. For them the site,

where they can start their operation, is sold by the industrial park. In the recent years Győr has carried out several expansions and infrastructural development in the area, using its own resources and European Union resources, thus roads have been constructed and public works have been built. Moreover, one of the biggest investments of last years was completed: the building of a new side-track. The expansion of the Industrial Park is in progress.

Győr's incubation centre is INNONET Nonprofit Ltd. It was established in 1997, with the determined aim to set up and operate an innovation and technological centre, which activity is still done by the corporation. INNONET provides advisory and IT services to start-up companies with knowledge- and technology intensity and growth potential, as well as tender, project management and technology transfer services to innovative SMEs capable of building up supplier relationships (spin-off). Mobilis Interactive Exhibition Centre plays an important role in career orientation, in attracting young people towards natural sciences and engineering sciences. The career orientation centre has been operated by a joint company of the university and the city since October 2016, which is a further example of the institutionalized cooperation of the city and the university at several levels (Fekete, 2017c).

The government of Hungary has also significantly contributed to the city's infrastructural development from the central government budget in recent times. It is worth mentioning the building of the bypass road around Győr from the East (it will probably be opened for the public in the first half of the year 2018). The industrial areas around AUDI have gained a new traffic connection by this, and from now on the North-South truck traffic will not hit the city centre, but will pass outside the city. Several transport routes have been built, or are still being built by public financing to serve the connection between the city and its region: such as the expressway to Szombathely, the expressway to Sopron which is being built, the bypass being built towards Pápa. These investments also include the reconstruction of several crossroads of restricted capacity in Győr.

### **Transition towards economic governance**

Many organizations have recently been set up in Győr in connection with the processes of the economic governance of the city. The introduction of the present study outlines that, apart from the development of hard infrastructure, more and more organizations are being established which are functioning not only with the participation of the municipal sector. These organisations have exercised economic influence on the territories over the administrative boundary of the city in order to ensure economic prosperity for the given metropolitan region and also to establish soft infrastructure for sustainable economic development.

Within the system of the regional relationships of the Győr Municipality the establishment of Arrabona EGTC has resulted in the appearance of new dimensions. Arrabona EGTC became an organization that - together with the municipal government - is institutionalising the regional system of relations of the city towards the Upper Hungary Region in Slovakia and it is also strengthening the cross-border character of the greater city region. EGTC was established in Győr by four founder towns (Győr, Mosonmagyaróvár, Dunaszerdahely, Somorja) on 31<sup>st</sup> August 2010 (Arrabona EGTC, 2013), the organization has 31 member municipalities at present.

**Figure 2** The territory of Arrabona EGTC.



Source: Arrabona EGTC

EGTC has submitted several project applications in order to develop the territories in question. Within the framework of the “The setting up the Nagymegyer-Győr scheduled return coach line in order to promote tourism and employment” project a scheduled coach service has been established between Győr and Nagymegyer since 2013. The project is being implemented in the context of “The 2007-2013 Hungary – Slovakia Cross-Border Cooperation Program “and with the assistance of EGTC (innovation.gyor.hu, 2017). According to my opinion Arrabona EGTC will play an important role in positioning Győr in regional and international relations, as the cooperation itself, which was set up in 2010, now has a settled organizational structure. In the past few years Arrabona EGTC managed to make successful improvements in its activities related to project applications and project

management. The organization participated in the management of EU projects of financial support totalling several thousand million HUF. These are the following: the industrial railway project in the Győr Industrial Park, the construction of the Győr-Gyönyű cycle path and the project to support regional relations in the Győr District (arrabona.eu, 2017). Common developments in tourism are being carried out at present within the framework of the cooperation between Győr and Dunaszerdahely, moreover, the Dunaszerdahely office of EGTC will soon be opened as well.

The initiative “Cooperation for Career Models in the Automotive Industry in Győr” also has many year of experience in the field of cooperation. The meeting of national regions of the automotive industry was also organised as a supplementary programme of the event ‘Formula Student Hungary’ in August 2014. A common event was organised again in November 2014 at the Automotive Hungary Fair II, then in the course of 2015 the elaboration of future prospects and the factual organizational frame of the career model were started and negotiations were also begun with co-operator circles. The first ‘Győr TechTogether Junior’ contest was organized within the framework of the cooperation for career models in March 2015. Students of 11 secondary schools of the Northern Hungary Region, who have a keen interest in technology, were participating in the contest and they also had the possibility to start relations with several automotive companies during the day of the competition. In September 2015 the ‘Győr Automotive Career Forum’ was organized within the framework of the “Győr Knowledge Pool” project which had been carried out by the consortium of Széchenyi István University and Győr. At the event future prospects of Győr were outlined in connection with the automotive industry and economic development. The logo, the reference book and the homepage of the ‘Győr Automotive Career Model’ were completed in the context of the same project, moreover, the 2016 work schedule of the model was drafted as well.

At present the cooperation is being coordinated by the Győr Municipality. After having become institutionalized, the Győr Regional Development and Project Management Ltd. will perform this duty according to the plans. In conformity with the planned agreement for cooperation and according to the regulations of operation and organization the ‘Győr Automotive Career Model’ has four founding members: the Municipality of Győr, Audi Hungaria Ltd., Széchenyi István University and the Győr-Moson-Sopron County Chamber of Trade and Industry. Every future participant will become a secondary member of the cooperation. The cooperation is expected to be officially set up in 2018. Subsequently, the cooperation will be able to play an important role in various significant issues and it will also

be able to function as a professional workshop when trade conceptions - such as decisions on economic development, the project of rented dwellings, the future of vocational education etc. - are to be prepared for the City and the Government (Fekete, 2017c).

The ‘Győr District Employment Pact’ was made in 2016 within the framework of the “Local employment co-operations in the Győr District” project. The objectives of the organisation are the followings: to decrease the level of unemployment and labour shortage within the Győr District, to harmonize the conceptions of economic development and vocational education, to start activities for career orientation, to provide training and counselling etc. The management of the consortium concerning the project is represented by the Municipality of Győr, the founding members of the agreement are the following institutions: Győr-Moson-Sopron County Regional Government Agency, Municipality of Győr-Moson-Sopron County, Győr-Moson-Sopron County Chamber of Trade and Industry, Győr Regional Development and Project Management Ltd., Győr-Szol Zrt., Széchenyi István University, Mobilis Public Interest Non-Profit Ltd., National Association of Contractors and Employers, St.Cirill and Method Foundation, Association of the Hungarian Charity Service of the Order of Malta (Győr District Employment Pact, 2016).

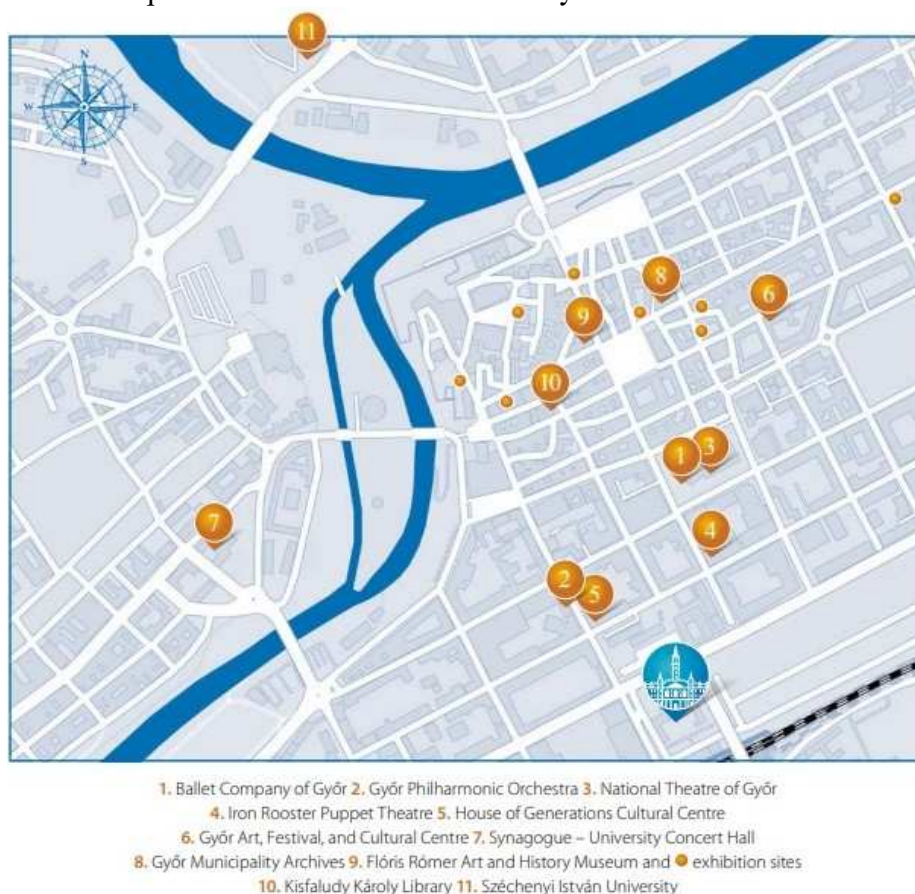
It can be laid down as a fact in connection with the agreement, that the recent cooperation aims to deal with the issues of the labour market and the field of employment in an institutionalized form particularly on a level that is extended over the borders of the city. The founders are representing all the three spheres of the Triple Helix model in due proportion and this is also characteristic of the Directive group as well.

The Győr Local Community (GYHK), which was founded on the basis of the *“Development of the infrastructure of cultural and communal areas and the development of local communities in connection with the local strategies of the city”* CLLD-project (Community-led Local Development), represents a new pattern in the system of co-operations. The main objective of the organization, which was set up on the basis of the project, is to accomplish the development of cultural communities and communal areas. Apart from that, GYHK is focusing on the strengthening of the local identity, the establishment of relations between well-functioning but segregated communities, the development of areas provided for the communities, and the integration of the inactive segment of the population into communal life. At present the communal territory of action corresponds to the territory of the City. GYHK is made up of ten members at the moment that are representatives of the state sector (Municipality of Győr, Arrabona EGTC, Rómer Flóris Museum of Arts and History, Dr. Kovács Pál Library and Communal Area), the civilian sector (Győr Aquatic Sports



Association, Universitas-Győr Foundation, Association of the Újváros Provincialists, For the Győr University Association of Public Interests) and entrepreneurs (Gallery Theatre Non-profit Ltd., Universitas Arrabona Ltd.). The organization lays emphasis on the representation of the three sectors to the same extent, its operational institution is Arrabona EGTC (Győr Local Community, 2016).

**Figure 3** The most important cultural institutions of Győr.



Source: Municipality of Győr

The allocation of the financial support of HUF 750 million will be launched in January 2018 and the organization will begin its operation at the same time. It will be worth paying attention to the operation of GYHK as after a potentially successful competition for the “European Capital of Culture 2023” project the range of activities of the organization can be further broadened by the support of the accomplishment of the project. In order to carry out the complex regional project it will obviously be important to increase the number of the members of the organization with necessary potential participants. Even though it is a recently founded organization, it is crucial to give a short analysis of it as, on the one hand, the organization has close relations with Arrabona EGTC, and on the other hand, in the future it can also become a potential factor of the metropolitan governance of the cultural life in Győr.

**Table 3** The comparison of the participants of the economic governance of Győr

	Focuses on the city and the region	Co-operations with state-, economic- and scientific sectors	Sustainability, financing	Sectors of the economy
CLLD	Partly Győr is the only clear-cut target territory for CLLD (but Arrabona EGTC is a member)	Yes	Long-term sustainability depends basically on EU support	Yes (culture)
EGTC	Yes (international)	No (local authorities alone)	It has been functioning for many years – members deposit payments	It is not revealing
Győr Automotive Career Model Cooperation	Partly	Yes	Unknown	Yes (automotive industry)
Employment Pact	Yes (of the district)	Yes	Long-term sustainability depends basically on EU support	No

Source: own editing

Tab. 3 summarises the results of the research in connection with the organizations in Győr that can constitute the basis of the metropolitan economic governance of the city of Győr. In my opinion, the four aspects of the summary (regional focus, members, sustainability, economic sectors) are suitable for the researchers to draw conclusions concerning the present system of institutions. The research of the regional focus can give an answer to the questions of authority in a big city: it is obvious that presently Arrabona EGTC and the Employment Pact have clear regional focuses (moreover, the former has international influence) while CLLD and the ‘Győr Automotive Career Models’ in Győr only partly have this attribute. For three of the four participants, except for EGTC, the cooperation exists between the state-, economic- and scientific-sectors, and examples for the participation of civil society organizations exist as well. In terms of sustainability only Arrabona EGTC has so far proved to be able to function on the basis of the payments of its members or outsider resources. As far as the other three institutions are concerned there is not enough information regarding sustainability (the reason for this, obviously, is that the other three co-operations have only recently been founded). It can be stated on the basis of the comparison that Arrabona EGTC



and the Employment Forum can deal with a wide range of subjects but the ‘Győr Automotive Career Model’ and the ‘Győr Local Community’ focus on a particular sector (automotive industry and cultural life respectively). It is important to mention here that the latter two have limited abilities to participate in the economic governance of the city because their subjects are restricted (it is especially the characteristic of GYHK, which represents the cultural sphere; they can be interconnected in the fields of the creative economy).

## **CONCLUSION, AN OUTLOOK**

After having examined the processes in economic development and economic governance in Győr, it can be stated, that both segments can be perceptible in the management of the city in various ways. Activities observed in Győr can strengthen the view-point, which was discussed in the introduction, i.e. the processes of economic development and economic governance have nowadays been going on in parallel with each other. Moreover, the co-ordinating activities of local authorities can be observed in the work of organizations that support economic governance. In the course of the research it was also confirmed, that built infrastructure can serve as a fundamental condition for the cooperation of network-systems, that operate the governance system of a municipality. This happened for instance in case of Mobilis in Győr, which institution – apart from its function as an exhibition area and equipment for experiments – was able to become a centre of occupational guidance in order to generate cooperation between the institutions of vocational training and enterprises. After the premises of INNONET Ltd. had been built, it became capable of operating as an incubation centre, and it is serving new enterprises that are now functioning in the Industrial Park.

While examining the future prospects of Győr, it can be stated, that the course of proceedings, which determine the future of the city, aim to support social and economic innovation. In consequence of their significance various programmes are going to play an important role and they will have an impact on the future of the city. Among others the following programmes represent proper examples: the ‘Modern Cities Programme’ (Fekete, 2017) and the ‘Higher Education and Industry Cooperation Centre’ (Fekete, 2017b) serving as a basis for transition towards cultural and sport economy and research & development. The sport hotel located in the Olympic Sports Park can be built within the frameworks of the ‘Modern Cities Programme’ and it provides significant help to strengthen the revenue producing function of the sports infrastructure, which was set up for the 2017 European Youth Olympic Festival (EYOF). The buildings of the Győr National Theatre are to be renewed also

within the framework of this programme, moreover, a modern concert hall and conference centre will also be built. These developments are going to serve innovations in the fields of the cultural and creative economy together with the ‘2023 European Capital of Culture’ scheme. The establishment of the ‘Higher Education and Industry Cooperation Centre’ is presently being carried out and, as a consequence of the process, new laboratories and equipment will be supplied for the R&D potential of Széchenyi István University. Moreover, on the basis of common product development and the organizational development of SMEs, the development of new methodology will also be carried out to improve the international competitiveness of the SMEs. The Digital Competence Centre, as one of the components of the ‘Modern Cities Programme’, will establish a new connection between university and industry, moreover, it can also contribute to the rehabilitation process of its site, a brownfield area of the former National Company of Biscuit and Wafer Factory of Győr.

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## RECEPTIVENESS TO FLEXIBLE EMPLOYMENT AT HUNGARIAN SMEs

### A RUGALMAS FOGLALKOZTATÁS IRÁNTI FOGADÓKÉSZSÉG A MAGYAR KKV-K KÖRÉBEN

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#### Abstract

Nowadays, only companies that are adaptable and flexible in their structure and processes can survive. The basis for a motivated company aiming for peak performance is organisational innovation. Hungary is one of the less innovative countries in Europe. Only organisations that can integrate new solutions smoothly into their everyday operations will remain truly competitive. The Government of Hungary, in its Partnership Agreement with the European Union, set out the goals for improving and supporting the adaptability of enterprises, the promotion of flexible and family-friendly workplace practices and services, and the employment of women with young children. The aim of this study is to demonstrate, through a Hungarian example, the receptiveness of Hungarian small and medium-sized enterprises to flexible forms of employment. The effect of flexible employment on economic adaptability and competitiveness through workforce efficiency and retention is examined. Its aim is the raise the awareness of options to increase employment among Hungarian SME managers.

**Keywords:** flexible employment, economic competitiveness, small and medium-sized enterprises, partnership agreement, Hungary

#### Absztrakt

Ma csak azok maradnak talpon, akik képesek a változásra, rugalmasan alakítják a cégstruktúrát, folyamataikat. A motivált, csúcsteljesítményre törekvő cég alapja a szervezeti innováció. Ma Magyarország a mérsékelt innovátor országok közé tartozik Európában. Az új helyzetekhez alkalmazkodó szervezet, amelyik az új megoldásokat rugalmasan beépíti a mindennapi működésébe, tud csak igazán versenyképes maradni. Magyarország kormánya az Európai Unióval kötött Partnerségi Megállapodásban célul tűzte ki a vállalkozások alkalmazkodóképességének fejlesztését, segítségét, a rugalmas és családbarát munkahelyi gyakorlatok és szolgáltatások elterjesztését, valamint a kisgyermeket nevelő nők foglalkoztatását. Jelen tanulmány célja egy magyar példán keresztül bemutatni, hogy a rugalmas foglalkoztatásra milyen fogadókészség van Magyarországon a kis és középvállalkozások körében. Vizsgálat tárgyát képezi, hogy a rugalmas foglalkoztatás növeli-e a gazdasági alkalmazkodóképességet és versenyképességet a munkaerő hatékonyságán és megtartásán keresztül. Mindezt azzal a céllal teszi, hogy felhívja a magyarországi KKV-k vezetőinek figyelmét a foglalkoztatás bővítésének lehetőségeire.

**Kulcsszavak:** rugalmas foglalkoztatás, gazdasági versenyképesség, kis és középvállalkozások, partnerségi megállapodás, Magyarország

## INTRODUCTION

One of the most important targets of the Europe 2020 strategy (European Committee, 2010) is increasing the quantity and quality of jobs. This ten-year strategy prioritising employment and

intelligent, sustainable, and inclusive growth was the first to define key goals. The first main goal is increasing the employment rate in the 20-64 age bracket to 75% by 2020. In the field of integration and the fight against poverty, lifting at least 20 million people out of poverty and social exclusion is a further goal. An additional goal is to improve the quality and performance of education and training systems, reduce the share of early school leavers to 10% from the current 15%, and increase the share of the population aged 30–34 having completed higher or comparative education from 31% to at least 40%. Member States must interpret all key goals into national goals, taking into consideration their initial and national circumstances.

The Government of Hungary, in its Partnership Agreement with the European Union (Hungarian Ministry of National Economy, 2014) – in accordance with the discussed strategy – set out the goals for improving and supporting the adaptability of enterprises, the promotion of flexible and family-friendly workplace practices and services, and the employment of women with young children. We presume that a number of groups on the job market cannot or are not willing to take up a traditional form of employment because they are raising a child, caring for an elderly relative, or participating in education. In order to exploit their potential, the aim of the development concept is to improve the enterprise work organisation culture, promote flexible work arrangements, and balance work and private life.

Flexible employment forms are gaining in popularity in Hungary, and there is increasing research into their various fields, but so far, there is little solid, scientifically-based experience and few findings with a comprehensive perspective on the range of companies in question.

The effect of flexible employment on economic adaptability and thus competitiveness, primarily through workforce efficiency and retention, is expected on the enterprise side.

A number of flexible forms of employment are available in Hungary, the most significant ones being: simplified or casual employment, part-time employment, job sharing, flexible working hours, teleworking, home office, outworking, temporary employment, employment by multiple employers.

Flexible forms of employment support employees in creating a work-family balance, thus making their workplace more attractive. Family-friendly operation is also a key element in reinforcing employer reputation and social responsibility. From the employee's point of view, a flexible workplace is more attractive, thus it is synonymous with finding valuable workers faster, and being more successful in keeping them.

The opportunities for increasing employment involve different needs on the employer's and on the employee's side. In this study, I will demonstrate receptiveness to flexible employment in the Hungarian SME sector by means of a specific example.

## Topic Justification

*“The tendency of development is undoubtedly that what, in the past, had been – regardless of any traditional differences – considered the norm as regards the employment relationship and working hours became an exception, and what had been considered an exception is now what defines the current reality (Voss, 1997).*

Labour market mobility is a business goal focused on faster, more successful, and more effective responses to changing environmental requirements, compared with traditional employment models. This can be achieved using methods known as flexible employment practices or atypical forms of employment.

According to Frey (2001), “Employment that is generally considered standard or regular keeps losing ground. Traditional, ‘normal’ employment means full-time employment with a permanent contract, in employee status, with working hours usually equally distributed over five working days, usually from Monday to Friday, working regular, usually daytime, hours. Whatever is different is atypical, irregular, flexible”. This is not an external constraint to force on job market participants, but an opportunity to increase competitiveness that should not only be considered, but used as a basis in order to solve problems such as falling unemployment, increasing the number of employed people, or, on the company side, handling changes in consumer needs.

The economic and flexible utilisation of the workforce is also a company need, as it affects competitiveness and has a significant effect on workforce-related costs, that are especially important in the strongest national economy sector, the service sector, as it normally generates the largest costs. (Finna, 2008)

By driving work flexibility and work quality, flexible forms of employment may be used to free potential “reserves” on both the supply and demand sides, which can lead to an increase in the number of people employed. Solutions allowing the balancing of work and private life allow the successful return to the job market of people who would otherwise be excluded, especially the parents of young, as well as the improvement of their adaptability. Measures that promote employment contribute to increased employment of parents of young children and other groups in special situations (e.g. people who both work and study, those caring for old or sick family members). One of the most important methods of increasing employment is flexible employment. In Hungary, even though there are broad legal possibilities for its use, the rate of flexible employment is low.

According to Hungarian Central Statistical Office data (Hungarian Central Statistical Office, 2015), the number of flexibly employed people in the 15-64 age group rose by almost 80,000 between 2008 and 2015, to approximately 250,000. Fixed-term employment is the most popular form (approximately 1 in 10 employees have such a contract today). It indicates

the growth in the role of flexible forms of employment (fixed-term contracts, part-time, teleworking, temporary employment, self-employment). But we still have a long way to go compared to other countries: according to 2015 Central Statistical Office data, while in the 20-64 age group in Holland, 27.8 percent are employed part-time, Hungary's 5.7 percent rate is one of the lowest in the EU (Hungarian Central Statistical Office, 2015).

According to Poór (2014) the flexible employment forms are not popular in the following countries: Hungary, Poland, Czech Republic and Slovakia yet. The reason why the flexible employment formats have not been widely recognised in those countries is, that these employment formats and their advantages/disadvantages are not acknowledged yet.

Companies aim for fewer obligations and for unbinding employees from the company (Szabó and Négyessi, 2004). Competitiveness is the ability of an organisation (person) to recognise the possibilities and risks of changing conditions and take the chance to change the circumstances in order to realise its own goals and interests. An organisation can react quickly to the recognised need for change if it can be flexible in regard to its resources. Along with other resources, the availability of enough high-quality employees, as one of the basic production factors, is of paramount importance. The past decades' research into human capital has proven that creating financial and technical tools that match others' similar tools is much easier (and often quicker) than the creation of human capital serving excellence, innovation, and adaptation.

A systematic review of Hungarian empirical results highlights a number of empirical results and research hypotheses that may serve as a useful starting point for upcoming research:

1st) This review is made more difficult by the fact that not everything that seems to be flexible employment actually is that, and flexible employment is often not visible to statistics. A number of studies point out that a portion of employees officially in flexible statuses actually work full-time, and are put in such a status for taxation and contributions considerations, and a significant proportion of fixed-term contracts conceal regular employment in reality. At the same time, a significant percentage of undeclared employed people work in essentially flexible forms, but they do not appear in official statistics (e.g. Köllő, 2012; Finna, 2008; Asztalos et al., 2011; Hovánszki, 2005).

2nd) As for the awareness of flexible forms of employment, Hungarian companies are faring better than in regard to how widespread these practices are: According to expert interviews conducted by Hárs (2013), companies are conscious of the more common forms, and are only unsure about the newer, more innovative solutions (e.g. job sharing), which was confirmed by the questionnaire survey in both this and the other recent research.



3rd) It is especially characteristic of SMEs that they knew the form itself, but not the content and depth of the concept, therefore decisions were based on intuition, as well as previous ideas and experiences (Finna, 2008; Asztalos et al., 2011).

4th) According to Finna's (2008) research, the switch to flexible employment is not an easy task, especially for SMEs. Initially, companies try to resolve tasks requiring higher flexibility with the following tools:

- reorganising full-time employees,
- involving subcontractors and outsourcing activities

5th) Negative attitudes to and rejection of flexible employment typically characterise Hungarian-owned smaller (micro and small) enterprises (Hárs, 2013).

6th) Employees are rather distrusting of flexible employment. They perceive a serious risk in the flexibly employed people possibly becoming marginalised and their status and position being less secure compared to the 'core' of the full-time employees. They undertake it voluntarily if flexible employment is the form of employment that suits their life situation.

It is important to point out that the increase in the prevalence of various atypical forms of employment is not synonymous with a decrease in typical, 'normal' employment, but, focusing on a niche, it creates new jobs where traditional, full-time, permanent contracts are not an option for financial reasons.

### **A practical example of promoting flexible employment**

A general goal of the Partnership Agreement is the increase in sustainable growth and high added value production and employment, which is the subject of five of the Government's National Priorities. The goals are the following:

- Improving the competitiveness of economy participants and increasing their international activity.
- Improving employment by driving economic growth and social inclusion.
- Improving energy- and resource-efficiency.
- Handling social inclusion and population challenges.
- Implementation of local and regional developments aiding economic growth.

9 operative programmes aid the realisation of the goals and the execution of the Partnership Agreement. The one with the highest ratio of funds is the Economic Development and Innovation Operational Programme (GINOP). The GINOP programme encompasses 8 funding priorities. The fifth priority, 'Employment', supports increased employment by improving workforce supply and by incentivising the employment of non-employed people, thus completing the logic of the other priorities for improving workforce demand and competitiveness. The planned measures primarily target improving the employability of those

who may be employed on the primary labour market and increasing the adaptability of employers and employees utilising a complex toolkit.

In the ‘Employment’ priority, GINOP-5.3.1-14 ‘Promotion of flexible employment in convergence regions’ programme was published in 2014 as part of the ‘Széchenyi 2020 programme’.

The programme is implemented in a two-round process. In the first round (**component A**), the aim of the process is to choose providers offering flexible/family-friendly screening, that during execution, will perform screening of businesses for free during execution, and prepare a re-organisation plan and track the realisation of these plans in order to increase flexible employment.

In the second round, (**component B**), the screened businesses may, based on the re-organisation plan, request funding for the organisational, human resources, and other measures that aid flexible employment.

Thus, in the first round of the programme, professional providers were selected that would later perform the organisational screening of the joining SMEs for free due to the grant funding. 11 organisation development consortia or organisations with experience in introducing flexible employment won a total of HUF 2.007 billion in European Union funding. One of the first tasks of the providers was the creation of a shared and unified, high-quality professional methodology along with an implementation plan that ensured the nationwide equal accessibility of the services for the SME sector (with the exception of the Central Hungary region).

In the second round, the screened employers could draw funds to cover the costs of the recommended organisation development. Therefore, only companies that had undertaken screening in the GINOP 5.3.1 part of the programme with the selected providers could take part in the second round. The selected professional consulting companies reached almost 27,000 SME employees in their analytical, evaluation, and development activities. They started their analytical work between July and October 2015 in close cooperation, with coordination by the consortium of IKFA Iparfejlesztési Közhasznú Nonprofit Kft. The further two expert members of the lead consortium were the KONTAKT Foundation and MAPI Magyar Fejlesztési Iroda Zrt. (MAPI). As a human resources and organizational development expert at MAPI, I actively participated in the three-month professional work, during the course of which the unified professional methodology and the implementation plan used by the providers in the screening of the SMEs was created. Following the screening, preparations for the introduction of flexible work are still being made at the companies concerned.

The research and the analysis of data and results is still ongoing with more than 800 companies involved, it is a continuous research which study is planned to be finalized in May

2018. At those companies who are open for the flexible employment formats, the process of introducing different types of flexible work has started.

## **OBJECTIVES AND METHODS**

This study explores the opportunities of the organisational utilisation of labour market flexibility and its actual utilisation. The aim of the study is to gather information on small and medium-sized enterprises' need for and use of flexible forms of employment in Hungary. According to my previous hypothesis, the opportunities for flexible employment that could have a significant effect upon competitiveness especially for SMEs are far from being completely utilised. In my research, I primarily explore the employer's side, as in my experience, management decisions have a fundamental effect on the organisational implementation and operations of flexible forms of work. I believe that the creation and existence of atypical work has an effect on the organisation, its flexibility, and its efforts to achieve further flexibility.

In the consortium's work as a whole, data collection was performed at 828 companies. More than 15,000 management and employer questionnaires were recorded by the experts working in the consortium at the companies that had applied to take part in the programme.

There are two major groups of research methods: primary and secondary research. Primary research is the first-hand collection and evaluation of data not known to others in one's own research, while secondary research is the analysis of data obtained and published by others. In this study, both methods are used simultaneously.

As primary research, I performed a questionnaire-based survey, and personally interviewed company managers. The database I have gained from these interviews (employee and top management/ owner level surveys including organizational questions, attitude and emotional surveys) is exceptional.

We have collected all company data (tax number, type of activity, TEAOR number etc), employee data (on the top management and employees who filled out the questionnaire: age, gender, education, family status) and their answers on the specific topic on the flexible employment. Naturally there was not a 100% response rate, as some data was missing or not filled out properly due to human nature, which will be corrected in the second analysis. There is no comparable analysis in Hungary so far, therefore there is no control group yet, as all the companies who filled out the survey were open to flexible employment.

There is ongoing research in the following correlations:

- Would HR Department (and HR knowledge and support) positively influence the widely spread of flexible forms of employment?

- What is the relations in between company size (employment number) and flexible employment?
- Which company profile would be more open for flexible employment? (building industry, production industry, infrastructure company, catering industry)
- Is there a difference among different age-groups and their receptiveness on this topic.

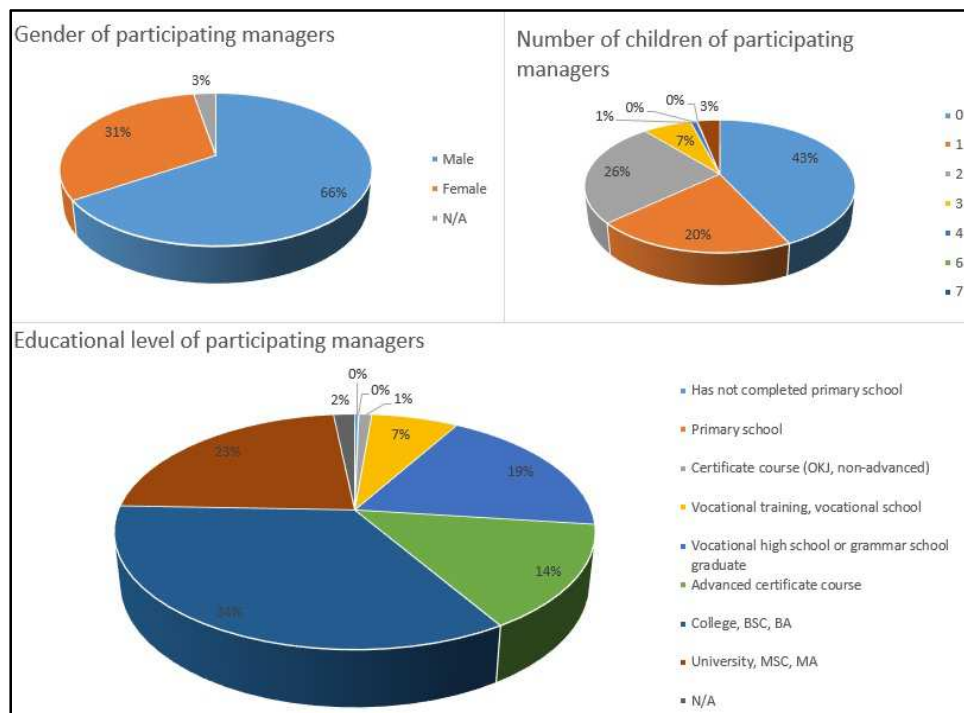
I used Hungarian and international studies, literature, the relevant laws, some statistics, and press releases as secondary sources.

## REVIEW OF THE RESULTS OF THE MANAGEMENT AND EMPLOYEE SURVEYS SO FAR

### SME managers' answers regarding flexible employment

Most participating managers were male (66%). They mostly had higher (57%) or secondary (40%) education. Almost a half (43%) of managers do not have children younger than 18 years of age, while one fifth (20%) have 1, one quarter (26%) have 2 children under 18, and less than 10% have larger families<sup>11</sup>.

**Figure 1** Main characteristics of the participating managers

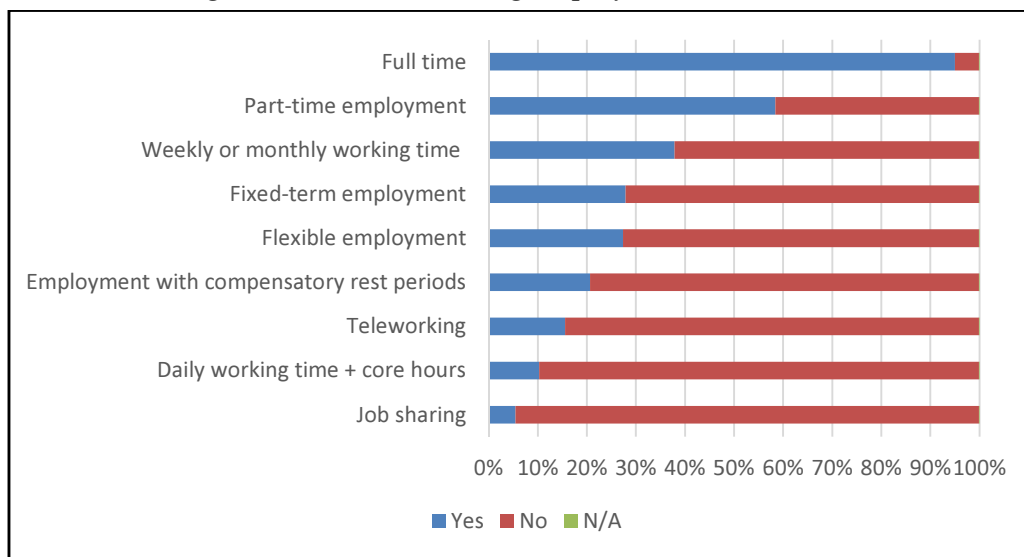


Source: Own elaboration based on data from MAPI co. Ltd.

<sup>11</sup> In the survey, the questions asked only related to children under 18, and during data collection, multiple managers mentioned having grown-up children.

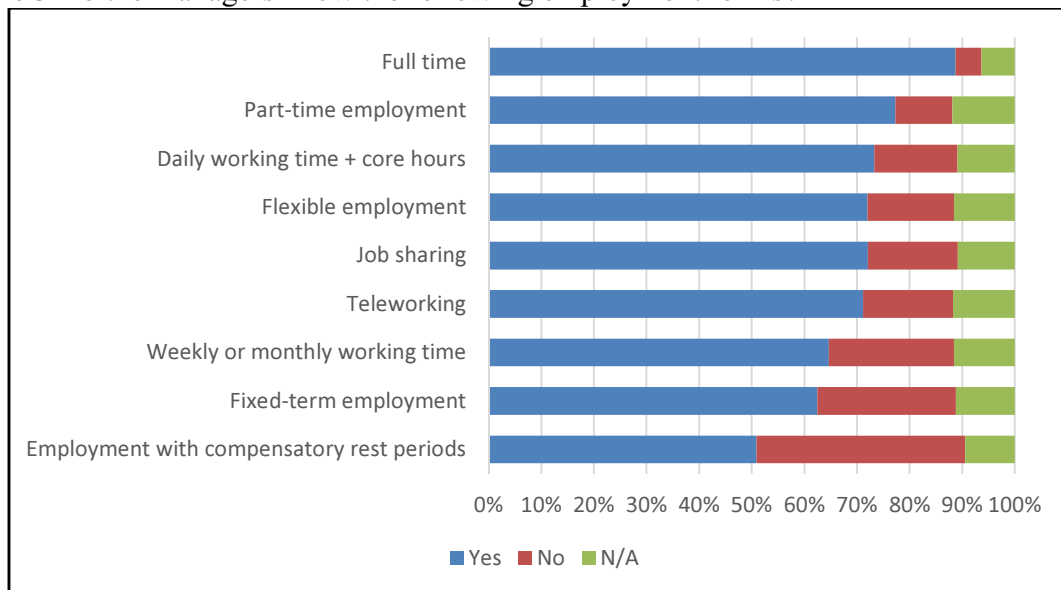
According to the manager questionnaires, part-time (58%) and weekly/monthly working time (38%) are the most widespread forms of flexible employment. Other forms (compensatory rest periods, job sharing, daily working time: 5-20%) and teleworking that is only applicable to few jobs (15%) are less popular. The main obstacle of their utilisation is not the lack of knowledge, as, other than compensatory rest periods, the majority of forms are known to managers. Based on the answers to questions on implementability, expansion is possible for all atypical forms.

**Figure 2** Do the managers utilise the following employment forms?



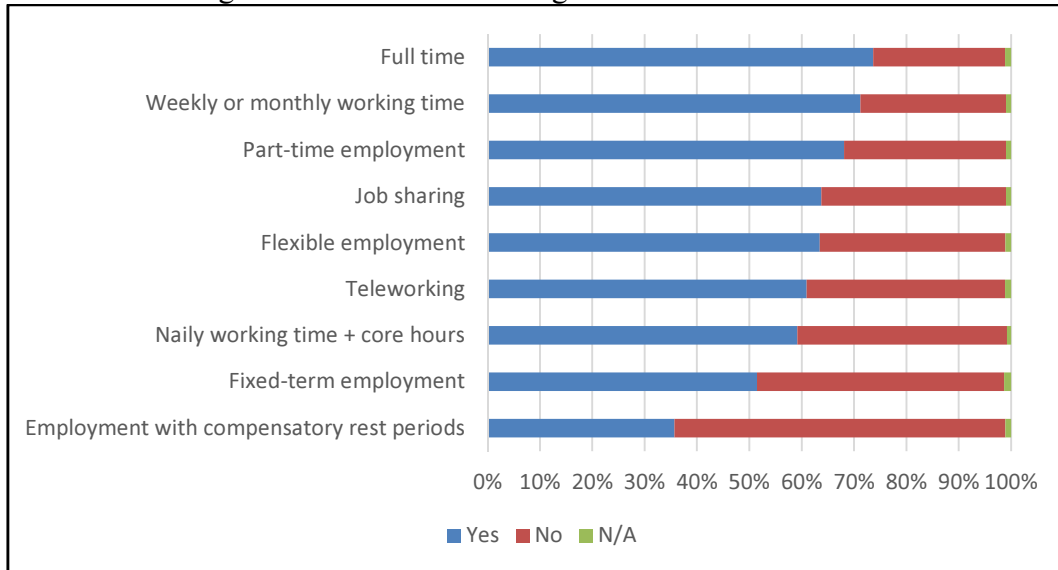
Source: Own elaboration based on data from MAPI co. Ltd.

**Figure 3** Do the managers know the following employment forms?



Source: Own elaboration based on data from MAPI co. Ltd.

**Figure 4** Do the managers consider the following flexible

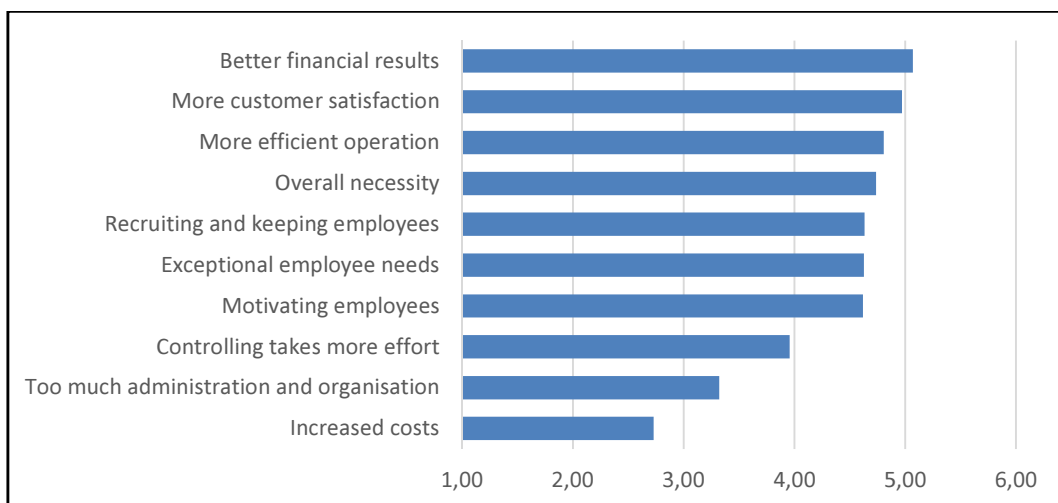


Source: Own elaboration based on data from MAPI co. Ltd.

The managers' attitudes towards flexible employment are, in general, positive. Managers are primarily motivated by financial considerations (better financial results, better customer satisfaction, more efficient operation), but employee-oriented considerations are also significant.

Regarding questions about management fears, managers did not agree with the administration/organisation and cost increasing factors of flexible employment, rather they were worried about releasing control. This is in line with the findings in the literature that deem a conservative managerial attitude that insists on retaining the act of personal handing off of work and control one of the most significant obstacles in this respect.

**Figure 5** Managerial attitudes



Source: Own elaboration based on data from MAPI co. Ltd.

It should be underlined that, among the management attitudes regarding employment practices and company culture, on the whole, workplaces are generally considered ‘flexible’ even today. At the same time, they are sceptical whether this would be a primary selection criterium for employees, and they disagree the most with the idea that communication between employees would decline or this would lead to conflict between employees.

Analysing the answers and the data received, we can clearly state the following hypotheses:

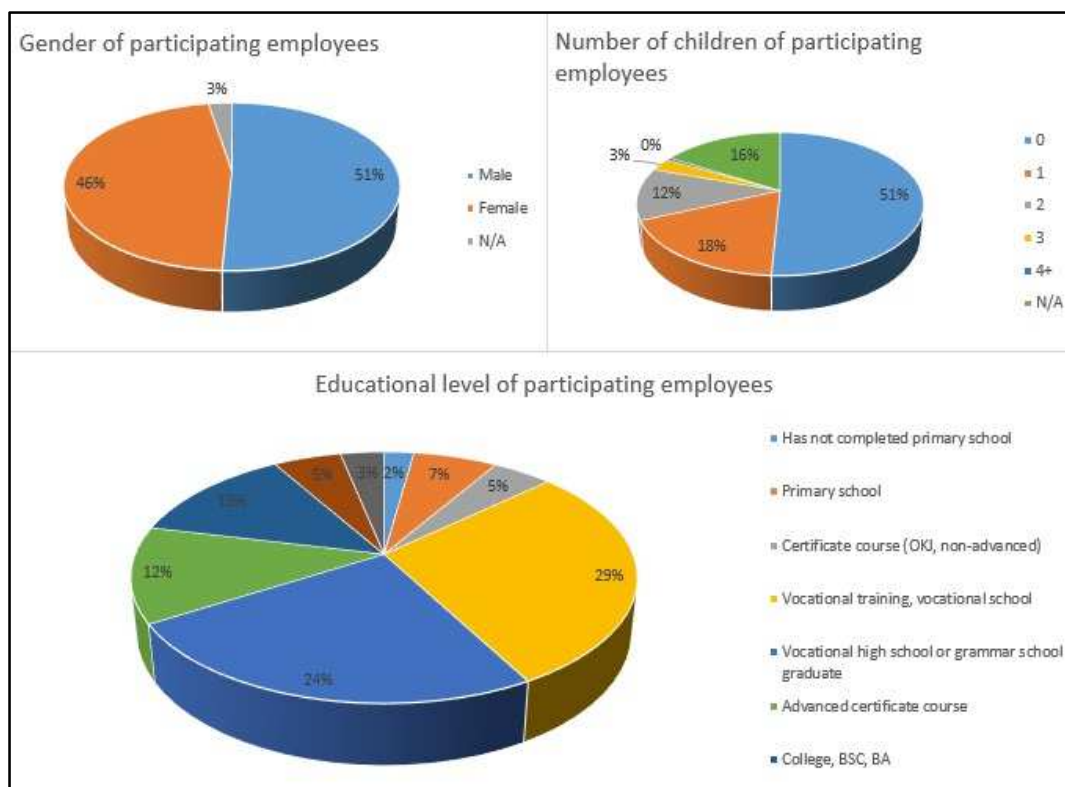
Those companies who have no experience yet on flexible employment, are not fully aware of advantages and disadvantages and they somewhat are sceptical and careful.

Female Leaders are more open to these formats, as well as having more empathy on employment needs.

### SME employees’ answers regarding flexible employment

Males were slightly over-represented (51%) among the participating employees. They mostly had secondary (36%) or lower (43%) education, unlike managers’ 57%, only 18% had a higher education level in this group. More than half (51%) of employees did not have children under 18 years of age, about one third (30%) had 1 or 2 children under 18, while the ratio of employees with larger families was negligible (6%).

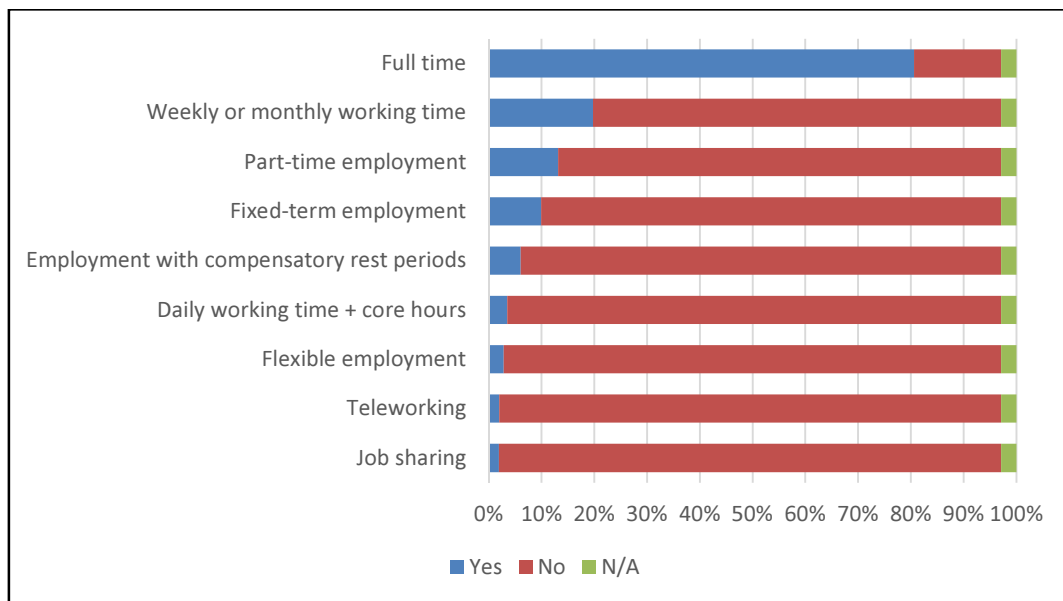
**Figure 6** Main characteristics of participating employees



Source: Own elaboration based on data from MAPI co. Ltd.

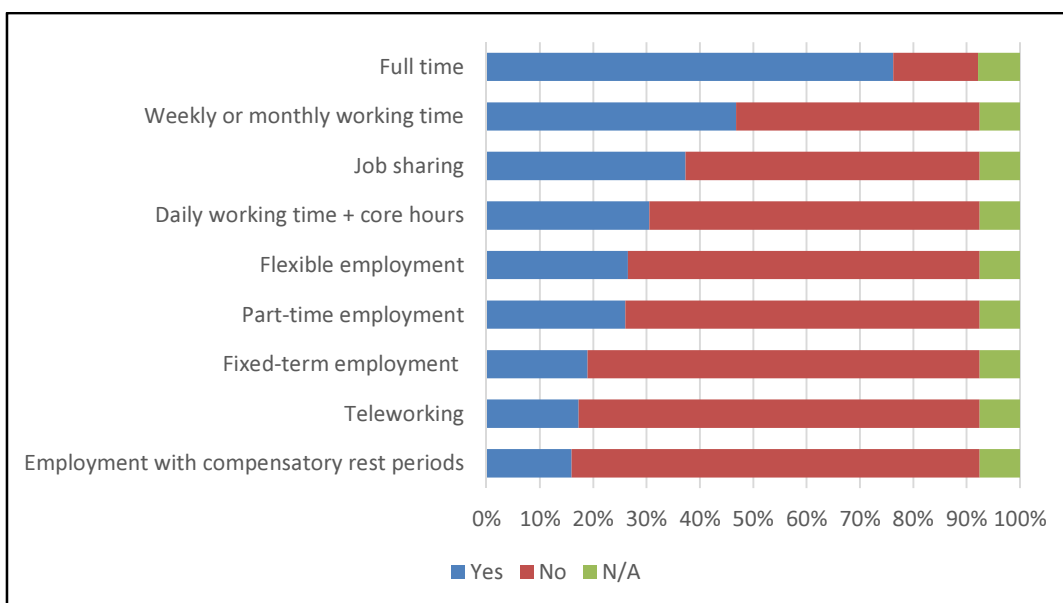
According to the employee questionnaires, part-time work (13%) and utilising weekly/monthly working time (20%) are the most widespread atypical forms of employment, and 10% of employees had worked with a fixed-term contract in the past 12 months. Among the other flexible forms, work with compensatory rest periods is the most widespread (6%), the other forms requiring special jobs accounted for 2-3%. Based on whether they found their jobs suitable for atypical work, employees perceived a lot of room for improvement in almost all forms.

**Figure 7** What percentage of the surveyed employees have been employed in the following form(s) in the past 12 months?



Source: Own elaboration based on data from MAPI co. Ltd.

**Figure 8** Do you find your job suitable for the following forms of employment?

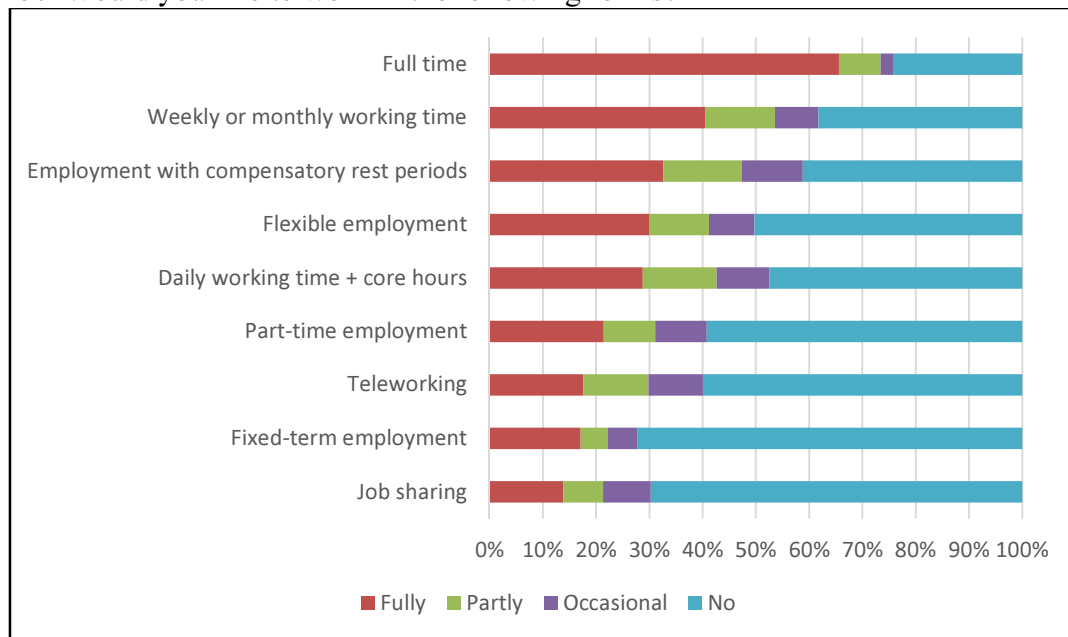


Source: Own elaboration based on data from MAPI co. Ltd.



As part-time work means a decrease in income, it is not popular among employees regardless of its frequent use as a reaction to individual situations. Employees typically would prefer to work in atypical forms which they associate with more freedom for the employee and a higher level of control over their working time. As the majority of employees are likely to be unaware of the exact content and depth of the various forms (e.g. weekly/monthly working time is the most desired form), they may have inferred the content based on the forms' name, thus making it not worth analysing in depth. The limits of the need for control and freedom are demonstrated by the fact that flexible employment that is suitable for similar associations is somewhat less preferred, and teleworking, along with part-time work, only attracts about one quarter of employees: employees require a clear framework, but expect a logical flexibility in this framework.

**Figure 9** Would you like to work in the following forms?



Source: Own elaboration based on data from MAPI co. Ltd.

The employees' answers reinforce the managers' opinion that most participating companies have an open atmosphere and are sensitive to employee problems.

## CONCLUSION

As the development programme supporting the introduction of flexible work is still in progress, I can only publish interim conclusions for the time being (phase 1). In the questionnaire, I surveyed the receptiveness of companies on both the employer and employee sides. The positive attitude towards the issue showed me that participants were interested in

the topic, therefore I believe that further informing of the participating companies is of primary importance. The survey proved that Hungarian companies are doing better in terms of awareness of flexible forms of employment than in regard to their prevalence. Companies are typically aware of the more general forms of employment, and are only uncertain regarding new and innovative solutions (e.g. job-sharing).

It was also proved that the majority of employees are unlikely to be aware of the exact content and depth of the various forms (e.g. weekly/monthly working time is the most desired form), rather inferring the content based on the forms' name.

The survey proved that employees are rather distrusting of flexible employment. Employees feel the greatest aversion towards fixed-term employment and job sharing, as they probably consider the security of their employment to be at risk.

In most questions, the opinions of managers and employees regarding flexible employment practices are not significantly different. The raw comparison of average employee and average manager opinions reinforces the earlier findings that employees are more open and have a greater need for more control over their working hours (they can imagine scheduling their own work time).

Globalization is a well known expression in the economy, therefore it has a strong effect on the job market including employment forms. Martin and Schumann (1998) were emphasizing that the business world is adjusting to globalization as a tendency." Competition in the brutal global economy will make the job market and employee structure global as well. There is no position which will last forever" – meaning everyone can be replaced.

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## **SPATIAL CHARACTERISTICS OF ART TRADE IN HUNGARY**

### **A MŰKERESKEDELEM TÉRBELI SAJÁTOSSÁGAI MAGYARORSZÁGON**

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#### **Abstract**

Century-long traditions of art trade in Hungary are strongly connected to the capital, famous, elite auction houses and galleries are concentrated in the downtown area of Budapest. Although art market in Hungary is capital-centered, remarkable amount of art trade takes place in the countryside too. This study aims to give insight into the presence of the different types of art trade (antique shops, second-hand book stores, art galleries and auction houses) in rural settlements, compared to the characteristics of art trade in Budapest. The research – based on primary data collection – reveals the social, economic, and cultural factors which explain the regional differences in art trade.

During the field work in Budapest, semi-structured interviews were conducted with art gallery owners, auctioners, and antiquarians. The penetration index (PEX) which was applied in the case of researches in the countryside shows the rate in which the different types of art trade are present in settlements of different sizes. The results are demonstrated on the map with the help of the Mapinfo 12.5 software.

**Keywords:** art trade, auction house, art gallery, antique shop, second-hand bookstore

#### **Absztrakt**

Magyarországon a műkereskedelem évszázados hagyományai erőteljesen kötődnek a fővároshoz, a nagy múltú, előkelő aukciósázak és galériák jellemzően Budapest belvárosában koncentrálódnak. Bár a műtárgypiac hazánkban erősen főváros-centrikus, számottevő műkereskedés található országszerte vidéken. Jelen tanulmány a műkereskedések típusainak (régiségboltok, antikváriumok, galériák és aukciósházak) vidéki településeken való jelenlétét hivatott bemutatni, összevetve a budapesti műkereskedelem sajátosságaival. A primer adatokra épülő kutatás azt kívánja feltárni, hogy milyen társadalmi, gazdasági, kulturális tényezőkkel magyarázhatóak a műkereskedelem regionális különbségei. A budapesti terepmunka során félig strukturált interjúk készültek galériatulajdonosokkal, becslősökkel és antikváriusokkal. A vidéki vizsgálatok esetében alkalmazott penetrációs index (PEX) számítás azt mutatja meg, hogy a különböző települési méretkategóriákban a műkereskedések adott típusai milyen arányban jelennek meg. Az eredmények térképi megjelenítése Mapinfo 12.5 térinformatikai szoftver segítségével valósult meg.

**Kulcsszavak:** műkereskedelem, aukciósház, kereskedelmi galéria, régiségbolt, antikvárium

## **INTRODUCTION**

When it comes to Hungarian art trade, several types of art markets exist at the same time (Rechnitzer, 2002), according to which type of art the individual sub-markets specialize in

(e.g. paintings, furniture, retro artifacts, etc.). In these sub-markets the economic, cultural heritage protection, art and private sectors are present parallel to each other. In our research profit-oriented art trade businesses will be examined. Based on their profile, these art trade businesses can be classified as antiques shops, art galleries, auction houses, gallery auction houses, and second-hand bookshops also belong here (Várnai, 2017). Taking this as a starting point, art trade can be regarded as an industry of cultural economy, which formulates the competitiveness of cities (Enyedi, 2012), or as a special segment of retail trade where value-restoring antique (Sikos, & Hoffmann-né, 2004) and contemporary artifacts are bought and sold. Art market belongs to the traditional segment of creative industry (Hartley-Ormerod 2008, Pratt-Jeffcutt 2009, Dekker, 2015). Although it accounts only for a small part of the whole economy (Prinz-Piening-Ehrmann, 2015), it is highly important from a cultural point of view. As business policy, price strategy and target customers of the different types of art traders differ, their site selection and spatial diffusion can also be rather different. This study aims to introduce the spatial characteristics of Hungarian art trade, and to examine what factors influence the spatial concentration and separation of the different types. The topic raises current and interesting issues in the case of Hungary, because it is rather capital-centered: social, economic, political and cultural life is concentrated in Budapest. The location-specific, metropolitan feature of the industries of cultural economy (Enyedi, 2002) can also be observed in the case of Hungarian art trade; the largest, most elite trading houses and galleries are almost all concentrated in Budapest. The traditional center of art trade in Budapest is Falk Miksa utca in the downtown area, while Múzeum körút preserves the traditions of trading in second-hand books. At the same time, art trading, which is conducted in antiques shops and galleries, receive little attention. So the question is obvious: how can spatiality of art trade in the countryside be characterised? What similarities and differences can be observed when we compare the spatial distribution of the different types of art traders?

Accordingly, this paper introduces the presence of art shops in Budapest and in the countryside, highlighting the major spatial features and characteristics. The author examines on which level of the settlement hierarchy the different types appear, and what social, economic and cultural factors explain the regional differences in art trading.

## APPLIED METHODS

The database, which served as a basis for the examination, was built on a primary research, when with the help of search engines the exact address and main profile of art shops were collected. The author assumes that for operating a healthy and effective business nowadays it is essential to be present in electronic business registers.

The study relies partly on the previous researches of the author, which are completed by new researches. The latest data collection took place between March and June 2017, when the database was extended with another 95 new entries, comprising now of 377 art shops in the capital. During the research period data – broken down by profile – about a total of 290 art shops operating in the country were collected (Tab. 1). To be able to understand the site selection policy of the shops and to discover the regional characteristics of art trade, the data base contains available information on price policy, supply channel and selection of goods. The study does not deal with the characteristics of online art trade, or with the spatial characteristics of auctions in virtual space; it researches only the factors which influence the locality of art shops and their being bound to geographical space (Nemes Nagy 2009, p. 88.). It is also worth distinguishing those trading houses which provide opportunity only for online shopping and bidding. Some of them mainly play an intermediary role between sellers and buyers (C2C marketplaces) or serve as an advertising platform for users, while others operate as webshops or online auction houses without maintaining a physical shop. In some art shops potential buyers are able to see the items prior to the online auction/sale, the spatial presence of these shops carry the characteristics of traditional antiques shops and galleries. When collecting the database, the author considered the latter type.

**Table 1** Distribution of art shops by profile in Hungary, 2017 (pcs)

Area	Profile of art trade shops			
	second-hand bookshop	antiques shop	galleries	auction houses and gallery auction houses
Budapest	96	140	104	37
countryside	98	110	78	4

Source: own research

To the further analysis of the evolvement of traditional art trade centers, the author also relied on another qualitative research methods. Semi-structured interviews were conducted with the owners and employees of art galleries, antiques shops and second-hand bookshops in Budapest. The experiences of these interviews contributed to the understanding of the socio-

economic traditions and the history of the city's development in the typical core areas. The aim of these field works was to understand the main features and characteristics of art shops of different profiles better, as well as to further specify primary data.

To analyze the spatial distribution of art shops in the countryside, applying the penetration index (PEX) proved to be useful (Tiner 2010). This index shows that in how many percentages of the settlements of a given size is the given type of art shop present at least with one shop. The author classified the settlements into five categories on the basis of the number of permanent inhabitants (National Regional Development and Spatial Planning Information System (SIS) data from 2016), then the data were summarized on a spreadsheet, in each individual group indicating the number of settlements where the different types of art shops are present. When examining spatiality, spatial information technology methods were used. By using Mapinfo 12.5 software, art shops in the database were represented on the map after the exact address of the shops had been geocoded. To examine spatial similarities and differences each and every type was given a different symbol. Spatiality of art shops in the capital and in the countryside are represented on different maps in the study, in case of Budapest the map indicates the district, while the other map shows the county borders.

## **RESEARCH RESULTS**

### **Regional differences in art trade in Hungary**

As the data in Table 1 show, a total number of 377 art shops operated in Budapest in the examined period, while the number of art shops registered in the other parts of the country was the three-quarter of it (290). Although the most significant events in art trading are connected to Budapest, the numbers show the significance of art trade in the countryside. If we examine the distribution of art shops according to their profile, the most remarkable difference can be depicted in the number of auction houses. While the number of gallery auction houses operating in the countryside is only four, this number in Budapest is more than nine times bigger. Considerably more galleries and antiques shops can be found in the capital than in the countryside, but the degree of their superiority in the number is less, only 27-33%. Only in the case of antiques shops can we observe a larger number of stores in the countryside, their number is almost identical in Budapest and in others settlements (96-98). The most influential players of the Hungarian art market are the different auction houses, but at the same time this type is the least widespread. Among them we can distinguish gallery auction houses and auction houses (without a gallery function). Considering their numbers,

these make up 10% of the art shops in Budapest, while they account only for 1.4% in the countryside. All these prove the metropolitan characteristics of art trade, trading houses with a long history are primarily located in the capital. Auction houses and gallery auction houses apply a mixed price strategy (combining fixed and bidding price policies), sales can take place in the traditional and in the virtual space too. Trading houses, except for the Villás Galéria és Aukciósház in Debrecen, display their selection online too. The Párisi Galéria és Aukciósház from Pécs holds its auctions in its Budapest site, and the goods of two other auction houses can only be bid for on one of the virtual art markets. Commercial art galleries account for one-quarter (27%) of the Hungarian art traders. They mainly use traditional distribution channels, and do not hold auctions. Galleries are important players in contemporary art life; they play a significant role in the market success of young artists (*Meyer-Even* 1998), apart from promoting the recognition of the artists and their development, they often provide home for exhibitions, art events. The distribution of the number of galleries is similar in both areas (27%), but their larger concentration in the capital can also be observed. The most widespread type of art shops is antiques shops. These shops account for more than one-third of the Hungarian art traders.

As for the layout and inner design of the antiques shops, gallery-like design, stores with smaller or larger shop floors are suitable for displaying the rich selection of art pieces. Although in many cases the provided sets of information on the different antiques shops were not complete, it is interesting that while only 10% of the shops in the capital offer online shopping possibility, in the countryside this rate is over 17%. Considering the fact that art pieces are usually passion goods of great value, for the antiques shops operating in the country it is essential to improve competitiveness, which can explain their presence on the online market. While antiques shops in Budapest have their own websites, shops operating in the countryside, probably considering the reasons of economies of scale, use C2C online marketplaces. Bidding price policy is less characteristic of antiques shops, only less than 10% of them apply it.

In Budapest one quarter of art shops are second-hand bookshops, in the countryside this rate is higher, around 34%. There is a considerable difference regarding online trade. In Budapest 36.5% of second-hand bookshops use multi-channel distribution, in the country only 30.6%. We should note that 22-25.5% of the second-hand bookshops both in Budapest and in the countryside created their own website. The wider range of these stores located in Budapest use services of online marketplaces and advertising portals. For online shops and auction houses quick availability and delivery of the ordered/auctioned goods is of key importance. Regarding the fact that these online markets mostly have their headquarters in Budapest,



second-hand bookstores operating in the capital have a considerable advantage in distribution against their competitors from the countryside; and this can explain regional differences in distribution channels. Similar to antiques shops, second-hand bookshops can be less characterized by combined price policy, most of them work with fixed prices.

### **Spatial characteristics of art trade in the capital**

The distribution of the different types of art traders can be differentiated not only in the capital-countryside relation, but a rather unique pattern can be observed inside Budapest too. Second-hand bookshops are mostly located in the inner districts of Budapest, in the area embraced by the boulevards. In the downtown area (district V) can be found 25% of the second-hand bookshops, while another 30% are located in the neighboring districts (VI, VII and XIII). Shops concentrated in the southern part of district V form the traditional center of second-hand book trade in Budapest (Fig. 1). Traditions of trading in second-hand books in Múzeum körút probably go back to the second part of the 19<sup>th</sup> century. As it turns out from the research interviews, the very first second-hand bookshop in the boulevard appeared in 1891, and played a leading role in trading books in the capital. In selecting the site, the nearby universities and other educational institutions must have played a key role. Second-hand bookshops specialized in medical and music books were shortly followed by other bookstores on the boulevard, and with time the special array of second-hand bookshops evolved. Although private stores were closed down during the socialist era, only state-owned bookshops were allowed to trade in second-hand books, after the change of the regime, retailing in used books had a new impetus. Another second-hand bookshops operate in Buda in district I, II and XI, where about 18% of the shops are located.

Antiques shops – matching the spatial pattern of second-hand bookshops – are located along the boulevards and the neighboring side-streets. 29.3% of the shops are centered in district V, and their number is also significant in the districts next to the city center (32.2%). In district II there are 11 antiques shops, and in district I, XI and XII another 6-7 shops can be found. While the traditional center of trading in second-hand books is inevitably the Múzeum körút, in case of antiques shops a similar core-area cannot be pointed out. Although antiques shops and second-hand bookshops are represented in the downtown in a larger number, both types are rare in the core of the city, in the so-called traditional shopping zones (Sikos T. - Hoffmann-né 2004). This phenomenon can be explained by the observation of Sikos T. (2000), according to which the secondary shopping zone which embraces the downtown area (the southern part of district V, Rákóczi út, Nagykörút) can be characterized by mainly shops of smaller shopping floor size, which are forced out of the center because of the high rental

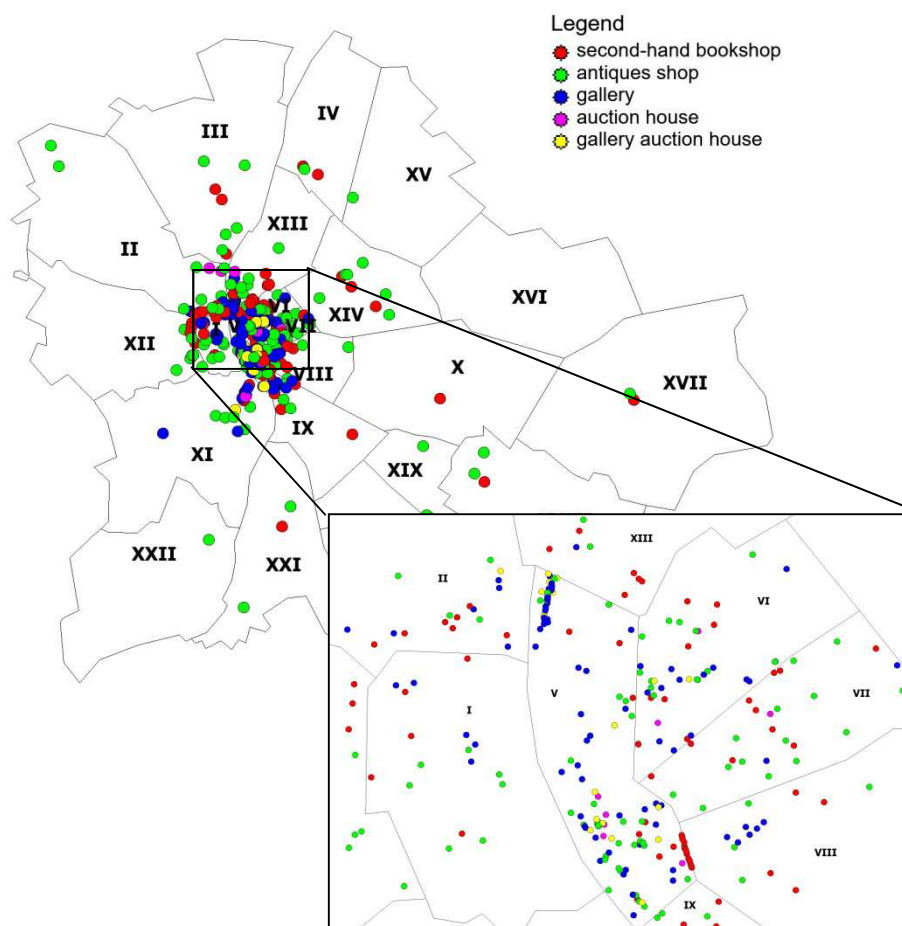
rates. In the downtown retail units, which became empty after the appearance of big shopping centers, not only reputable specialized stores, but respectable second-hand bookshops and antiques shops could find their homes.

Spatiality of commercial art galleries can be characterized by pronounced spatial concentration. The quarter of galleries can mainly be found in district V in Falk Miksa utca and its sidestreets, but it is extended to the whole Central Business District (CBD) area. 54% of commercial galleries are centered here, a smaller part of them are located in the close neighborhood of district V. District VI provides home to 13 galleries, and another 7-7 galleries operate in districts VIII and IX. In the Castle District in Buda and in districts II and XI 5-6 galleries work on the average, making up 16% of the total number of galleries in Budapest. 65% of trading houses – a sub-type of auction houses – are located in the most elegant areas in the city center. Among them we should distinguish the dispersion of gallery auction houses and auction houses. Out of the 24 trading houses in the CBD 19 are prestigious and elegant ones, because they are the ones able to finance the high rental fees. Compared to this, only 42% of the auction houses settled down in the business district. For them – probably because of the common, online distribution channel strategy – central location is not always essential, another aspects can also play an important role in site selection.

As the author sees it, spatial development of the traditional art trade center can be led back to two major factors. Firstly the building of the modern city center in the first part of the 20<sup>th</sup> century and the development of the traditional shopping zone (Sikos T. – Hoffmann-né 2004) created suitable conditions for art traders in the downtown. Secondly, the present location of the art trade center might have been influenced by the financial and economic role of district V, as well as by the presence of state and government administration institutions. Those high-prestige, wealthy members of the society who lived in the tenement houses in the nearby streets (including Falk Miksa utca) and held positions in state administration were also interested in collecting art pieces, thus contributing to creating the traditions of art trade in the downtown area. In Hungary during the socialist era the state-owned Bizományi Áruház Vállalat (BÁV – Consignment Shop) had a monopoly in pawning and art trading, and opened its first art trade shop in this downtown area. Some decades later, from the 1980s, art trading companies appeared after each other (Martos, 2012) in the neighborhood of BÁV, then, after the change of the regime, Falk Miksa utca received its present character. As the interviews revealed, this was a very slow process, because previously wealth-accumulating in art was mainly restricted to collecting furniture made for individual orders only, since the state regulated the purchase of art works. The first decisive and most characteristic player in the

street was a picture framer who became later a trader in art. This was followed step by step by another private art shops in the street.

**Figure 1** Spatial characteristics of art trade in Budapest (2017)



Source: own edition based on own data

### Spatial characteristics of art trade in the countryside

When we examine the spatial distribution of art shops, we cannot rely exclusively on map representation tools, since identifying the reasons for regional differences which derive from the heterogeneity of space, social, economic and cultural factors must also be considered. Settlements of different sizes, with different histories and functions provided different conditions and possibilities for the appearance of art traders, so due to this fact, the different features of the settlement network also have to be examined. As Table 2 shows, in case of towns with more than 1,000 inhabitants, the PEX index of second-hand bookshops and antiques shops reaches the maximum, which means that in all of the seven settlements there is at least one shop of these kinds. This is not surprising because second-hand bookshops and antiques shops together account for more than 70% of art trade shops in the countryside. They are inevitably the most common types. The largest number of second-hand bookshops can be

found in Debrecen (8), and another 4-6 are located in the city of Miskolc, Kecskemét and Szeged. In Szeged eight antiques shops operate altogether, followed by seven in Győr. In Debrecen, Kecskemét and Nyíregyháza only 1-2 antiques shops were registered in the examined period. In this settlement category the presence of commercial galleries can also be considered high, there is a for-profit gallery in all of them, except for Miskolc. Győr and Pécs are outstanding from this respect, where 6-8 shops deal with paintings. Except for Budapest, gallery auction houses can only be found in settlements with more than 100,000 inhabitants, in less than a half of the cities of this size operates this kind of shop. As *Werck-Heyndels-Geys* (2008) point out, cultural activities are only economically viable if the critical mass of consumers is also present there. Obviously, buying, selling and auctioning art works of great value is only profitable if there is a large number of potential customers with high disposable income, so because of this, auction houses can only survive for a long time in big city environment. Auctions were organized by one commercial house in Debrecen and one in Kecskemét, and by two of them in Pécs in the researched period. In settlements with inhabitants between 50-100,000 the competition is tight for the different types of art traders. In Zalaegerszeg five second-hand bookshops and three galleries bring some color to the local retail sector, while in Veszprém five galleries, four second-hand bookshops and three antiques shops define the local art market. In Szolnok and Sopron another two or three shops represent the different types. In the category of settlements with inhabitants between 25-50,000, which includes 25 cities, the dominance of second-hand bookshops and antiques shops can be observed. The PEX-value is higher for antiques shops (0.61) than for second-hand bookshops (0.57). Until now there are 17 settlements with some kind of art store, the number of settlements with an antiques shop is one higher than that of with a second-hand bookshop. In this category the presence of commercial galleries is smaller, only one-third of the towns have this type of art shop.

**Table 2** Penetration (PEX) indices of art traders in the countryside

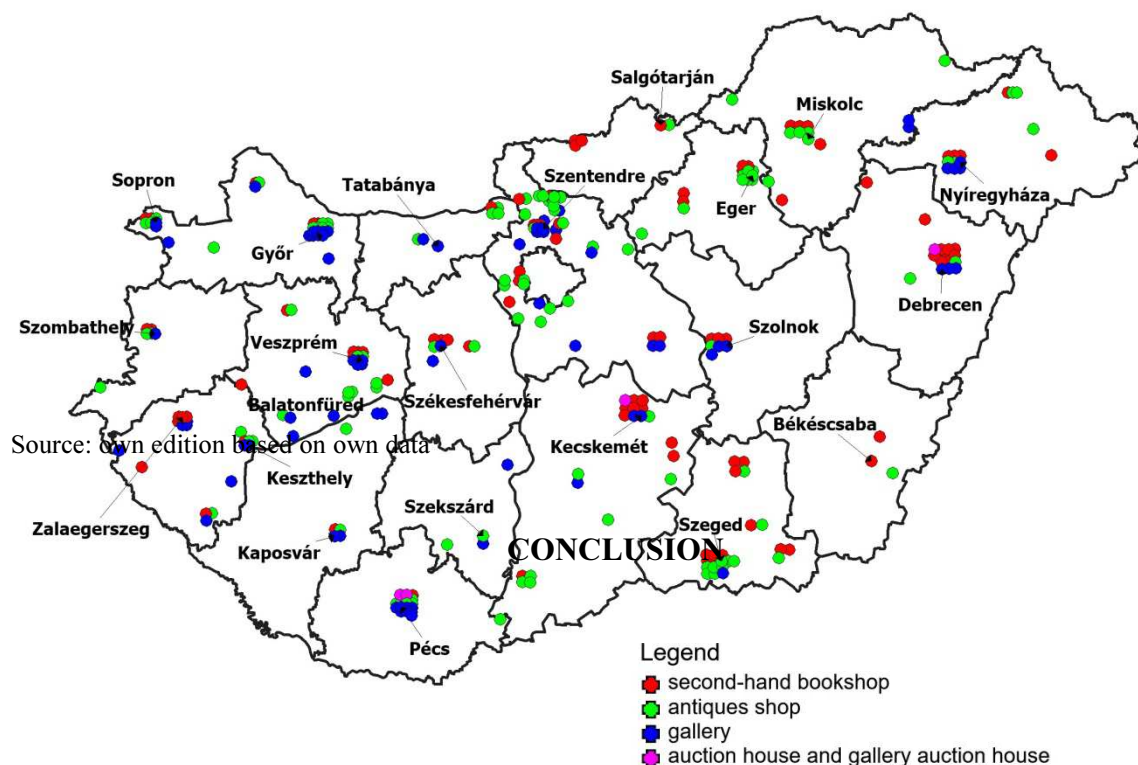
Size of settlement (1000 people)	Number of settlements	Second- hand bookshop		Antiques shop		Art gallery		Auction house	
		pcs.	PEX	pcs.	PEX	pcs.	PEX	pcs.	PEX
over 100	7	7	1,000	7	1,000	6	0,857	3	0,428
50-100	11	9	0,818	7	0,636	8	0,727	0	0,000
50-25	28	16	0,571	17	0,607	10	0,357	0	0,000
25-10	96	9	0,093	15	0,156	6	0,062	0	0,000
under10	3012	8	0,002	17	0,005	12	0,003	0	0,000

Source: Own calculation based on Tiner (2010)

Szentendre's city center is enriched by six for-profit galleries, and when talking about this settlement category, two art saloons in Siófok and two in Cegléd must also be mentioned. The number of antiques shops is outstandingly high in Vác (5), while in Esztergom and Baja three, and in Budaörs two shops deal with retailing antique art pieces. The retail outlet network of Szentes and Szentendre are enriched with three second-hand bookshops in each, in Cegléd and Gyöngyös two and two shops of this kind can be found. If we examine the map on Fig. 2, there are more differences in the regional dispersion of the different types. Although art traders are concentrated mainly in cities with larger population, a greater number of second-hand bookshops can be found in the university cities (Debrecen, Miskolc, Kecskemét and Szeged) in the eastern part of the country. Commercial galleries mainly operate in the Transdanubia. All these can be explained by the differences in regional development, in living standards and in income levels. While demand for used coursebooks and university notes among students in the eastern counties of Hungary is higher, this is less characteristic for the western part of the country. At the same time, profitable operation of commercial galleries requires customers with higher income level, so spatial distribution of galleries adjusts to demand. Spatial distribution of antiques shops shows a more even distribution, shops are less concentrated in large cities. This is verified by the fact that in settlements with a population of 10-25,000 inhabitants antiques shops are the most common type (Table 2), in 15 out of the 96 towns can this kind of retail unit be found. Not only retailing in antiques is vivid in small- and medium sized towns, but as our data collection pointed out, among art traders in the countryside it is rather common to buy up inherited items, and so is paying for the antique goods in cash. However, in this group of settlements the PEX index does not even reach 0.1. Although the number of art traders is very low in this settlement category, in Balatonfüred there are three, in Biatorbágy and Kisvárdá two and two of them await prospective buyers, and in Balassagyarmat three second-hand bookshops operate at the same time. In Keszthely two commercial galleries and two antiques shops enrich the supply. We can state that in the category of settlements with fewer than 10,000 inhabitants, none of the types is significantly present. In general, there is one art trade shop in each settlement, only the two commercial galleries in the town of Tokaj and the two antiques shops in Balatonalmádi are exceptions. We also should examine the geographical location and the different settlement features of the municipalities and large villages in question. In many cases the gallery does not operate in the central settlement, but in the gravity zone is there an art saloon (Nagyecsk-Sopron, Szabadbattyán-Székesfehérvár, Vértesszőlős-Tatabánya). These agglomeration forces work in the attraction zone of the capital, in the case of art traders in Budaörs, Biatorbágy and Pilisvörösvár. In cities with larger population near Lake Balaton (Balatonfüred, Keszthely,

Siófok), and in smaller settlements (Badacsonytomaj, Balatonakali, Balatonalmádi, Hévíz) the different kinds of shops and galleries are also present, which can be explained primarily by the demand-stimulating role of tourism. Similarly, touristic activities stimulate local art trading activities in the Tokaj wine region, and in towns rich in cultural heritage sites (Eger, Esztergom, Sopron, Veszprém). We must mention the antiques fair in the Danube bend, which is famous throughout the country. Its development can be led back to several factors. Besides the picturesque scenery and the numerous sights, the region has a favorable geographical location, the proximity of Budapest creates ideal market environment for antiques shops in Vác and Visegrád. At the same time in the Danube bend traditions of cultural and art life go back to centuries. Apart from the famous artists' colony in Szentendre, the free school of fine arts in Zebegény and other art workshops, which still operate today, all enhanced the appearance of galleries and art traders in the neighboring settlements (Nagymaros, Sződ, Verőce). In the 1990s another famous artists' colonies were established in Hungary whose spirit remained and is still carried on by second-hand bookshops, antiques shops or a gallery (Gödöllő, Hódmezővásárhely, Kecskemét, Szolnok). The spatial distribution of art shops in a particular county also reflects local history. In settlements with rich historical past and civil traditions (Balassagyarmat, Tata) art shops appear in a greater number than in younger county administrative seats which are mostly industrial cities (Salgótarján, Tatabánya).

**Figure 2** Spatial characteristics of art trade in the countryside (2017)



Although the center of art trade in Hungary is inevitably Budapest, art trading activities in the countryside are also remarkable. If we examine the spatial distribution of art traders by type, we can state that auction houses, gallery auction houses and commercial galleries are mainly centered in the capital, while the proportion of second-hand bookshops is higher in the countryside. At the influential trading houses of the art market multi-channel distribution can often be observed, some auctions in the countryside carry metropolitan features (auction in the offsite center of the company in Budapest or on an online market). Because of their art patronage activities and cultural functions, in most cases galleries create homepages, many of them apply a fixed price policy and sell locally. In the countryside antiques shops appear in greater proportion on the online distribution channels, which goes back to reasons for competitiveness. Compared to this, in Budapest second-hand bookshops do this, due to their advantages in distribution activities. Considering that creating an own web shop, operating it profitably, and developing it constantly requires remarkable expertise and financial investment, and this investment mostly yields profit for larger trading houses, besides auction houses mainly antiques shops in the capital do so. A more cost-effective way of appearing on online spaces is C2C markets, using the services offered by art advertising portals, which is characteristic for antiques shops in the countryside. It is also a favorable opportunity for second-hand bookshops in Budapest to increase sales. The most elegant business district in Budapest mainly provides home for reputable auction houses and gallery auction houses, but the majority of the galleries are also located in the downtown area. Second-hand bookshops and antiques shops are mostly centered in the area around the city center and in the districts in Buda. Spatial separation of the different types of shops can be explained by the differences in rental fees. The development of traditional art trade and second-hand bookshop centers was greatly affected by tradition, the proximity of contemporary public institutions, and the presence of a trading house with a central role, while in Buda their appearance near the Buda Castle was induced by flourishing tourism.

If we examine the occurrence of the individual types according to the categories of settlement sizes, we see that auction houses in the countryside can be found in cities with a population over 100,000 people, where market conditions for profitable operation are provided. The occurrence of commercial galleries in settlements with fewer than 50,000 inhabitants is rather small, their spatial distribution matches demand. In settlements with inhabitants between 25-50,000 people, the presence of antiques shops and second-hand bookshops is still remarkable. The size category where the business environment is still favorable for their activity is about 10,000 inhabitants. Concentration of second-hand bookshops is considerable mainly in

university cities, while the spatial distribution of antiques shops is more even. Tourism might have a demand-stimulating role in the settlements around Lake Balaton, and in cities and towns rich in historical sites and architectural heritage. In certain cases the individual types appear in the agglomeration zone instead of the central settlement. Traditions of art trade can be observed in towns with great civic history, but galleries can also keep alive the memories of old artists' colonies or vivid cultural life.

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## **A MAGYAR PÉNZHELYETTESÍTŐK OSZTÁLYOZÁSÁNAK EGY LEHETSÉGES MÓDJA**

### **AN ATTEMPT TO CATEGORIZE HUNGARIAN COMMUNITY CURRENCIES**

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#### **Abstract**

Since the emergence of complementary currencies in the 1980s there have been numerous attempts to classify them, despite that the terms local currency, community currency and many others describing place-based monetary tools are not considered similarly by scholars. The local currencies take many forms, and local governments play different roles in their emergence and development. In Hungary there has been an increasing attention and discussion around the idea of implementing these alternative monetary tools. There is a growing number of working complementary currencies in Hungary, but academic research focuses mostly on whether these can contribute to the local development and what kind of effects they have.

The aim of this paper is to present a possible categorization of Hungarian complementary currencies based on the role local governments played in their implementation. I evaluate whether these community currencies are effective at first, and attempt to categorize them based on their purpose, association form and their relationships with local governments, with the purpose of increasing awareness for these initiatives in the process of policy-making.

**Keywords:** community currency, complementary currency, local governments, classification, Hungary

#### **Absztrakt**

A helyi pénzek megjelenése óta számos kísérletet tettek arra, hogy e pénzhelyettesítőket klasszifikálják, annak ellenére, hogy a tudományos életben még azt illetően sincs egyetértés, hogy mit is értünk pontosan a fogalom alatt. A pénzhelyettesítőknek számos formája létezik és létrehozásukban a helyi önkormányzatok különböző mértékben játszanak szerepet. Magyarországon a jelenséget egyre növekvő figyelem övezi, a 2010-es évek óta működő hazai példákat azonban főként a település-, és területfejlesztésben játszott szerepük alapján vizsgálják. Jelen tanulmány célja, hogy a hazai komplementer pénzeket a helyi önkormányzatok szerepvállalása alapján klasszifikálja. Vizsgálat tárgyát képezi, hogy ezek mennyire teljesítik kitűzött céljait, milyen formában működnek és mennyire szoros kapcsolat áll fenn a helyi önkormányzatokkal. Mindezt azzal a céllal teszi, hogy felhívja a helyi és országos döntéshozók figyelmét ezen kezdeményezésekre és útmutatóként szolgáljon a jövőbeni együttműködések forgatókönyveire.

**Kulcsszavak:** pénzhelyettesítők, magyar helyi pénzek, helyi önkormányzatok, osztályozás, Magyarország

## INTRODUCTION

When describing currency systems, which operate alongside the national currency, the terms most widely used are complementary currency or community currency. They do not aim to replace the national currency, it simply means, that “the existence of the two currencies depends on the other without being casually linked” (Trischler, 2014:1, Kennedy-Lietaer, 2004). These alternative currencies serve as money substitutes. They can obtain many forms depending on their function and geographic delimitations (Trischler 2014, Preissing, 2009). Whilst local currencies operate in a specific area e.g. a town, a city or a neighborhood, regional currencies are used in a wider geographical area. This paper does not examine the so called technical cash equivalents.

In the literature there is no common definition “beyond a series of considerations distinguishing specific items between complementary currencies” (Blanc, 2011: 4), let alone a differentiation between the two. There have been attempts to classify complementary currency (CC) initiatives, but there is no commonly accepted typology. The major problem that arises is that CC schemes due to their diversity and dynamics do not fit into any standard classification. In addition different objectives may lead to different categorizations (Blanc, 2011).

The purpose of this paper is to outline a possible categorization of complementary currency systems, and classify Hungarian complementary currencies based on the built typology. Section 2 discusses previous classifying attempts, in length the typology made by Jérôme Blanc, Marie Fare and Jens Martignoni. Section 3 proposes a differentiation drawn on previous literature, and section 4 applies it to a typology. Based on the built typology section 5 proposes a distinction between Hungarian schemes. Section 6 contains conclusions.

## EXISTING TYPOLOGIES

In English literature there are only a few classification systems on the subject and these are mostly proceeding from the traditional understanding of money, which is unable to capture the special features of complementary currency initiatives (Martignoni, 2012). In Hungarian literature little work has been done on the classification of operating complementary currencies in the country. Most of the literature limits itself to their forms, functions and impacts of their application in local society. A general typology is not given, hence my attempt to draw up the outline of a classification for the working CCs in Hungary.

To build a relevant system one must first review the theoretical and methodological contributions to the topic. One must understand how these typologies are built, which sets of items are combined to make up the system. According to Blanc the difficulty lies in creating a system “that is flexible enough to let space for innovation” (Blanc, 2011: 5). Building a new

one should not have the aim of replacing existing typologies. The problem is that many previous experiments failed to deepen it sufficiently, and provided instead a series of elementary items e.g. their form, their functions (Blanc, 2011). Kennedy and Lietaer (2004) tried to create a typology of CCs according to their purposes, but eventually only discussed the way they are issued, their function and the way their costs are covered etc.

Blanc (2011) proposed that one should not focus on items but rather on projects. He introduces a distinction between three sorts of projects. There are “territorial projects centered on a geopolitical space, community projects and economic projects centred on production and market exchange activities” (Blanc, 2011: 6). He also emphasizes the importance of the project’s background. Implementers could be non-profit organizations, informal groupings, governments or firms. Schemes implemented by firms and national currencies are removed from his analysis. He sets ideal-types of currency schemes based on the space considered, on the purpose and guiding principle. He also proposes a second level of classification, distinguishing four generations that overlap and are gradually changing (Blanc, 2011).

For Martignoni’s (2012) typology Greco’s (2001) three basic principles serve as the basis. He presents a set of questions, and develops an evaluation system. A unique type may then be assigned through a division into quadrants. The four key questions are about the permission to issue the currency, about the basis for the currency, about the costs and benefits, and about the aims of the schemes. Dimension A of the typology shows who has the permission to issue currency; the second dimension distinguishes between currencies with the bases pure personal loan, goods and services, material assets, property and higher value currency. The key issue is how much currency can be brought into circulation. The tools used to assess the circulation are costs and benefits. Costs can be large holding costs, or small holding costs. There are also complementary currencies with no costs. The schemes can serve individuals, a group or a community or the general public. They could also serve as a means for a group to achieve positive effects for others e.g. socially disadvantaged (Martignoni, 2012).

Jerome Blanc and Marie Fare (2013) also presented a paper that concentrates on the role played by local governments and administrations in the development and differentiation of CCs. They explain the role of governments in the emergence of four generations. They also discuss the problems local governments have to overcome, and traps to avoid if they commit themselves to implement such schemes. The presented generations help to understand the relationship between complementary currencies and local governments. In the first generation of CCs e.g. LETS model the local administration does not play a role, they are not part of implementation process. Second generation schemes e.g. time banks have been used as tools to strengthen social ties at the community level. The third generation CCs e.g. Ithaca Hour

seek advanced partnerships with local governments and authorities, also with local banking institutions. The fourth generation has a central role for local governments.

Marie Fare et al. (2015) examine the impacts of complementary currencies in terms of sustainable territorial development. Fare et al. identify three potentials in relation to sustainable development: making economic, social and political activities territorial, the revitalization of exchanges and modifying community practices and values.

Fesenfeld et al. (2015) argue that the ideology and ideals of the implementer shape the “constituency of the users, the size of the user group, their interconnection with similar projects and the goals of the scheme” (Fesenfeld et al., 2015: 166). They may be driven by a political ideology, by the motivation of promoting the regional economy, or by sustainability.

Siglinde Bode (2004) proposes a typology based on the type of business relationship. There are four possibilities according to Bode: business to business, business to customer, customer to customer and customer to business. From this she develops a scheme consisting of the relationship, payment system and backing of CCs. Martignoni argues that this typology is based “primarily on conventional business thinking, therefore poorly suited as a starting point for a true classification” (Martignoni, 2012: 4). Nevertheless it provides an important insight into how complementary currency schemes work.

The Talent Switzerland association classifies currencies by purpose and by sector (Dold, 2010). A spectrum between market/competition and relationships, gift economy is presented. Sectoral money that can be used for limited economic activities is also distinguished e.g. Fureai-Kippu for care in old age, or educational vouchers in Brazil.

Zagata (2004) states, that “the establishment of complementary currency in a locality is per se unique”. The result depends on factors such as the needs of the community, on the ways of carrying out transactions, on the forms of exchange etc. In consequence of this fact one can present an ideal type of CC, but it can never really exist in reality (Zagata, 2004).

As a conclusion they can either have very similar or very different characteristics (Blanc, 2011), it depends on the circumstances in which they are implemented. A typology should not be built in order to classify the researcher’s observations (Blanc, 2011), and initiatives should not be forced into an existing framework.

## **BUILDING A TYPOLOGY**

The above introduced concepts do not make it fully possible to compare complementary currencies. According to Martignoni (2012) in most cases terms like function or goals are used to describe money in and of itself and are not usable in distinguishing between different currencies. There are many overlaps and similar classifications, but a clear evaluation system that could be implemented for various types of CC schemes is missing (Martignoni, 2012).

The models used by Blanc-Marie Fare and Martignoni are the closest to a flexible system that enables further development. Thus the models of Blanc - Marie Fare and Martignoni are used as the starting point for the development of my typology.

Blanc (2011) argues that the right way of building a typology is making first its purpose clear. This paper concentrates on the role local governments play in different CC schemes, and how they can help to spread, and develop these initiatives. The analysis of Hungarian schemes could offer at last partially an answer to the question regarding the support of CCs in a country, where partnerships between local government and civil society are not the strongest.

In order to build a typology the paper focuses on projects and not on items e.g. the different bases for currency. The general philosophy, the guiding values serve as a major orientation point for the system. Blanc and Fare (2013) identified four generations of schemes that are characterized by their specific relations with the local or central government. They state that although the term generation refers to a “chronological order of emergence, the schemes overlap and a new generation does not put an end to earlier ones” (Blanc-Fare, 2013: 66). Under this respect, this section proposes a differentiation between four type of projects, not using the term generation. These projects have specific forms of relations with local authorities, and have different guiding values. The general purpose each one has is strongly linked to how much they interact with the local government. The philosophy they creators have shapes the development route that these projects follow. As previously mentioned, designers according to Fesenfeld et al. (2015) may have the goal to strengthen community ties, modify values or to make way for a new paradigm. They may wish to strengthen or revitalize the economy, the economic exchanges or they mainly be centered on territorialization of economic, social or political activities.

Drawing on the above mentioned typologies this framework helps to identify two types of projects depending on the designers' goal. The first type of projects primarily focuses on networks of individuals, or businesses, aiming to strengthen community ties or to revitalize economic exchanges between them. The second type pursues a territorial purpose, aiming to promote and to protect the regional economy. These kind initiatives have local resilience or local development as a desired result (Zagata, 2004).

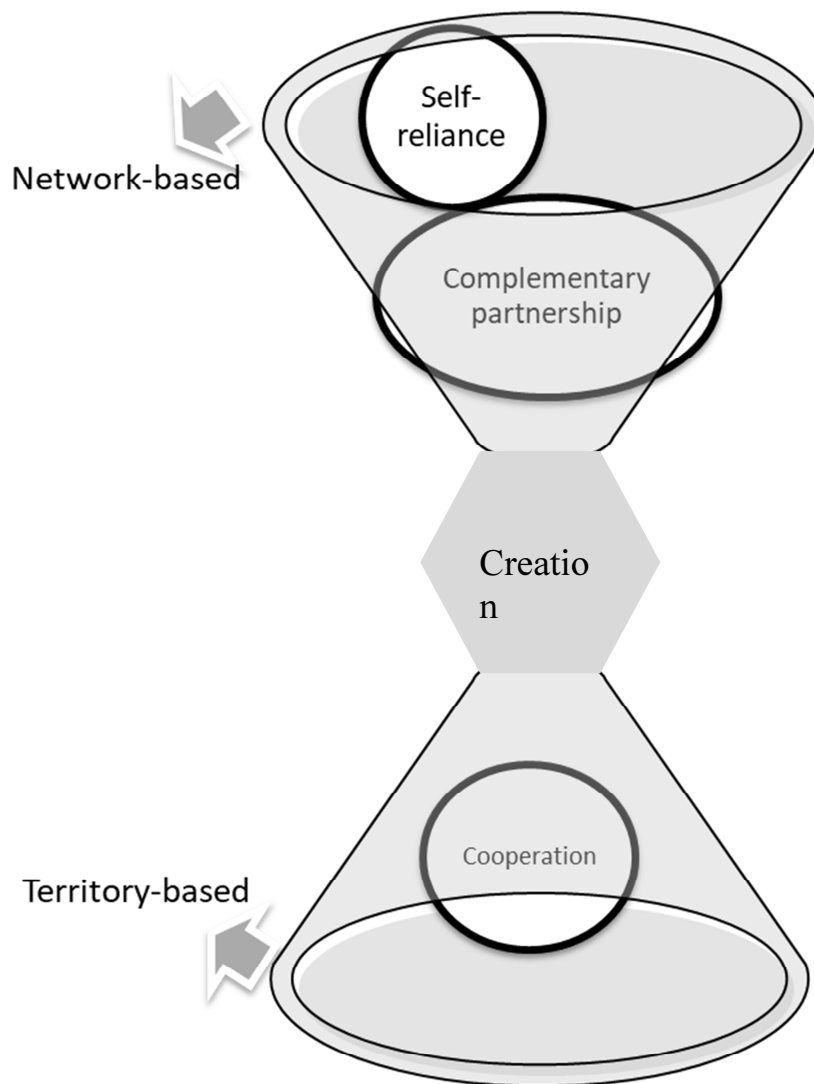
Although the second type pursues mostly a territorial purpose, it is also tied to community or economic issues. An example for this type of scheme is the Chimgauer in Germany. As mentioned above the goal is closely linked with the type of partnership their creators have with local governments.

Based on this the next section proposes a combination of two dimensions into a graph (Fig. 1) that shows the relations between CC schemes and local governments and the space they are

based on. It identifies four types of projects, namely: self-reliance, complementary partnership, cooperation and creation. The foregoing types of projects serve as a basis for the built system, but as it is in the first phase of research, it has much room for further refinement. Nevertheless it could serve as square one for analysis of the partnering between local governments and CC schemes in Hungary.

### APPLICATION TO A TYPOLOGY

**Figure 1** Typology based on the purpose and the role of local governments



**First type of projects: self-reliance - no dependence on the local government and administration, exchange-oriented**

In great majority the first type complementary currency schemes were implemented by communities in response to needs that are not satisfied by the market (Blanc-Fare, 2013). They are typically grassroots initiatives that have the empowerment of the community as aim,

their goal is to revitalize social exchanges, and make the community self-reliant. The overarching principle is reciprocity; this kind of scheme has trust as its basis. These kinds of communities are most of the time independent from any geographical dimension (Fare, 2011). No central authority is required to guarantee the currency and manage its supply. As these projects are not dependent on the assistance of any kind of authority, they have no relationship with the local government. “In most cases there is a will to keep one’s autonomy from government and administrations” (Blanc-Fare, 2013: 66).

The closest example is LETS, a mutual credit currency. Each transaction is recorded as a “corresponding credit and debit in the two participants’ accounts. The quantity of currency is issued through their exchange, and automatically sufficient” (Transaction Net, n.d.). There is no need for an organization to manage the quantity; it works in a self-organized way. The amount of currency needed in such a transaction is negotiable. It is a scheme that can be applied to various communities, where products or services require a different amount of work or different set of skills (Jelínek et al., 2012). These kinds of projects do not need the involvement of local governments, and it is very rare that the community reaches out for the local authorities’ support. However there are some cases, when local governments supported them, by accepting the community currency in local tax collection or tax debt repayment e.g. the case of Argentinean trueque (Blanc-Fare, 2013).

### **Second type of project: complementary partnerships - for solving social issues, service-oriented**

These schemes are pure community currencies built on “multilateral reciprocity” (Blanc, 2011). These kinds of CCs are service credit systems that aim to help the elderly, the sick or anyone in need of help. The difference to the first type of initiatives lies in the form reciprocal exchange. Time banks’ concept focuses mostly on services unlike LETS, where trading is concentrated on goods (Blanc-Fare, 2013). According to the inventor Edgar Cahn (2004) the persons “who benefit from the services are not necessarily the persons who have to return a service in order to balance their account” (Moers, 1998: 24).

The first generation of these programs began in the 1970s with Fureai Kippu, a Japanese complementary currency. They were used to provide personal services especially for the elderly. The second generation of service credit systems involves not only the elderly, but provides service to other groups, such as people suffering from AIDS virus, teenage mothers, or public housing residents. These schemes have integrated into health care systems, colleges, state and federal social agencies etc. In consequence they maintain relatively close ties with local governments or organizations in the social economy (Moers, 1998).

A good example is the Watford time bank was set up by the local council, as part of its 'Better Government for Older People' initiative, and "rewarded local residents for their input into evaluating local services" (Seyfang, 2002: 246). Another example is the case of Italian time banks. According to Coluccia (2001) around the year 2000, 60% of Italian time banks were supported by local council (Blanc-Fare, 2013: 67). Support took many different forms ranging from financial support to direct involvement in the creation and development of these schemes. Time banks could also be linked with local employment or training opportunities, as has happened through the Gorbals initiative, a local economic development initiative (Seyfang, 2002).

In conclusion the second type of projects is often seen as a tool to solve social problems, as a tool to strengthen ties in a community and to encourage members to do voluntary work.

### **Third type of projects: cooperation - seeking closer partnership with local government and actors, economy-oriented**

These CC schemes have the protecting, stimulating and revitalizing of local economy as purpose. Blanc (2011) named these as local currency, because the territorialization of economic or social activities is their underlying principle. They are concentrating on an economic space defined by a network of local businesses and stores. As these kinds of projects seek to have a stronger economical impact (Blanc-Fare, 2013) than the schemes mentioned above, it became necessary to seek stronger relations with local governments. As consequence in many cases e.g. the German Regiogeld local governments became active partners in the spread and development of these initiatives. Cooperation may occur in the form of financial support, administrative support, legal recognition etc. Legal recognition means that payments for local taxes, for health services, for culture etc. can be made in the local currency (Blanc-Fare, 2013).

This kind of support from local authorities may lead to a greater acceptance from local people. In this context a partnership with the local government may be of great importance, and inventors of this kind of scheme purposely seek advanced partnerships to further integrate local currency into the local economy.

A successful example is the German Chimgauer, which is the local currency of the Bavarian Chimsee region. The basic goal behind the scheme was to increase activity rate, for which purpose job seekers and volunteers were provided jobs and received their wages in the local currency. One of the most important employers are local governments of the region (Tóth, 2011). Although local governments did not play a significant role in the creation process, they contributed to its spread.



#### **Fourth type of projects: creation - complex goals, network-oriented and territory-based**

These complementary currencies are territorial projects created by local governments in partnership with local actors. They combine economic purposes with community purposes, and are built with regards to economic spaces. Sustainable development of the given geographical space is strongly integrated into the concept. The main goal is to ensure the financial, social and political sustainability of a geographically-defined space. The complexity of these kinds of schemes requires a “controlling centre” with the necessary financial, technical, fiscal etc. background (Blanc-Fare, 2013). Local governments do not just participate in scheme development as co-creators, but in many cases they initiate the CCs in cooperation with the local community, and local businesses. The complexity also means that these make up a “technically demanding and expensive system” (Blanc-Fare, 2013: 70).

Great example mentioned by Blanc and Fare (2013) for the fourth type is the SOL in France. The complex initiative integrates the aspects of territorial and community projects. It has been created by French local governments and four major organizations in the social economy.

#### **CLASSIFICATION OF HUNGARIAN COMPLEMENTARY CURRENCY SCHEMES**

In this section the paper attempts to classify Hungarian complementary currencies based on the above developed typology. From the operating complementary currency schemes I selected those with the most differences from each other, to encompass the whole spectrum. To understand how CC schemes work in Hungary one must look at the first experiments in this area. “The confrontation of the theoretical presumptions and practical effects is quiet difficult under the conditions of the European post-communist countries” (Zagata, 2004: 482).

The traditional rural communities’ element was the so called *Kaláka*, which is the form of mutual neighbor’s help. The relative closeness of the communities and the lack of resources have given rise to this kind of circle of mutual help (Zagata, 2004). Also during wartime alternative currencies, emergency currencies were used to counter the negative effects that came from the lack of money.

The first still existing LETS scheme, the *Talentum* was established in Budapest in 1996. It was inspired by the LETS initiative in Austria. *Talentum* has around 150-200 members, who have meetings every second months. Most of the deals are made during these meetings or at club meetings. In the following years several similar initiatives have emerged, with mixed results e.g. the *Zöld Forint Kör* (Green Forint Circle) at Gödöllő, a city close to Budapest, as well as LETS in Szolnok, Miskolc (*Óra Kör*), Tiszaluc and Győr (North, 2004). It appeared that these schemes attracted mainly young people, but the older generation refused to join. Some believed that the complementary currency system tried to bring back the traditional

elements of rural communities, which could not work “in the specific conditions of Hungary as a post-communist country” (Zagata, 2004: 483). Some of the early initiatives like Talentum are still operating, but most of them ceased to exist.

The second wave of CC schemes appeared with the Kékfrank in Sopron, in 2010. Shortly after the Balatoni Korona and Bocskai Korona were also introduced. Some other schemes discussed are the Alsómocsoládi Rigac, and the so called Kör initiatives (Jacsó, 2013). Following the discussion of these schemes I attempt to classify them based on the presented typology.

### **Soproni Kékfrank**

The currency has some very special features and because of that cannot truly be classified into the above mentioned types of projects. Kékfrank was created by a patriotic community, who wanted to reorganize the once organic social and economic relations. The inventor Tamás Perkovátz introduced some other vouchers in Sopron before creating the Kékfrank. The complementary currency was built on an existing community of patriots, who used Perkovátz’s purchase vouchers (Perkovátz, 2010).

For the creation of Kékfrank a new European form of enterprise served as background. The European Cooperative Society is an entity that opens the door for cross-border cooperation. The “HA-MI Összefogunk/If-We Unite Limited Liability European Cooperative Society” was founded by 123 members, both entrepreneurs and individuals. Its strategic partners are the Rajka and Region Credit Union, Chamber of Commerce and Industry, Industry Corporation of Sopron and Its Environs, the CIG Pannónia Insurance Company and the University of the West Hungary Faculty of Economics (Szalay, 2011). Everyone can become a member through purchasing a minimum of 1 share. The complementary currency can be converted into the national currency.

Interesting fact that although the project fulfills multiplex goals, has the revitalizing of local economy as its purpose, the local government does not play any kind of role in its operation. Although the local government has a passive role, its attitude is not dismissive. It does not try to make decisions that are not favorable to them, but does not make any decisions to help them either. The local government simply does not wish to join the initiative. Because of its complexity and the space considered it could be placed into the fourth type of projects, but as mentioned, there is not any kind of role played by the local government in its creation and spread.

### **Balatoni Korona**

The complementary currency debuted in 2012, and is the closest example of the fourth type of CC schemes. It is a result of a complex partnership between the local governments of Veszprém, Várpalota, Balatonfüred, Balatonalmádi, Litér, Nemesvámos and Tihany, the Kinizsi Bank and three other business partners.

In this case the local governments acted as initiators. They provided an appropriate legal framework, technical and financial support, and integrated it into specific public policies. The Balatoni Korona Ltd. founded by members of the partnership issued its currency in March of 2012.

Its main objective was to revitalize the economy of the region and to contribute to social cohesion through re-forming social ties (Sárdi et al., 2013). It meets various objectives and is used as a potential public policy tool by local governments. The local governments are the largest issuers as they provide some other allowances, fees and premiums in Korona. The total amount of such payments is about 12-13 Million Forint, from which 9 Million is related to Nemesvámos, and Várpalota (Sárdi et al., 2013). According to the objectives assigned to this scheme and the spaces it is built with regards to it can be categorized into the fourth type of projects.

General opinions about the system are positive, but the scheme is not without difficulties. The major problem lies in the permanent financial limitations, the erosion of social networks, and the lack of trust in each other.

### **Bocskai Korona**

The complementary currency was first introduced in 2012. Preparations began in the summer of 2011, when the local government of Hajdúnánás founded a holding company, the Hajdúnánási Holding Zrt. to ensure the scheme's financial and institutional background. An interesting fact that at first it was intended to be used only locally, and just later on spread to the surrounding municipalities (Sárdi et al., 2013).

It is a project aiming to affect economic relations in a “geopolitically-defined space” (Blanc, 2011: 6). Local government uses it to achieve certain ends, namely the revitalization of local economic exchanges. The scheme focuses on the daily consumer behavior of local population, so its aim is to strengthen the relations between local businesses, and the local individuals. Its objective is to keep their purchasing power inside the municipality. To keep it local means that first they even rejected the request to expand it to Debrecen.

The acceptance of the Korona is very high. Among the 50 acceptors there are a wide variety of shops e.g. flower shop, construction company etc. Also the local government made

it possible for local individuals to use Bocskai Korona as a means of payment for public services (Sárdi et al., 2013).

### **Alsómocsoládi Rigac**

The Rigac is based on similar considerations as the Bocskai Korona. Its foremost purpose is to combat poverty and exclusion, to promote local consumption and to provide resources for the community. It is implemented only in Alsómocsolád; the local government is responsible for its issuance.

Among the discussed CC schemes it is the one most widely used as means of payment. Local governments provide allowances, fees and premiums in Rigac. Local government collects local taxes in the local currency, and companies tied to the local government also pay part of their employees' salary in Rigac. Although it is limited to the municipality of Alsómocsolád, the possibilities of its expansion were also evaluated. It could be used as a tool to the develop tourism in the micro-region consisting of 5 municipalities. Inhabitants use around 90% of the local currency through the local governments system, because it also became possible to pay in Rigac for public services such as transport, home social care, culture etc (OFA Nonprofit Kft., 2015).

Administrative issues are the biggest challenge they have to face along the road. As the Rigac is part of the local government's budget its financial management needs a technically demanding system (OFA Nonprofit Kft., 2015).

### **Tokaji Dukát**

The latest in the line is the complementary currency of Tokaj wine region. It was born in March 2016 as a result of 27 municipalities' partnership in the region. The idea of making a complementary currency to make the regions' economy prosper again dates back to 2013. The local governments created the Dukát based on the example of Bocskai Korona (Parádi-Dolgos, 2016).

Its main goal is to strengthen the economic and social ties between the municipalities, and is designed to act as a tourist attraction. It is used to promote consumption of local or organic produce. As in the case of Bocskai Korona discounts are provided when purchasing local products (Parádi-Dolgos, 2016). Because of its relative newness there is little information available on the complementary currency. Its website acts as the main information source, according to that there are still just a few acceptors involved. If it meets the expectations and is able to become a widely used regional currency, it may be a great example to follow for regions with low economic performance.

The brief overview of the major CC schemes in Hungary illustrates the part Hungarian local governments play in the development and spread of these initiatives. The presented information is summarized in the following Tab. 1.

**Table 1** Hungarian CC schemes

	<b>Kékfrank</b>	<b>Balatoni Korona</b>	<b>Bocskai Korona</b>	<b>Alsómocsoládi Rigac</b>	<b>Tokaji Dukát</b>
<b>Type of project</b>	can not be categorized; based on complexity: fourth type based on relations with local government: first type	fourth type: creation	fourth type: creation	fourth type: creation	fourth type: creation
<b>Issuer</b>	Ha-Mi Összefogunk European Limited Liability Cooperative	Balatoni Korona Zrt.	Hajdúnánási Holding Zrt.	Local government of Alsómocsolád	Holding of 27 local governments in Tokaj wine region
<b>Origin</b>	founded in Sopron May 2010	founded in March 2012, cooperation between 7 local governments	founded in July 2012 in Hajdúnánás	founded in May 2013 in Alsómocsolád	founded in March 2016, cooperation of 27 municipalities
<b>Scope</b>	Sopron and its region, cross- border	7 municipalities around the lake Balaton	Hajdúnánás	Alsómocsolád	Tokaj wine region
<b>Space considered</b>	geopolitical, economic and social space	economic and social space	geopolitical and economic space	geopolitical and economic space	social and economic space
<b>Purpose</b>	revitalizing local economy, strengthening cross-border cooperation and social ties	strengthening regional economy, and revitalizing social exchanges	strengthening local economy, protecting local businesses, stimulating local exchanges	strengthening local economy, revitalizing community ties	strengthening community ties, protecting regional economy
<b>Relations with local government</b>	no	yes	yes	yes	yes

## CONCLUSION

The first wave of complementary currencies in Hungary, the so called Kör initiatives operated like LETS initiatives. The two major schemes are the Talantum in Budapest and the Suska Kör in Budapest and Szeged. Local governments did not play any kind of role in these schemes. They were typical first type projects, with the aim of strengthening community ties and fulfilling needs that could not be met through the market mechanism. They did not involve large groups, and most of the members were young people. Projects of the second and third type based on the cooperation with local governments cannot be observed in Hungary.

Frontrunners of the fourth type projects are the Balatoni Korona, the Bocskai Korona and the Alsómocsoládi Rigac. In these schemes local governments play the most important role, are the creators of them. These initiatives combine economic purpose with social purpose. As the local or regional economy grows it becomes more self-reliant and the dependence on outer areas will be reduced. This is in accordance with the model of local endogenous development (Zagata, 2004). Social capital is a crucial element for its success, because the community that uses a complementary currency strengthens its social ties. The specific social and cultural factors also affect the success of CC schemes.

Early attempts in Hungary concentrated on keeping the traditional elements of the once prospering rural communities alive e.g. the mutual help between neighbors. The new wave of complementary currencies concentrates mostly on a territory, combines economic and social goals; and local governments play an active role in the invention, implementation and expansion process. It attracts not just young adults, but local patriots, businesses, social institutions, local authorities and individuals who look to fulfill their needs locally.

As Blanc-Fare, and Martignoni made attempts to categorize international CC schemes, this paper left out the classification of these schemes and concentrated on the features of Hungarian complementary currencies. Even so classification was not an easy task, as there are some special cases that cannot be clearly classified into one type of project like the Kékfrank. This supports Blanc's (2011) argument, that an ideal typology does not truly exist and that CC schemes are more of a combination of basic items adapted under given circumstances. The newest generations in Hungary are certainly linked to local governments, and are acknowledged as a tool in local development processes. To further study these schemes the built system could serve as a basis of action research.

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## **SOCIAL RESPONSIBILITY AND PARTICIPATION – IN LOCAL AND SPATIAL PROCESSES**

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Társadalmi felelősségvállalás és részvétel

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The authors published an essential monograph about social responsibility and participation, as it discusses this nowadays more and more appreciating issue from a wide spectrum with holistic approach and multidisciplinary characteristic (from the aspects of economics, sociology, political science, law and psychology) and with a view-forming purpose by making its role and value in our society's successfulness aware. Another novelty of the book is that it mainly deals with the individual and civil organisational aspects of responsibility instead of corporate social responsibility by expanding its conceptual and theoretical frameworks. The aim of the book is to introduce how citizens, civil/non-profit organisations and other social institutions can take responsibility for themselves, the society and for each other. Besides the two terms indicated in the title, the book also discusses the issues of social capital, social relations, trust, education and positive attitudes, which are all considered to be the preconditions of responsibility and participation by the authors.

All of these provide the three basic pillars for the logical framework of the book with nearly 300 pages, and that is how the literature, the methodological and the empirical research component of each issue is constructed. Besides the introduction, the book is divided into six main chapters out of which the first two (Chapter 2 and 3) conceptually clarify the issues of responsibility, social participation and participatory democracy with almost a complete literature review (the bibliography of the book contains almost 400 references). They also discuss those traditional and modern information-gathering and –providing, interactive,

consultative methods and techniques, which may be adapted for citizens and civil/non-profit organisations to latch on to decisions and processes affecting their life and living-space. The book details altogether more than 30 means of participation – which have already been used or will be potentially used in our country in the future – like referendum, protestation, residential forum, public hearing, round-table discussions, different events, offline and online media, trainings, research, modelling, simulation, civic parliament, future workshop, and Word Café, supporting this way the everyday work of professionals.

Besides the comprehensive introduction of the theory and methodology of social responsibility and participation, the authors – with the help of new empirical research findings based on questionnaire surveys (a residential one with 1071 respondents and a corporate one with 294 respondents) and expert's interviews (6 pieces) – also put a major emphasis on that the actual opinion and behaviour of citizens and civil organisations regarding the issue could be known as well as on to illustrate everything with good examples and practices. With this step they exceed the literature review of the issue and create the systematic and comprehensive empirical imaging of actual opinions and attitudes regarding social responsibility as well as their involvement in professional discourses. 58 figures, 26 tables and a detailed methodological appendix make the findings easily understood and more expressive. From the viewpoint of regional science the book discusses the 'differences in applicability' related to each spatial level (settlement, area, region, nation, supranational level) in an interesting way, however, the main scene of individual and community forms of participation and responsibility is the locality, the local society, the settlement.

The book's main and basic level of interpretation is the objective, factual, systematic, and scientific elaboration, comparison, description and argumentation. In spite of this, a more interesting layer is also put on this frame, namely the definite and clear normative attitude of mind regarding the importance and the main emphases of the issue. The authors try to shed light on that society is not only the companies' responsibility, but also that of the people, our groups and communities as well as that of the whole civil society. Every affected member of the society is responsible for their own life and operation, as well as for social, economic and political processes. They emphasise the importance and value of local society, locality (settlement, area, local government), because we – as affected, responsible, active citizens – can join to community processes in these points, furthermore, we can learn here the several forms, methods, procedures, ideas, beliefs, values and needs of active social participation.

International and domestic pieces of research about widely interpreted trust, social capital, civil activity, and daily time consumption clearly show that the decline of communities, the

pinch of social activities, the erosion of interpersonal relations, the fall in the responsibility for each other and in attentiveness cannot be explained by the lack of free time in an era when people spend an average of 4-5 hours a day in front of diverse screens (TV, mobile phone, computer etc.). The question why it is easier to spend time at home in the form of passive pastime than to go out, be among people, live community life, follow with attention the evolution of issues of our main social contact surfaces, our own and direct micro- and mesosphere, form opinion, and do and represent something actively, arises in the authors rightfully.

The basic thought of the book is that these motivations and inner urges cannot be forced from the top, but 'people must want' these changes, and without connection networks, strong and weak bonds, and trust in each other that social fabric is missing which could ensure appropriate surface and structure for these intentions and efforts. The book clearly takes a stand on where the work should be started: 'all in all, we think that education – be it any form of training – has a huge role in that we could live in a society where there are communities and these communities count on each other and know those rights and opportunities of theirs which enable the highest possible level of implementation of active democracy' (p. 258.). Besides networking, structural and institutional conditions, another essential element of successful community activity and responsibility and of interest enforcing and opinion-declaring mentality is the people's image about themselves, their own functions and opportunities. Or as the authors say: that 'individuals should not consider themselves as dependants', but as active actors with civil consciousness who recognise that the processes of their narrower environment are not things beyond them, but shapeable and influenceable phenomena, however, its condition is to leave the relatively safer private, personal zones and to step out to the community-social scene.

The novelty of the book's other part which is based on empirical data collection lies in its complexity, elaboration, and its deeply penetrating analytical profile. International comparative analyses provide an unfavourable image about Hungarian civil activity, the low level of social participation and the enormous passivity of the inhabitants, which are only starting points for the authors. In the course of their own research they created a separated variable to measure social participation by connecting seven forms of participation. In their interpretation social participation and engagement is a complex activity package in which voluntariness, participation in community initiations, donations, offering 1% of personal income tax, participation in referendum, public hearing and residential forums, as well as other forms of opinion-declaring also have their roles besides membership in social

organisations. Their activity-passivity indicator (very active, rather active, weak activity, rather passive, absolutely passive) created by counting the occurrence of each form of participation is able to measure more precisely and more ambiguously the willingness of the population in the sample to take responsibility and act. Based on their research, 15% of the respondents can be considered very active as they act in civil organisations, volunteer, form opinion, enforce interests, donate etc. at the same time. Another 30% of the respondents are considered as rather active with frequent occurrence of community forms of action. Based on their research, 45% of the respondents contribute actively to the operation of civil society, the formation of democracy, the handling of local or regional social problems, and the formation of local issues.

Their correlation-analyses tested with association metrics strengthened the paradox of activity, responsibility according to which society-developing and –enhancing, wealth-increasing activities are activated by layers with higher status (high income, education, leading position, entrepreneurial being), while more unfavourable social position causes more passive behaviour. It is more difficult for the Hungarian society which struggles increasing and persistent poverty, deprivation, marginalisation, underclass, and the propagation of precariat to create the above-mentioned conditions, mentalities, needs and commitments, as well as the time and money needed for it.

The professional importance and value of the introduced book is raised by another function. Besides the elaboration of theoretical and professional literature, and the comprehensive empirical surveys, the authors outline the potential elements of their programme for active citizen and active community, so they convey a kind of recommendation package in which they draw up specific development ideas and intervention options in several fields. Besides our primary socialisation medium (family), it is the each level of education system that can convey democracy, the idea of community action, the importance of cooperation, responsibility, and helping behaviour. In a playful form the nursery school and the elementary school may provide a field for this with such projective, activity-based, experimental subjects, programs and projects that bestow a wide range of social knowledge upon the members of the new generation. In case of the adult age groups of our current society we need solutions like e.g. the initiation of events and program opportunities, the spreading of information leaflets, the organisation of trainings, summer schools, higher education courses and programs related to the topic, and publicly available presentations.

The authors warn that in Hungary the ‘we cannot achieve change’ thinking is still strongly present, however, ‘a lot of small initiations, sooner or later, evolve into social level, but for this, they must dare to act, while decision-makers must accept ideas, thoughts (p. 267.)’. Having read the book, we can accept and receive the way of thinking, the action courage, and the conviction in the changeability of capacity which pervades the whole book, the professional work of the authors as well as the value system and knowledge provided by them.



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**Doctoral School of Regional and Economic Sciences**

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**András Ricz**

The effects of cross-border cooperation programmes on the regional  
development of Vojvodina

**Theses of Doctoral Dissertation**

Thesis summary and summary of professional accomplishment

Supervisor: **Dr. habil. Imre Nagy, PhD**, associate professor

Győr, 2017

## The dissertation's goal, hypothesis and issues

The doctoral dissertation's goal is to examine the results of the projects implemented during the EU financial framework 2007-2013, as well as the following two years, financed through the means of the European Union's Instrument for Pre-accession Assistance (IPA) allocated to cross-border cooperation. During my work I focused on Vojvodina, and I examined the results of the Hungarian, Croatian and Romanian programme territories in relation to regional development.

The research and the work based on it aims to give an answer to the assumption that regarding the regional development of Vojvodina, the cross-border EU resources resulted in long-term positive development, as well as to examine methods for using resources by certain municipalities and other subjects active in regional development, and their methods to utilize these funds sustainably. The question of the role of Hungarian minority in using the funds can be raised, as well as whether the previous experiences were a foundation for a better absorption ability of resources in the future. All these hypotheses are built on one another and are strongly linked to each other. Throughout my work I have been searching for facts that can either confirm my contentions or disprove them.

The fundamental issue of the dissertation focuses on the development of Vojvodina, the territory's relative regional development is mainly due to historic traditions, which evolved during the last couple of decades. The political and geopolitical changes of the 90s, and Serbia's economic and political relapse led to the break of the development path of Vojvodina, and in relation to the other parts of the country, it lost its leading position of national significance. The EU support (along with others), and within it the cross-border programmes' resources can be a solution to this problem, as they are available to Vojvodina more concentratedly than to other regions of the country. I built up five hypotheses based on this issue, which are strongly linked to each other and logically cohere.

Main hypothesis:

*The European Union, - inter alia - the cross-border cooperation programme had positive effects on Vojvodina's regional development.*

Examining the history and the process of regional development of the Autonomous Province of Vojvodina, we can conclude that after the end of World War II, the territory served as a playground of Yugoslav political interests of all times, up to now. In 2018, it will be 100 years since the Austro-Hungarian Empire lost its authority over this territory. The territory that was once one of the most significant food producer, became the part of a much less developed country that was freshly torn out from the Ottoman Empire, so it became a more developed province of the then Kingdom of Serbs, Croats and Slovenes (later Yugoslavia). The exploitation of the state started immediately, which became more intense after the declaration of the Federal People's Republic of Yugoslavia. In this period, not only the produce was transported, but the factories and processing plants were dismantled and taken to less developed Bosnian and other territories, however the population of Vojvodina was paying most taxes constantly into the treasury (Zarade u Republici Srbiji (Earnings in the Republic of Serbia), 1965-2005). The constitution adopted in 1974 somewhat stabilized the region's territory, and the approved autonomy secured a partial independence. This was again only a tool of a political power game, this way Tito was compensating the Slovene and Croatian aspiration towards political and economic independence.

With the end of Yugoslavia, there was no more need for compensation, nor was there need for autonomy. The region's exploitation began again, which became more obvious: **Milošević's regime** in the 90s first began to take away the foreign currency savings of the agricultural producers in Vojvodina, after that it took their grain by regulating lower purchase prices or in worse cases, not even paying for it. After the change of regime at the beginning of

2000s the political parties in Vojvodina succeeded to gain a limited autonomy, which entered the Serbian legal system by the adoption of the Omnibus Law (Zakon o utvrđivanju nadležnosti Autonomne pokrajine Vojvodine (Law on determining the Autonomy of the Autonomous Province of Vojvodina), Official Gazette of the Republic of Serbia 6/2002 and 99/2009), which was never fully complied as characteristic for politics on the Balkans, which is the same case with the Serbian Constitution, which declares that Vojvodina is entitled to 7% of the budget of the Republic of Serbia (Ustav Republike Srbije (Constitution of the Republic of Serbia, Official Gazette of the Republic of Serbia 98/2006).

Analysing the Serbian regional development strategy's action plan (Strategija regionalnog razvoja republike Srbije za period od 2007 do 2012 godine (Republic of Serbia Regional Development Strategy for the period of 2007-2012), Official Gazette of the Republic of Serbia 21/2007) there are no elements that prescribe the development of Vojvodina as an independent region. Serbia's Spatial Planning document being in force between 1960 and 1990 highlights the development axis Novi Sad-Belgrade (Nagy I. 2007), the current Regional Development Law (Zakon o regionalnom razvoju (Regional Development Law), Official Gazette of the Republic of Serbia 51/2009, 30/2010 and 89/2015) mentions Vojvodina as one of the five regions. With such a historic background and political approach Vojvodina, which is on cross-border area in approximately 40%, cannot have significant plans in the Serbian development politics. The Autonomous Province of Vojvodina adopted an economic development plan (Ricz-Gábrity, 2006), which could have resulted significant regional development if implemented, but due to the lack of state funds, most of the operative programmes remained only plans without implementation.

From the above we can conclude that the EU resources and their absorption as soon as possible and as effectively as possible, can mean a breakout for Vojvodina.

Throughout the examination I had analysed the implemented programmes on the three border areas from various aspects, primarily analyzing infrastructure, economics, tourism, innovation supporting and ecologic projects, incorporating my own empiric practice. Since the basic units of regional development are settlements, according to the Serbian/Vojvodina administration, the municipalities, I examined the implemented projects of municipalities, and in some cases I also examined the implemented projects of the provincial administration, that had influence on regional development.

According to my next hypothesis regarding *the settlements directly on the border, the cross-border cooperation assistance led to a significant development that can be expressed statistically*.

The hypothesis set up is in close relation with my next hypothesis, which assumes the method of regional distribution of assistance resources. According to my assumption, as the primary aim of the EU programmes in focus is to strengthen the cross-border impact and to reduce the backlog of peripheral areas, therefore the territories physically closer to the border could absorb the funds in higher proportion. Resulting from these, the effects are more significant in the given area appearing in infrastructural output indicators as well as social indicators based on this.

Special attention ought to be paid to the border area, regardless of the fact that Vojvodina's whole territory can participate in at least one programme, as the projects having an impact on regional development are primarily infrastructural investments, joint business solutions, environmental and touristic investments, which directly affect regional development.

My next hypothesis is the following: *certain municipalities in Vojvodina have significantly higher fund absorbing ability, than others*.

This assumption is based on several factors. According to my own empiric practice the absorbing ability of the given municipalities/cities primarily depend on their level of development and size, on adequate staff, adequate network of partners and last but not least



on geographic position, as well as strategic thinking. The bigger the city's administration, the higher is its potential to participate in European Union projects, as it has the necessary resources that enable: securing financial means to secure pre-financing and own contribution, staff with adequate expertise, experience and linguistic skills, which it can recruit from a wider professional labor market, and possesses a significant social capital in the neighboring countries. If there is also favorable geographic border location associated, then in my opinion the project starts off with an advance to draw funding.

Beside these, the fact that the local authorities having a well-defined and well thought out development strategy and constantly elaborate projects based on these strategic documents having a significant project absorbing ability - cannot be negligible.

The following hypothesis is linked to the previous one, and it claims that *due to the existing network of contacts, the Hungarian community in Vojvodina from the aspect of drawing funds, was more successful than average.*

According to the census from 2011 (<http://popis2011.stat.rs>) there are 251.136 citizens of Hungarian nationality living on the territory of Vojvodina, and they primarily live in communities close to the border, and along the river Tisza forming a block approximately down to the Danube-Tisza-Danube channel's line (the former Franz channel). The data of the census indicates that the municipalities with absolute Hungarian majority are Bačka Topola, Senta, Kanjiža, Ada, Mali Idoš. Subotica, Čoka and Bečej are settlements with relative Hungarian majority, and beside them Temerin, Sombor, Novi Sad, Kikinda, Novi Kneževac, Zrenjanin and Novi Bečej have a larger Hungarian population. The settlements with absolute Hungarian majority and Subotica are located directly on the border, according to my assumptions, the Hungarian population, and the municipalities with Hungarian majority have an established network of contacts towards the mother country, which already explains that they can draw EU funds in a higher rate. In the aspect of regional development the Hungarian-Hungarian projects are very significant, as the municipalities with Hungarian majority are in a more disadvantageous position from the average in Vojvodina, due to their peripheral position and minority population.

The next hypothesis of my work is based on the existing network of contacts, which claims that *during the implementation of cross-border projects significant and well exploited contacts are developed with cross-border partners.*

The main motif of the research is the examination of cross-border cooperation programmes, where the applicant had to choose a partner from a neighboring country and they submitted a joint project idea. The principle of the projects are the 4 Js, (IPA HUSRB programme document) *joint project development, joint implementation, joint management and joint financing*. These four conditions can be met only if there's a connection between the two or more partners during the whole lifecycle of the project, moreover if there is previous connection between the partners, which ought to be indicated in the project documentation. A successful project as antecedent, in a good case it's a previously implemented joint project, a twin-city partnership, or a cooperation of several years. Beside all this, a successful project's implementation will be a significant growth of chance in a future call for proposals.

The base of future cooperation will be the expertise and experience, which is gained by those implementing the project in the previous cycle of call for proposals. According to my hypothesis, the cross-border cooperation programmes realized so far secured a good learning opportunity and practice to be able to accept other EU systems of financial support.

Within the 2007-2013 financial framework there were two components available from the five IPA components (Ricz, 2013), these were the cross-border cooperation and assistance for transition and institution building.

Within the 2014-2020 financial framework (Szügyi – Takács –Ricz, 2016) there were already more EU resources available and possible to draw for Serbia. Beside starting

accession negotiations as a candidate country, the IPA II programmes complete portfolio will become available to the country's applicants. The applicants will be able to apply to almost all EU subsidy structures, which primarily cover resources from Brussels directly. Here I refer to programmes like *Europe for Citizens*, *Erasmus+ Creative Europe*, *Horizon 2020*, *Cosme*, *Life*, *Easi*, etc. only to mention the most significant ones. To be able to successfully apply for means within these programmes, the Serbian subjects will have to gain beside an international contact network, the experience in project development, preparing project documentation, implementing the projects step by step (public procurements, reports, etc.), the adequate experience can be obtained according to my hypothesis, through implementing cross-border cooperation projects with relatively low risk.

## Methodology

The research of border areas and cross-border cooperation has significant traditions both in the European and Hungarian scientific life, which date back to the period before the transition, there are numerous publications proving the *raison d'être* of research activities. The Serbian regional science and geography have much more modest results in the research of the border territories. The situation is similar with the cross-border cooperation programme's assessment, too. The certifying authorities leading some of these programmes are evaluating the projects from their office, and their materials are public in good cases. The Hungarian researchers constantly work on researches with scientific thoroughness, unfortunately the Serbian colleagues have a lot less results to show. Due to the above, my work's methodological part primarily relies on the Hungarian practice, supplemented with the results from former-Yugoslav countries, complying with the basic rules of scientific research.

The elaboration of my doctoral dissertation was preceded by ten years of research activity, and in its first period between 2003 and 2009 I was examining the efficiency of the means available through EU cross-border cooperation programmes with a Vojvodina dimension. The results of this research I have elaborated in the thesis that completes my doctoral studies, which I have defended in 2010. There is a short summary of the thesis within the dissertation, which is an introduction to the research of resources available from 2010, which was the second part of my research that lasted till the elaboration of my dissertation.

I built up the methodology of my research to enable the examination of cross-border cooperation programmes available to Vojvodina's neighboring territories, and the efficiency of certain projects both on macro and micro level. The research procedure's first step was to examine the programme documents approved by the European Commission, that gave an overall picture on the objectives, which the programme was supposed to reach, then I examined the successful projects of the various programme areas focusing on the projects bearing regional development effects: in infrastructure developments, economic development, tourism, environmental protection.

I used available statistics regarding all three programme areas, the official evaluation of the programmes, possible scientific and other publications. In addition, I made interviews with almost all relevant applicants implementing projects, primarily with the representatives of municipalities, as most projects were implemented by municipalities. Through my own work, I am familiar with over 20 projects internally, which made my work easier in the detection of the results of long term regional development impact. In the case of all three programmes I tried to collect all available information and to collect data about the possible projects. During my work I analysed these data and synthesized them. After setting up the hypotheses I directly sought statistical data and information about the projects that could either confirm or disprove my hypotheses. In this respect, I could draw my conclusions as I collected information from the available Serbian statistical system relevant to Vojvodina and to lower levels of territorial

organisations of municipalities, which I placed in parallel, comparing them with time dimension, and with the results of projects.

The Serbian statistical system is in transition, which made my work more difficult, as the unique Serbian system is getting transitioned based on the Eurostat methodology, therefore in many cases the data series were not available, or deficient, the time series got retrospectively interrupted around the year 2010. I had such problems with the measuring of regional GDP too, as Vojvodina's GDP is being measured since 2009, unfortunately there are no measurements on LAU 1 level concerning GDP data, only on gross added value, but those time series are not complete. To eliminate these problems, I used data series that were available for a longer term and that were reliable. I tried to either confirm or disprove my hypotheses by comparing these data. The data I used for the LAU 1 level were available for the complete time series and that in some way confirm the given municipality's/city's development, e.g. monthly average wage, unemployment, number of employed, the expenditures and revenues of certain municipalities' budgets, the size of investments, etc.

The reason I chose these indicators to confirm my hypotheses is that the Serbian government used these until 2014 to calculate the annually published aggregate official indicators determining the level of development of municipalities. This is how I could secure comparison bases. (*Uredba o utvrđivanju metodologije za izračunavanje stepena razvijenosti regiona i jedinica lokalne samouprave (Regulation on determining a methodology for the measuring of development of regional and local authorities)*, Official Gazette of the Republic of Serbia, 68/2011).

For the hypotheses that demanded descriptive, softer proofing procedures, I have used the results of polling. I obtained this information by making interviews with the representatives of 25 municipalities and from other publications (*Evropa u Vojvodini (Europe in Vojvodina)*, 2015) therefore I could synthesize the opinions of additional municipalities and applicants to the material.

## **The results of the research and the summary of hypotheses**

According to my main hypothesis *the European Union, - inter alia - the cross-border cooperation programme had positive effects on Vojvodina's regional development*. This hypothesis is either confirmed or disproved by the further hypotheses. During my work I analysed the implementation of the EU programmes, their results, their sustainability and I presented the development track of Vojvodina with special emphasis on municipalities with biggest experience in participating in cross-border cooperation projects. After the analysis it was established that the hypothesis set up, based on the data presented in my work, was not confirmed. The EU resources did not have a positive impact on the regional development of Vojvodina, the regional development did not boom, and certain territorial units' level of development did not exceed the level from the period prior to the programme. The examination of the period between 2009 and 2014 indicated that the projects could not counterweigh the external, primarily political and economic effects that determine the regional development's track. Vojvodina was never in the focus of Serbia's regional development, as a peripheral territory it recently lost its leading role in the country against Belgrade. (Not even) the three examined cross-border programmes gave enough impetus to unfold a healthy and measurable regional development. The implemented projects were excellent in solving some peripheral problems, such as border crossing points, bicycle paths crossing borders, construction of flood protection systems, but they did not result in long-term effects. During the planning of the cross-border cooperation programmes, the determined indicators were met, that are confirmed by the analysis summary of certain programmes, but altogether a measurable regional development cannot be indicated. Of course, the projects had

significant effect on certain micro-communities, whether local or municipal, securing an excellent opportunity for a future cooperation.

In many cases the cross-border impact did not prevail, since the programme area where the projects were planned to be implemented, was too wide, and the most important resources were not drawn by the settlements in the cross-border area, but by big and developed cities like Novi Sad. Likewise, the peripheric characteristics of the cross-border territories did not change significantly, even though the essence of the cross-border programmes is to reduce the backlog. The development implemented so far did not reduce the detachment of disadvantaged territories, on the contrary, they increased the differences between territories.

We can also determine that small settlements are in a disadvantaged situation. They not only don't possess the adequate resources to draw funds, the subsidy programmes are not dedicated to support small and peripheric settlements.

In spite of all these, it is clear that EU financing is the future, since during the last couple of years the size of the subsidies injected into the system is several times larger than the national resources, but to secure the territorially equal division of resources, the territorial and sectoral proportionality should be focused on more in the following programming period.

*Additional hypotheses:*

*In the settlements directly on the border, the cross-border cooperation assistance led to a significant development that can be expressed statistically.*

Within the analysis of beneficiaries and the geographic analysis of the implementation relevant territories it was presented that big cities such as Novi Sad and Subotica, and other big and middle-sized settlements drew the highest proportion of funds, and these are the territories where the projects were implemented. As the examined programmes' fundamental objective was to strengthen the cross-border impact and to reduce the backlog of peripheral areas, I assume that the settlements physically being closer to the border could draw funding resources in higher rate. Resulting from this, their impact was more significant for the given territory, which appeared in the infrastructural output indicators and the social indicators based on them. Several border municipalities participated in the implementation of projects, like Kanjiža, Novi Kneževac, Subotica, Sombor, Kikinda, Vršac, and they absorbed resources in significant measures. *If we compare the development indicators with the situation before the project, we can conclude that no great progress has been made.* The development track of bigger settlements seems to break in 2012, while smaller ones show a slight progress, I think here primarily of Kanjiža and Novi Kneževac. I have to disprove the part of the hypothesis indicating significant development evoked by the cross-border cooperation programmes' resources, but it can be declared that the EU funds secures development alternatives for smaller settlements, which were utilized by the listed municipalities. We can prove it by measurable data, which serves as a good foundation for their further development track.

*Certain municipalities in Vojvodina have significantly higher fund absorbing ability, than others.*

This hypothesis can be completely confirmed by taking into account the previously presented facts. If we examine the proportions of projects drawn by municipalities, we can immediately see that there are 11 municipalities that implemented 4 or more projects, which is a good result if we consider the project activities of all municipalities. Out of the 45 municipalities 31 was able to implement a project, 14 municipalities were unable to apply at all, or they could not submit a successful project. *This result indicates that only those municipalities can successfully apply and through that increase their level of development that have the adequate background for thinking in the project system and for implementing projects.* Here I think of institution building (development agency or municipal project office), adequate strategic planning background, project managers with linguistic skills and expertise, all associated with financial background to secure their own contribution and pre-

financing. When analyzing the territorial distribution of project results, we can see that most the municipalities on the Hungarian and Romanian border were successful in applying for funds, as well as the big cities, but the more developed municipalities had positional advantage. In this process, which is a self-stimulating process, the territorial differences continue to grow for the benefit of the big cities (Subotica, Sombor, Vršac, Novi Sad).

*Due to the existing network of contacts, the Hungarian community in Vojvodina from the aspect of drawing funds was more successful than average.*

A decade ago the EU resources generated great hopes for the Vojvodina Hungarian community. Within the PHARE and CARDS programmes the Hungarian character candidates (whether municipalities with Hungarian majority or their institutions, or Hungarian civil society organizations) reached significant results, they drew funds above their ratio. Unfortunately, this tendency turned around with the IPA funds and during the programme period it constantly went worse. I have to note right away, that except for the case of 3 projects, Hungarian-Hungarian type of cooperation was only present in the Hungarian – Serbian programme, which is a great omission for the Hungarian community. There were significant resources available in the Romanian programme, which were not utilized due to this aspect, while in the Croatian programme we cannot even find projects of Hungarian character.

Concerning the Hungarian-Serbian IPA Cross-border Cooperation Programme, the Hungarian community reached much smaller results than its ratio. When analyzing the number of projects, the situation is better, but if we analyse the size of subsidies of certain projects then much worse results are indicated beside constant reduction. *The hypothesis that due to its existing network of contacts the Hungarian community in Vojvodina from the aspect of drawing funds was more successful than average can be clearly denied, as the Hungarian type of projects didn't even reach the average.* Nevertheless, the Hungarian community is an excellent connecting axis in harmonizing the development programmes of the two countries, and based on this coordinated applications that utilize the potentials of resources and strategies could reach significant results.

*During the implementation of cross-border projects significant and well exploited contacts are developed with cross-border partners*

The execution of projects is only possible through joint cooperation. Only the projects that proved joint planning, management, implementation and financing were approved among the applications. The project execution was elaborated in a way that certain partners could not implement the activities they engaged themselves to without the other partner. This resulted in networking that formed in several ways. In several cases we found examples of projects that were built on each other. These examples prove that during the financial framework and its calls for proposals, the contacts constantly developed, they generated more and more projects. Of course, there were examples of bad partnerships, but altogether the hypothesis can be confirmed, during implementation significant and well exploited contacts are developed between the partners on the two sides of the border.

There are seven closed calls for proposals within the IPA Cross-border Cooperation Programme, and several conclusions can be made as well as some recommendations for the new cycles of calls. If the municipalities in Vojvodina prepare themselves adequately they will have a bigger chance when applying for EU development funds. One of the conditions is linguistic skills, which was an obstacle for many applicants. This does not only mean the knowledge of English and EU terminology, but the key question is how can the partners communicate with each other. Namely, this was not an issue in the Hungary-Serbia IPA Cross-border Cooperation Programme for the Hungarian majority municipalities in Vojvodina. However, it is important that the staff working in the field of project management

and various expert teams has to be familiar with languages of other countries and to have adequate personal contact network.

*The cross-border cooperation programmes implemented so far secured a good learning opportunity and practice to be able to accept other EU systems of financial support.*

This hypothesis can be confirmed. The cross-border programme before the IPA sources already had great results in this respect, to secure adequate foundation for the absorption of EU resources – whether cross-border or other. These development funds are a good opportunity to utilize certain local competencies and opportunities, but in the best cases only local communities will see their benefits. In the past 13 years, it was confirmed that there are viable communities and organisations living in the options, and their development is greatly contributed to by external – in this case – EU funds. The over application during open calls for proposals proves that there are initiatives from the bottom, that are well elaborated projects and with adequate infrastructure they can utilize the resources. This path could be exemplary for the communities and other organisations of the region, since if they see development directions, implemented programmes, they will also establish their development teams, which will reach progress in the future.

Altogether, I can conclude that most of my research hypotheses got disproved. This proves that the expectations towards the procedures prior to the EU accession and the pre-accession instruments were too high. It is clear for both researchers and those laics who have a little over average connection to the topic that in the past decade the development resources induced significant regional development in the province. This assumption was disproved by my work, but it confirmed that the EU accession does have development perspectives for the adequately prepared communities, the pre-accession funds ahead us have great potential for them.

### **The summary of the new, scientific results of the dissertation**

Based on the analysed indicators it can be concluded that the level of development of the Vojvodina municipalities absorbing EU cross-border resources in the biggest measures did not change significantly in the given period, there is only a minimal growth if we take into account all indicators and also if we filter out all distorting factors. If we compare it to Serbia's GDP, which is truly hectic, but shows constant growth, we can say that some municipalities' growth does not reach that level, regardless which indicator we take into account.

Some municipalities not only do not enter the next level of higher development, on the contrary, they either stagnate, or relapse can be seen in five cases. The budgets' revenues and expenditures constantly grew till 2012, which could indicate a growth in development, but this momentum breaks in 2012. The government's restrictive and centralized politics certainly play a role in this break, as it reduced the budget and the authority of municipalities, but the peripheric character of municipalities definitely have a role in it, too, the smaller number of investors, which lead to decline in jobs that is detectable, and through these one of the biggest revenue of municipalities, the payment of income taxes is measurably reduced. Investments also develop hectically, some growth can be detected maybe in 2014, that might lead to economic convergence in the future.

As long as the intensity of European Union resources doesn't appear in adequate measures in the development of the area, the domestic and global economic processes suppress their impact. The financial allocation for infrastructural projects and projects that could have significant effect on regional development is very minimal, while the soft projects' activities that are implemented in big numbers don't have any kind of long term effect at all, neither on the given community nor on regional development.

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