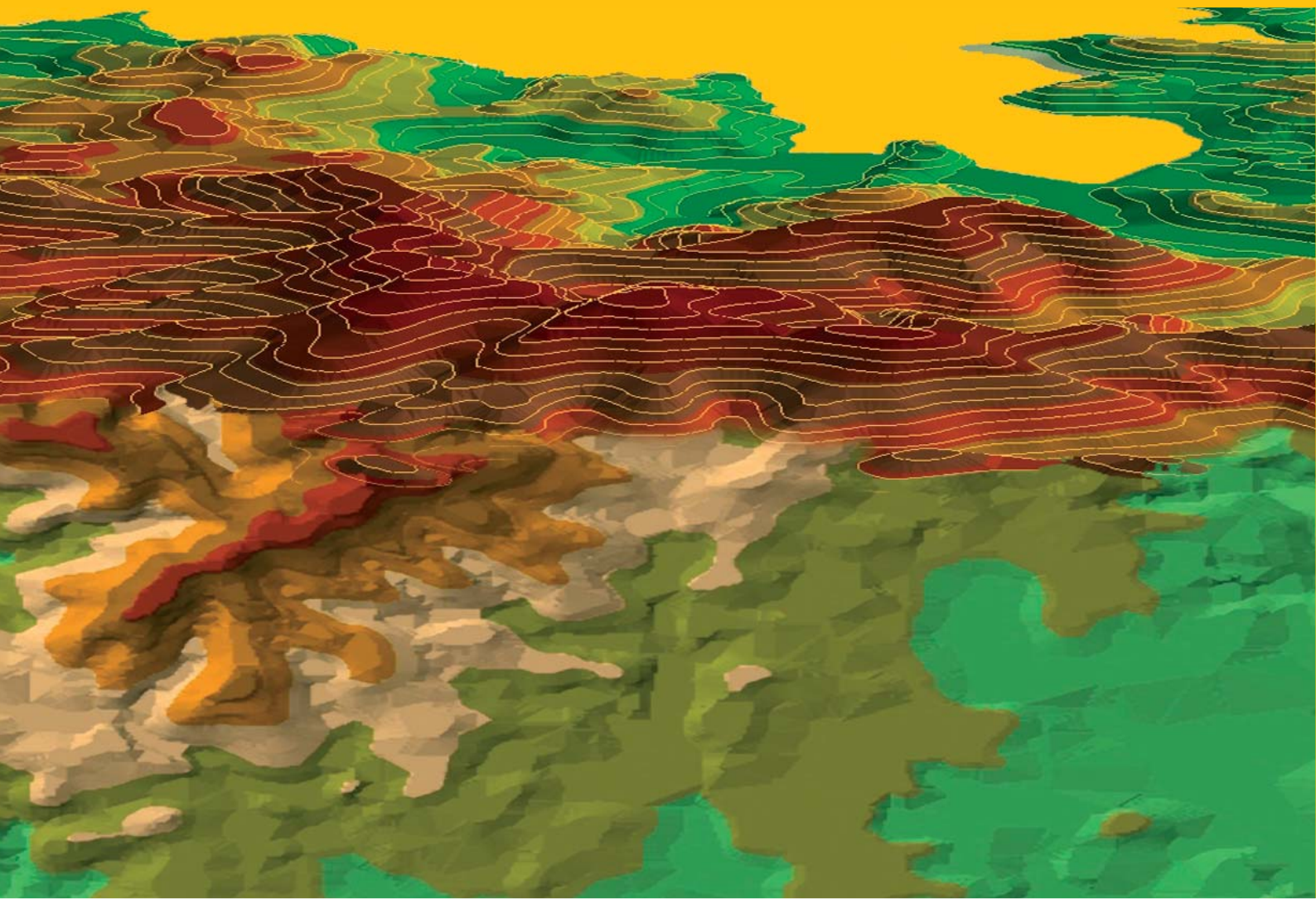


Vol. 26/2018

No. 4

# MORAVIAN GEOGRAPHICAL REPORTS





# MORAVIAN GEOGRAPHICAL REPORTS

## EDITORIAL BOARD

*Editor-in Chief:*

**Bryn GREER-WOOTTEN** (York University, Toronto)

*Executive Editor:*

**Bohumil FRANTÁL** (Institute of Geonics, Brno)

*Technical Editor:*

**Tomáš KREJČÍ** (Institute of Geonics, Brno)

*Marketing Editor:*

**Stanislav MARTINÁT** (Institute of Geonics, Ostrava)

## INTERNATIONAL ADVISORY BOARD

**Pavel CHROMÝ** (Charles University, Prague)

**Marina FROLOVA** (University of Granada)

**Marián HALÁS** (Palacký University, Olomouc)

**Jan HRADECKÝ** (University of Ostrava)

**Karel KIRCHNER** (Institute of Geonics, Brno)

**Sebastian LENTZ** (Leibniz Institute for Reg. Geography, Leipzig)

**Damian MAYE** (University of Gloucestershire, Cheltenham)

**Ondřej MULÍČEK** (Masaryk University, Brno)

**Josef NAVRÁTIL** (University of South Bohemia, České Budějovice)

**Philip OGDEN** (Queen Mary University, London)

**Ján OŤAHEL** (Institute of Geography, Bratislava)

**Martin J. PASQUALETTI** (Arizona State University, Tempe)

**Michael ROTH** (Nürtingen-Geislingen University)

**Michael SOFER** (University Bar Ilan, Ramat-Gan)

**Milan TRIZNA** (Comenius University, Bratislava)

**Steven TUFTS** (York University, Toronto)

**Antonín VAISHAR** (Institute of Geonics, Brno)

**Dan VAN DER HORST** (University of Edinburgh)

**Miroslav VYSOUDIL** (Palacký University, Olomouc)

**Maarten WOLSINK** (University of Amsterdam)

**Jana ZAPLETALOVÁ** (Institute of Geonics, Brno)

## PUBLISHER

*Institute of Geonics, The Czech Academy of Sciences, v. v. i.*

*Identification number: 68145535*

## MAILING ADDRESS

*MGR, Institute of Geonics of the CAS, v. v. i.*

*Department of Environmental Geography*

*Drobného 28, 602 00 Brno, Czech Republic*

*(e-mail) mgr@geonika.cz*

*(home page) http://www.geonika.cz*

**Brno, December 31, 2018**

## PRINT

*NOVPRESS s.r.o., nám. Republiky 15, 614 00 Brno*

*© INSTITUTE OF GEONICS OF THE CAS 2018*

**ISSN 1210-8812 (Print)**

**ISSN 2199-6202 (Online)**

## Scientific papers:

*Zuzanna BRUNARSKA*

***Economic disengagement in state-society relations in Russia: A regional perspective ..... 230***

*Eva JANSKÁ, Josef BERNARD*

***Mobility and the assimilation of immigrants: Variations in migration patterns of Ukrainians and Vietnamese in the Czech Republic ..... 244***

*Ondřej VALENTA, Dušan DRBOHLAV*

***Longitudinal and spatial perspectives on the mismatch of tertiary educated migrant workers in the Czech labour market: The case of Ukrainians ..... 255***

*Miloslav ŠERÝ*

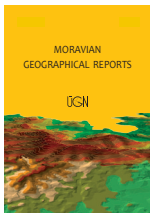
***Spatial patterns of the variability of native residents in a transitional society: The case of the Czech Republic ..... 273***

*Dina STOBER, Ivana BRKANIĆ, Lucija LONČAR*

***The preferences of residents and tourists for cultural and architectural heritage in a rural landscape: The case of Zlatna Greda, Croatia ..... 285***

*Bence SOMOGYI, János CSAPÓ*

***The role of landscape preferences in the travel decisions of railway passengers: Evidence from Hungary ..... 298***



# Economic disengagement in state-society relations in Russia: A regional perspective

Zuzanna BRUNARSKA<sup>a b \*</sup>

## Abstract

*This paper makes the first attempt to measure economic disengagement in state-society relations on a regional level, using the case of Russia. An original composite index was calculated based on a number of indicators measuring different spheres of contact between the state and society. The study examines regional diversity in intensity of economic disengagement in state-society relations in Russia. It also attempts to identify determinants of economic disengagement on a regional level. Seeking to identify regional level predictors of the intensity of disengagement, the study focuses on the specificity of the Russian space – its federal structure based on a combination of territorial and ethnic principles. The results show that economic disengagement is least intense in regions belonging to the Russian Far North, which points to the role of physical-geographical factors and path dependence. They also reveal that residents of ethnically-defined regions tend to be less economically disengaged than residents of oblasts and krais. Moreover, the share of ethnic Russians is positively related to economic disengagement in the former regions, while it is not significant in the latter. These findings potentially point to differences between ethnic Russians and members of titular groups in terms of their intensity of interaction with the state in the economic sphere.*

**Key words:** economic disengagement, state-society relations, regional diversity, Russia

**Article history:** Received 19 June 2018, Accepted 8 November 2018, Published 31 December 2018

## 1. Introduction

Under state socialism, dependence on the state and its resources was an inherent part of the system (Shlapentokh, 1989). The dissolution of the USSR resulted in the emergence and development of practices which were banned or rationed under Soviet rule, such as emigration, employment in the private sector or the use of private providers of various services, e.g. in the field of education or health care. In the new era, private ownership has become sanctioned, many of the previously state-owned enterprises passed into private hands, and many others came into existence (Clarke and Kabalina, 1999). The state withdrew from some of the previously fully state-occupied spheres (Wegren, 2000), delegating some of its responsibilities to private actors. The state's withdrawal and granting permission for the development of private initiatives led to people seeking non-public alternatives to meet some of their demands (Clarke, 2002). The state was no longer the sole provider of housing, jobs, and educational and health services. Given the previous state monopoly over those spheres, it seems justified to discuss the prevalence of private alternatives in terms of disengagement in state-society relations.

The concept of 'disengagement in state-society relations' concerns the intensity of interaction between society and the state and its institutions, where little or no interaction, or decreasing interaction, stands for disengagement (cf. Brunarska, 2015; 2016). Thus, the term disengagement as conceptualised for the study has a double meaning. It may denote a state (in this case we may specify an individual as disengaged or try to assess her or his degree of disengagement or the level of disengagement of a population of a given territorial unit), as well as a process (in which case we may state whether this level is growing or decreasing). This paper concentrates on the former – it looks at the current *status quo*, disregarding the fact as to whether in the longer-term perspective the process is intensifying or, on the contrary, is in decline. Disengagement may be seen as tantamount to substituting the public sphere with a private alternative. It may be determined by the deliberate actions of individuals or by the state's withdrawal from some of its responsibilities. By concentrating on citizens' sources of income and their utilisation of services, this study addresses the economic dimension of disengagement. It is assumed that disengagement in the economic dimension is reflected

<sup>a</sup> Centre of Migration Research, University of Warsaw, Poland

<sup>b</sup> The Robert B. Zajonc Institute for Social Studies, University of Warsaw, Poland (\*corresponding author: Z. Brunarska, e-mail: [zuzanna.brunarska@uw.edu.pl](mailto:zuzanna.brunarska@uw.edu.pl))



by the extent to which citizens take on the financing of some services, e.g. in the fields of education or health care, and/or earn their livelihood outside of state channels<sup>1</sup>.

Russia is an interesting case in this respect since, for many years, its population was virtually deprived of the choice between public and private spheres. This study does not entail a claim, however, that economic disengagement in Russia is more acute than in other countries (especially given the long-term neoliberal trend in the Western world). Rather, the work focuses on spatial disparities at the sub-national level. Although market reforms were implemented across the country, individual regions offered different conditions for the development of private initiatives due to geographic, economic and institutional differences (Drobizheva, 2002). Taking into account the geographically uneven patterns pertaining both to the regions' physical-geographical conditions and to their level of socio-economic development (Zubarevich, 2012), it is not surprising that specific regions followed different trajectories regarding the disengagement practices of their residents<sup>2</sup>.

This study adopts a macro-level perspective on measuring disengagement in state-society relations. It concentrates on the spatial diversity of intensity of economic disengagement in Russia, based on secondary data available from various sources, mostly official publications of the Russian Federal State Statistics Service (Rosstat). The aim of the paper is two-fold: firstly, it attempts to determine in which Russian regions the economic ties between the state and society are relatively looser and those in which they are tighter, and what are the resulting spatial patterns in the intensity of economic disengagement; and secondly, it intends to identify the role of the federal status and ethnic structure of regions in predicting the intensity of economic disengagement. The motivation for examining the association between disengagement and ethnicity, the federal status of a region and the combination thereof, was the multi-ethnic character of Russian society and the federative nature of the country based on the combination of territorial and ethnic principles, which reflects the structural arrangements of political power across the Russian territory.

This study contributes to existing research in that it is the first attempt to measure economic disengagement in state-society relations on a regional level. It makes a methodological contribution in that it proposes an original composite index, which enables comparison of territorial units in terms of the intensity of economic disengagement. Moreover, it attempts to advance the literature on regional disparities within Russia, viewing them through the lens of state-society relations. Despite the vast literature on regional disparities in Russia (e.g. Abramova, 2012; Gimpelson et al., 2000; Pallot and Nefedova, 2003; Oreshkin and Oreshkina, 2006), to the best of my knowledge there has not been any comprehensive study devoted to regional differences in the intensity of state-society interaction.

The article is structured as follows. The following Section 2 briefly describes the theoretical framework of the study and introduces the research hypotheses. The

subsequent Section 3 discusses the data and methods used, including the construction of a composite index. This is followed by presentation of the results (Section 4), divided into two separate sub-sections devoted to regional diversity (Section 4.1) and the factors influencing the intensity of economic disengagement on a regional level (Section 4.2). The final section (Section 5) summarises the findings, discusses limitations of the study and proposes questions for future research.

## 2. Theoretical framework and research hypotheses

Terminologically, this study refers to the concept of 'disengagement from the state', defined broadly as withdrawal from the state's channels into parallel social, political, economic and cultural systems (Azarya and Chazan, 1987; Baker, 1997; Rothchild and Chazan, 1988). Developed in the 1980s with respect to state-society relations in Africa, the concept has been adopted numerous times since then, mainly in the context of Third World Studies. Originally, it derives from Hirschman's (1970) exit-voice theory and assumes that people disengage from the state in response to its dysfunction (Azarya and Chazan, 1987) or domination (Baker, 1997). 'Disengagement' is also close to Lehman-Wilzig's definition of 'alternative politics'.

Referring to Hirschman, Lehman-Wilzig (1991; 1992) introduces the notion of 'quasi-exit', under which he understands the establishment of alternative social systems which exist alongside the official system. He denotes it as 'alternative politics', i.e. "bypassing the traditional system of governmental services and establishing alternative social and economic networks to offer what the official political system cannot, or will not, provide" (1991, p. 99). He gives examples of such alternative systems in various spheres: settlement, media, education, health, religion and economics. His quasi-exit involves not a real exit in a physical sense (not a final exit, as he says) but rather alternative forms of behaviour which are evidence of distance from and disloyalty towards the official system. Vladimir Shlapentokh (1989) uses yet another term: 'privatisation', which, as he argues, should be more properly named 'destatisation' (yet he uses the former term). His privatisation concept, which is built upon a public-private paradigm, does not directly refer to Hirschman, but in fact adopts the same assumptions – that the loss of belief in the state's fairness leads to a growing alienation from the state and the privatisation of society.

The approaches mentioned above have several limitations, in particular in empirical studies when utilising quantitative methods and especially those based on secondary aggregate data. Their main shortcoming refers to the fact that they point to society as the initiator of disengagement, while the prevalence of a particular practice may be shaped both by citizens and by the state. This study adopts a broader meaning of the notion of disengagement than what was originally formulated by Azarya and Chazan, by leaving aside the assumption that the examined practices are a reaction to

<sup>1</sup> The latter includes not only employment in the private or informal sector, but also, for example, resorting to private channels of job hunting.

<sup>2</sup> For instance, according to official data, in 2013 over 60% of the workforce in Russia worked in the private sector. This share ranged from 19% in Chukotka Autonomous Okrug (AO) to 70% in Penza Oblast. Following the privatisation of living spaces, about 87% of housing stock in Russia belonged to citizens as of 2012. This proportion was once again lowest in Chukotka AO (32%), and highest in Ingushetia (99%). Households on average spent 3.5% and 0.9% of their income on health and education, respectively: ranging from 0.3% in Ingushetia to almost 8% in North Ossetia-Alania for health expenditures, and from 0% in Ingushetia to 2.4% in Kursk Oblast, for expenditures on education.

the malfunction or domination of the state. Especially when measured on a macro level, disengagement resembles yet another concept which reflects the strength of state-society interactions, namely ‘economic autonomy from the state’, which Kelly McMann (2006) defines as the ‘ability to earn a living independent of the state’.

With respect to the way of treating the phenomenon, the approach taken here resembles that proposed by Kaminski (1991), namely the notion of the ‘syndrome of withdrawal’, described as minimisation of mutual involvement of the state and society. Based on the example of the collapse of state socialism in Poland, Kaminski describes withdrawal as a result of the process of society moving towards a dual organisation. Among available forms of withdrawal, he names: escape to the family life and alternative society, to the private sector, abroad, but also falling into alcoholism, expansion of a parallel economy, escape from domestic currency and decreased official political activity. Importantly, he differentiates between withdrawal ‘of’ the state and ‘from’ the state, and notices that the latter largely depends on the extent to which the state itself has withdrawn and what cost it has imposed on withdrawal. Similarly, I assume that disengagement is a bi-directional process and hence the replacement of the phrase ‘disengagement from the state’ with the expression ‘disengagement in state-society relations’.

Summing up, we deal with disengagement in state-society relations when a person decides in favour of a non-public alternative, regardless of whether it is his/her choice or a consequence of a decision taken by the state. Using Williams et al.’s (2011) distinction, it may be a product of an ‘involuntary exclusion’ or a ‘voluntary exit’ (or a mixture of both). Such an approach acknowledges that, for example, the growing rate of private sector employment distances people from the state even if it is not their aim to disengage from the state, as some of them would in fact prefer to work in the public sector. From the point of view of the country’s development, disengagement includes both positive factors such as private entrepreneurship, and negative phenomena, for example, informal employment. Hence, it does not carry any normative subtext. In other words, I do not attempt to judge whether economic disengagement is desirable or undesirable. The utilisation of both terms used with respect to state-society relations – ‘disengagement’ and ‘withdrawal’ – may give the erroneous impression that there existed a certain initial state and we deal with an advancing process going in a certain direction, i.e. that we expect to observe deepening of disengagement (either initiated by the state or by society). This is not an assumption of the concept of disengagement that is utilised in this work. As regards the temporal dimension of disengagement, I do not rule out the possibility that, in today’s Russia, the process in some spheres may be going in the opposite direction, i.e. that the state and society are becoming more engaged with one another. Nevertheless, the question of whether one may observe the process of disengagement or engagement in state-society relations in Russia at the present goes beyond the scope of this cross-sectional study.

The presence of institutional voids, the weakness of formal institutions or apparent state withdrawal are commonly accompanied by the development of informal institutions and practices. Such practices, labelled by Greskovits (1998) as ‘going informal’ strategies, include, *inter alia*, tax evasion, illegal employment, illegal street trading, organised crime and the drug economy. Informal institutions which

had developed in the Soviet Union and later in Russia may be also seen as an offset to repressive actions of the state (Gel’man, 2004). Their omnipresence in all spheres of social life in Russia was referred to as the ‘shadowing’ (*tenevizatsiya*) of the Russian society (see Ryvkina, 2000; Kliamkin and Timofeev, 2001; Kosals and Maksimova, 2015; Ledeneva, 2006). It has to be borne in mind, however, that some informal practices had been used prior to the collapse of the USSR. Even under conditions of total state dominance, there existed certain disengagement strategies used by people to cope with the state’s poor performance, unrealistic laws and plans (Grødeland, 2008). These included, for example, private plots, moonlighting, free-lance construction teams (*shabashka*), pilfering, under-the-counter commerce, etc. (see Shlapentokh, 1989). These informal practices gained intensity in the final years of the USSR’s existence and some researchers even claim perestroika would have succeeded if it had made the disengaged society return to the public sphere (Prozorov, 2008).

Despite the existence of informal practices under communism, the system, which provided free education, health care, housing, jobs with relatively equal salaries across the population, pensions and social and family allowances, developed certain habits of state care among the general population. People were not used to making decisions for themselves, which Zinoviev (1982) names as one of the key features of *homo sovieticus*. This has hampered adaptation to the new reality. Over the course of generations, state care came to be taken for granted, as the state’s obligation to people (Donahoe, 2011). This includes preferential treatment given to residents of certain regions – e.g. inhabitants of the Far East and the Far North regions or minority ethnic groups in their ethnic republics – which came to be seen in terms of entitlements.

As regards the former subgroup (regions), this observation entails the following hypothesis: that inhabitants of these geographically less accessible areas are expected to show greater dependence on the state, i.e. should demonstrate lower levels of economic disengagement (Hypothesis 1). As far as the latter subgroup is concerned, during the Soviet era members of titular ethnic groups, i.e. groups after which federal subjects within Russia are named, enjoyed special rights in their own regions. Such special treatment primarily concerned the cultural and political spheres (Kaiser, 2000), which, nevertheless, also had an impact on titular groups’ level of economic engagement with the state. For example, the state assigned quotas for them with regard to access to higher education and provided jobs in cultural and educational institutions (Codagnone and Filippov, 2000; Giuliano, 2011).

At the same time, however, republics were characterised by ethnic division of labour in which indigenous nationalities were employed in low-paid positions, while Russians occupied more prestigious posts. The introduction of a certain extent of regional sovereignty in the early 1990s provided opportunities to reverse this asymmetric relation (Bahry, 2002; Lankina, 2002). It is disputed whether regional governors in charge of redistributive policies – as regards, for example, the level of social benefits, salaries of civil servants in sectors financed from local budgets, and subsidies to state-owned companies and households (Freinkman and Plekhanov, 2010) – favour a particular ethnic group when providing access to public resources. Although Putin’s centralising reforms and introduction of a power vertical equalised the legal rights of federal subjects

(Mikhailov, 2015), one may assume that social norms and practices are not subject to such rapid changes and that almost a decade of weakened federal intervention must have had an impact on local socio-economic systems. Moreover, power in ethnically-defined regions is often still held by representatives of titular nations, who may be tempted to redistribute resources in favour of their own group. Drawing on these arguments, I hypothesise that the intensity of economic disengagement should be lower in ethnically-defined regions (Hypothesis 2a), especially in those with higher shares of titular nationalities (Hypothesis 2b).

### 3. Data and methods

Economic disengagement in state-society relations was characterised by a number of variables related to the population's sources of livelihood and the utilisation of services offered by the state. Taking into account the

theoretical approach described above and the availability of statistical data, I chose several variables describing the intensity of disengagement on a regional (federal subjects') level in Russia. The practices that were included involve various spheres of contact between the state and society, *inter alia*, the labour market, education and health care. Table 1 presents a brief description of the indicators selected for the analysis, as well as their respective data sources. All of the selected indicators are relative measures, which enables comparison of regions of differing population size. Most of the data are referenced to 2012, while some were derived from the 2010 population census.

Hence, economic disengagement was measured by the respective rates of: private sector employment; informal sector employment; subsistence farming; emigration; work abroad; private housing; social assistance (reversed); unemployment service (reversed); as well as the share of

Indicator, year	Data source	Details
Private sector employment (2012)	Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli 2013 (2013)	employed in the private sector per 1,000 employed, based on average annual number of people employed in the private sector of the economy, based on several sources, e.g. Labour Force Survey (LFS)
Informal sector employment (2012)	Ekonomicheskaya aktivnost' naseleniya Rossii 2013 (2013)	employed in the informal sector per 1,000 employed, based on the number of people employed in one of the units of the informal sector (i.e. units not possessing state registration as a legal entity), regardless of the fact whether it is their main place of work; includes: individual entrepreneurs (i.e. natural persons who are registered as entrepreneurs but without forming a legal entity), people employed by individual entrepreneurs and natural persons, unpaid family workers in a family business, self-employed without a formal registration, engaged in household production of food for sale or exchange; based on LFS
Subsistence farming (2012)	Ekonomicheskaya aktivnost' naseleniya Rossii 2013 (2013)	engaged in household production from agriculture, forestry, hunting and fishing for own consumption per 1,000 population, based on LFS
Expenditure on education (2012)	Dokhody, raskhody i potreblenie domashnikh khozyaystv v 2012 godu (2013)	percentage of average monthly final consumption expenditure per household member spent on education, based on Household Budget Survey
Expenditure on health (2012)	Dokhody, raskhody i potreblenie domashnikh khozyaystv v 2012 godu (2013)	percentage of average monthly final consumption expenditure per household member spent on health care, based on Household Budget Survey
Emigration (2012)	Chislennost' i migratsiya naseleniya Rossiyskoy Federatsii v 2012 godu (2013)	number of departures abroad by Russian citizens (emigrants) per 1,000 population, number of departures based on registration coupons recorded by the Federal Migration Service by deregistration from place of permanent residence or by the end of the period of stay (by registration for place of stay for at least 9 months)
Employment abroad (2010)	All-Russian Population Census (2010)	employed population who indicated their place of work abroad per 1,000 employed, population in households aged 15–72 who indicated that they had a job in the week preceding the beginning of the census, i.e. 7–13 <sup>th</sup> October 2010, and that they worked abroad
Private housing (2012)	Zhilishchnoe khozyaystvo i bytovoe obsluzhivanie naseleniya v Rossii 2013 (2013)	private (owned by citizens and legal entities) ownership of housing stock as percentage of all housing stock
Social assistance* (2010)	All-Russian Population Census (2010)	non-beneficiaries of social assistance (of different kinds) per 1,000 population, beneficiaries of social assistance include people who indicated state benefits and/or other kind of state support among their sources of income (not including scholarships, pensions, disability allowances and unemployment benefits)
Unemployment service* (2012)	Obsledovanie naseleniya po problemam zanyatosti (2013)	share of unemployed not resorting to state unemployment service when looking for a job, based on answers given in LFS

Tab. 1: Variables measuring different domains of economic disengagement at a regional level (\*Reversed indicator)  
Source: author's compilation



expenditures on health and education, respectively. This set of indicators covers the basic domains of contact between the state and society that are of an economic nature.

While the presence of most of the indicators in the list seems straightforward, given the theoretical framework and the adopted definition of disengagement, the inclusion of some of them requires an additional comment. The average share of expenditure on education and health care are proxies for the prevalence of abandonment of state services in favour of private providers, as well as formal and informal payments in public institutions, and as such are measures of disengagement in state-society relations. Data on informal employment are allegedly gathered by Rosstat, but official publications only present data on informal sector employment (a benchmark of which is whether the place of employment is officially registered as a legal entity). As regards informal sector employment, I find it important to include it in the disengagement index, alongside the measure of private sector employment, given the specificity of the Russian labour market (namely the blurred boundary between the private and public). Subsistence farming, including dachas, was named among important survival strategies of the 1990s in Russia (Ries, 2009; Tho Seeth et al., 1998) and it is perceived as a manifestation of disengagement in the literature (see for example, Azarya and Chazan, 1987; Baker, 1997). Although its economic significance decreased substantially from the beginning of the 2000s, it is still encountered, especially in peripheral rural areas, and since it denotes partial independence from the state, it may be considered an example of a disengagement practice.

For the sake of comparing Russian regions in terms of the intensity of economic disengagement, I construct a composite index (CI) out of the indicators listed in Table 1. Composite indices are often used to measure multidimensional or elusive concepts that cannot be captured by a single indicator. The most popular aggregation method is linear aggregation, which implies that the variables are considered perfect substitutes, i.e. low value in one domain may be compensated by a large value in the other. The compensatory nature of the linear aggregation rule has been the subject of criticism (see e.g. Paruolo et al., 2013). A crucial question that appears in that context is whether we can accept the fact that a high score in one domain may cancel out a low score in the other (Noble et al., 2006). Although the compensatory logic may indeed be perceived as problematic in the case of measurement of such phenomena as, for example, well-being or deprivation (especially measured on an individual level), it does not seem to be a problem when considering disengagement practices on a regional level. To construct the CI, I run the following methodological scenario: z-score standardisation, linear

aggregation and weights determined by principal component analysis (PCA). PCA ensures that each variable is assigned a weight proportional to its contribution to the total variance contained in the data. I additionally impose the customary condition that all weights sum up to one.

To identify significant predictors of a region's intensity of economic disengagement, in particular to determine its relationship with the regions' ethnic structure and federal status, I carried out a multiple linear regression with the composite index as a response (dependent) variable and regional federal status and ethnic structure as the main explanatory (independent) variables of interest. Federal status is expressed by a set of dummy variables: republic, kray and autonomous okrug (oblast is a reference level)<sup>3</sup>. A region's ethnic structure, in turn, is expressed by the share of ethnic Russians<sup>4</sup>. Additionally, I include an interaction term between ethnic composition and federal status, assuming that the relation between the share of ethnic Russians and intensity of economic disengagement may be moderated by the region's federal status. The remaining independent variables include the following: gross regional product per capita as a measure of regional wealth; average monthly nominal wages as a measure of population wealth; average annual unemployment rate (based on LFS); and a measure of educational structure (expressed by people possessing higher education per 1,000 population aged 15 and over)<sup>5</sup>. The analysis was performed in GeoDa (Anselin et al., 2006), which allows corrections for spatial autocorrelation. The appropriate shapefile was prepared in ArcGIS based on a basic shapefile for Russia (namely the RUS\_adm1 layer which contains information on level-1 administrative units, i.e. federal subjects) downloaded from the GADM Database of Global Administrative Areas<sup>6</sup>.

## 4. Results

### 4.1 Spatial diversity of the intensity of economic disengagement

Table 2 presents the descriptive statistics for variables measuring disengagement selected for the analysis. It shows that there are considerable regional differences within Russia as regards specific indicators, which allows us to expect the overall intensity of economic disengagement to also be unevenly spread across the country. A correlation analysis confirmed that some of the variables are correlated, which is a necessary condition for the use of PCA (see Tab. 3).

As Decancq and Lugo (2013) write, weights for a composite index may be derived either from the first principal component or taking into account all the principal

<sup>3</sup> Taking into account the fact that there are only 2 federal cities and only one autonomous oblast, I incorporate them into the more numerous categories. I merged federal cities with oblasts and categorised the Jewish Autonomous Oblast (AOB) as a kray. The latter move is justified by the fact that Jews constitute less than 1% of autonomous oblast's population (which is an argument against classifying it as a republic), and, furthermore, there were plans to incorporate it into the Khabarovsk Kray or combine it with Amur Oblast to form Amur Kray.

<sup>4</sup> Percentage of those who declared Russian national identity among those who declared their national identity in 2010 (All-Russian Population Census, 2010).

<sup>5</sup> Percentage of those who declared their level of education, based on 2010 population census. All statistics concerning the control variables, if not stated otherwise, come from the Rosstat publication *Regiony Rossii. Sotsial'no-ekonomicheskie pokazateli 2013* (2013).

<sup>6</sup> The modified shapefile created in ArcGIS allowed the creation of weights which served as a measure of contiguity. They were computed based on simple first-order contiguity (Queen's contiguity) between federal subjects. In the case of territorial units not possessing any common borders with the rest of the analysed area (Sakhalin and Kaliningrad oblasts), they were assigned manually to one of the nearest units comprising a coherent area (Khabarovsk Kray and Leningrad Oblast, respectively) following a strategy 'to choose the 'nearest' and most plausible neighbours for the islands' (Ward and Gleditsch, 2008, p. 20).



Variable	Mean	Std. Dev.	Min	Max
Private sector employment (per 1,000)	58.5	7.6	21.5	69.3
Informal sector employment (per 1,000)	21.9	9.0	2.2	51.0
Subsistence farming (per 1,000)	117.4	50.3	0.9	254.3
Expenditure on education (%)	1.0	0.4	0.0	2.1
Expenditure on health (%)	3.1	0.8	0.5	5.1
Emigration (per 1,000)	0.3	0.3	0.0	1.3
Employment abroad (per 1,000)	0.5	0.6	0.1	4.6
Private housing (%)	85.6	9.2	32.4	99.1
Social assistance* (per 1,000)	892.0	60.5	618.8	972.2
Unemployment service* (%)	70.9	8.4	46.0	87.7

Tab. 2: Descriptive statistics of the selected indicators measuring economic disengagement (\*Reversed indicators)  
Source: author's calculations

Component	Eigenvalue	Difference	Proportion	Cumulative
Comp1	2.8246	0.6108	.2825	.2825
Comp2	2.2138	0.6980	.2214	.5038
Comp3	1.5159	0.5481	.1516	.6554
Comp4	0.9678	0.2629	.0968	.7522
Comp5	0.7049	0.1090	.0705	.8227
Comp6	0.5959	0.1143	.0596	.8823
Comp7	0.4815	0.1875	.0482	.9304
Comp8	0.2941	0.0350	.0294	.9598
Comp9	0.2590	0.1165	.0259	.9857
Comp10	0.1425	.	.0143	1.0000

Tab. 3: Results of PCA (unrotated; Bartlett's test of sphericity:  $c^2(45, N = 83) = 303.94, p < .001$ ; KMO index: .604)  
Source: author's calculations

components. Since, in the case of my data, the first principal component accounts for only 28% of the total variance (see Tab. 3), I decided to calculate weights based on all principal components<sup>7</sup>: Table 4 reports the resulting weights. Table 5 presents a ranking of Russian regions based on the value of the composite index of economic disengagement. The higher the value of the index, the higher the overall intensity of disengagement practices in a region.

The ranking shows that, according to the official data, the highest intensity of economic disengagement is found in the Kaliningrad, Omsk and Stavropol oblasts. This means that the inhabitants of these regions on average exhibit the weakest economic ties to the state. At the opposite pole are the inhabitants of Chukotka AO, Chechen Republic and Ingushetia, whose residents' economic disengagement as measured by the CI is the lowest in Russia, meaning that, according to official data, they live 'closest to the state' in economic terms on average.

It is worth considering what makes Kaliningrad – a Russian exclave surrounded by the EU countries – the country's top region in terms of economic disengagement. First of all, its specific geopolitical location contributes to more intense contacts with the outside world. It may also be a matter of specificity of the region's population, which consists of migrants and their descendants who,

Indicator	Weight
Private sector employment	.109
Informal sector employment	.129
Subsistence farming	.092
Expenditure on education	.077
Expenditure on health	.091
Emigration	.115
Employment abroad	.083
Private housing	.118
Social assistance*	.117
Unemployment service*	.069

Tab. 4: Weights assigned to the individual disengagement indicators. Source: author's calculations

according to the selectivity of migration hypothesis (see Chiswick, 2008), should be more active and enterprising than residents of Russia on average (see also Verkhovskaya and Dorokhina, 2013). Although the region's transformation into a special economic zone turned out to be insufficient to attract foreign investors, small business is well developed there. Another interesting observation in terms of economic

<sup>7</sup> Weights were calculated taking into account the proportion of variance in each principal component explained by an indicator (calculated as the square of a correlation coefficient between an indicator and a principal component) and percentage of total variance in the data set contained in each principal component.

Rank	Region	CI value	Rank	Region	CI value	Rank	Region	CI value
1.	Kaliningrad Ob.	0.982	29.	Karelia Rep.	0.133	57.	Khanty-Mansi AO	– 0.101
2.	Omsk Ob.	0.669	30.	Nizhny Novgorod Ob.	0.122	58.	Ryazan Ob.	– 0.112
3.	Stavropol Ob.	0.601	31.	Kabardino-Balkar Rep.	0.113	59.	Chelyabinsk Ob.	– 0.122
4.	Rostov Ob.	0.565	32.	Sverdlovsk Ob.	0.108	60.	Murmansk Ob.	– 0.130
5.	Chuvash Rep.	0.543	33.	Novosibirsk Ob.	0.094	61.	Pskov Ob.	– 0.146
6.	Krasnodar Kray	0.508	34.	Altai Kray	0.093	62.	Khabarovsk Kray	– 0.147
7.	Belgorod Ob.	0.492	35.	Sakha Rep.lin Ob.	0.083	63.	Komi Rep.	– 0.148
8.	Tomsk Ob.	0.477	36.	Perm Kray	0.083	64.	Amur Ob.	– 0.156
9.	Volgograd Ob.	0.465	37.	Saratov Ob.	0.081	65.	Kaluga Ob.	– 0.174
10.	Voronezh Ob.	0.460	38.	Leningrad Ob.	0.072	66.	Krasnoyarsk Kray	– 0.174
11.	North Ossetia-Alania Rep.	0.458	39.	Ulyanovsk Ob.	0.062	67.	Moskovskaya Ob.	– 0.206
12.	Astrakhan Ob.	0.399	40.	St Petersburg City	0.056	68.	Yamalo-Nenets AO	– 0.229
13.	Khakassia Rep.	0.382	41.	Altai Rep	0.047	69.	Moscow City	– 0.230
14.	Kursk Ob.	0.348	42.	Ivanovo Ob.	0.035	70.	Yaroslavl Ob.	– 0.232
15.	Karachay-Cherkess Rep.	0.326	43.	Vladimir Ob.	0.018	71.	Jewish AOb	– 0.274
16.	Tatarstan Rep.	0.325	44.	Kostroma Ob.	0.018	72.	Arkhangelsk Ob.	– 0.296
17.	Primorsky Kray	0.315	45.	Tula Ob.	0.015	73.	Zabaykalsky Kray	– 0.317
18.	Tambov Ob.	0.257	46.	Udmurt Rep.	0.008	74.	Bryansk Ob.	– 0.323
19.	Novgorod Ob.	0.244	47.	Kirov Ob.	0.003	75.	Dagestan Rep.	– 0.378
20.	Tyumen Ob.	0.234	48.	Vologda Ob.	– 0.009	76.	Kamchatka Kray	– 0.431
21.	Penza Ob.	0.212	49.	Tver Ob.	– 0.020	77.	Sakha Rep.	– 0.678
22.	Smolensk Ob.	0.188	50.	Mordovia Rep.	– 0.030	78.	Nenets AO	– 0.745
23.	Mari El Rep.	0.182	51.	Kalmykia Rep.	– 0.044	79.	Magadan Ob.	– 0.803
24.	Orenburg Ob.	0.179	52.	Kemerovo Ob.	– 0.061	80.	Tuva Rep.	– 0.853
25.	Buryatia Rep.	0.178	53.	Samara Ob.	– 0.069	81.	Ingushetia Rep.	– 0.875
26.	Bashkortostan Rep.	0.167	54.	Kurgan Ob.	– 0.075	82.	Chechen Rep.	– 1.068
27.	Adygea Rep.	0.161	55.	Irkutsk Ob.	– 0.077	83.	Chukotka AO	– 1.885
28.	Lipetsk Ob.	0.148	56.	Oryol Ob.	– 0.090			

Tab. 5: Ranking of the Russian regions based on values of the composite index of economic disengagement (Note: Ob. – Oblast; Rep. – Republic; AO – Autonomous Okrug; AOb – Autonomous Oblast).

Source: author's calculations

disengagement is that many residents of the region use private medical services in the neighbouring EU countries, which offer better value for money than private providers in the oblast (Rogoza et al., 2012).

The distinctiveness of Chukotka AO also stems from several factors. Firstly, it may be, as noted by Gimpelson and Treisman (2002) for public employment, an issue of the economies of scale. As they argue, in small border regions the share of population needed to provide basic public services is greater than in heavily populated or highly urbanised areas. Peripheral Chukotka, with a population of 51,000, definitely fits into this scheme<sup>8</sup>. A relatively large share of the population is employed in the public sector – in education, health care and administration, among others. Secondly, its inhabitants are relatively much more dependent on the state than the average resident of Russia due to harsh climatic conditions and the remoteness of the region. That is why the black economy is rather small in the region. Institutional

factors are also important. Chukotka's former governor, oligarch Roman Abramovich, after coming to power in 2000, launched an extensive modernisation program, *inter alia*, restoring the Soviet state farms engaged with reindeer herding and sea-mammal hunting (Thompson, 2002).

As Gray (2012) writes, since the late 1990s herders were forced to hand over their enterprises to municipal control (the so-called municipalisation of reindeer herding). Thanks to Sibneft revenues and his own resources, Abramovich was able to finance housing construction, provide relatively high wages and pensions, and improve the quality of medical and educational services in the region (Vasilenko, 2007). Apart from employment in administration, the education sector and health care and activities related to traditional husbandry and hunting (such as deer raising, sea hunting, fur farming and dog breeding), Chukotka is also a place for natural resources extraction (e.g. gold mining). Although extraction is run by private companies, this fact does not impact the

<sup>8</sup> Similarly, for example, Nenets AO, Magadan Oblast and Tuva Republic (cf. Fig. 1).

Rosstat employment statistics as most workers are hired on a rotational basis and, due to short stays, they might not be considered residents of the regions (and consequently they might be not accounted for in the official statistics).

To look for zonal patterns I depict the intensity of disengagement in a choropleth map (Fig. 1), dividing Russian regions into five classes according to the value of the composite index.

The map indicates that the ties between state and society are relatively tighter in the northern and far eastern regions (with the exception of Primorsky Krai)<sup>9</sup>. Simple linear regression confirms the negative relationship between the intensity of economic disengagement and the latitude ( $\beta = -0.018$ ,  $p = .018$ ) and longitude ( $\beta = -0.005$ ,  $p < .001$ ) of a federal subject's capital, respectively. The relatively low level of economic disengagement among residents of the northern and far eastern periphery of Russia is not surprising and supports Hypothesis 1. It is historically embedded given that survival in areas offering the most severe conditions in Russia has long been subject to state support. In Soviet times, the state used to offer diverse incentives, such as higher wages or free access to hard-to-reach goods and services, to attract people to northern and far eastern destinations. Such an approach might have led to development of a 'demanding' mentality, when people accustomed to material benefits expect the state to provide them with everything they need. Most of the regions with the lowest intensity of economic disengagement belong to the Russian Far North (*Krayniy Sever*)<sup>10</sup>, whose residents have been granted certain privileges under federal law, including salary and pension supplements, extra vacations and housing benefits. It is worthwhile to note that apart from regions located in

northern Russia, this category includes, among others, the whole territory of Tuva Republic and part of the Zabaykalsky Krai (cf. Fig. 1). Colonisation of the inhospitable northern areas carried a significant propaganda value in Soviet times and rational economic arguments indicating that conducting profitable activity on such territories is hardly feasible were not taken into account. They have been, however, accounted for in the post-Soviet times, when the state acknowledged the unprofitability of development of new infrastructure and the high cost of maintaining the existing infrastructure. That is why it started to encourage inhabitants of the northern periphery to migrate to more climatically hospitable regions and to try to delegate the costs of sustaining the population to private enterprises, which benefit from exploration of the northern periphery's natural resources (Round, 2005). Due to spontaneous and state-encouraged out-migration flows, these regions have been affected by heavy depopulation over recent decades (see Heleniak, 1999; Mkrtchyan, 2004; Wites, 2007), which, assuming selectivity of migration, allows us to claim that it was the most active and enterprising individuals that left, leaving the region with an overrepresentation of passive, potentially less economically disengaged individuals. Apart from this path dependence-related factor, it is not without importance that survival in northern parts of Russia is extremely costly. For instance, in terms of housing, property maintenance is very expensive, the infrastructure is dishevelled and the chances of selling it are poor, so that people prefer the state (municipality) to continue to take care of it (Shomina, Heywood, 2013).

As regards the three North Caucasian regions belonging to the lowest disengagement intensity class – Dagestan, Chechnya and Ingushetia – their low CI level is largely

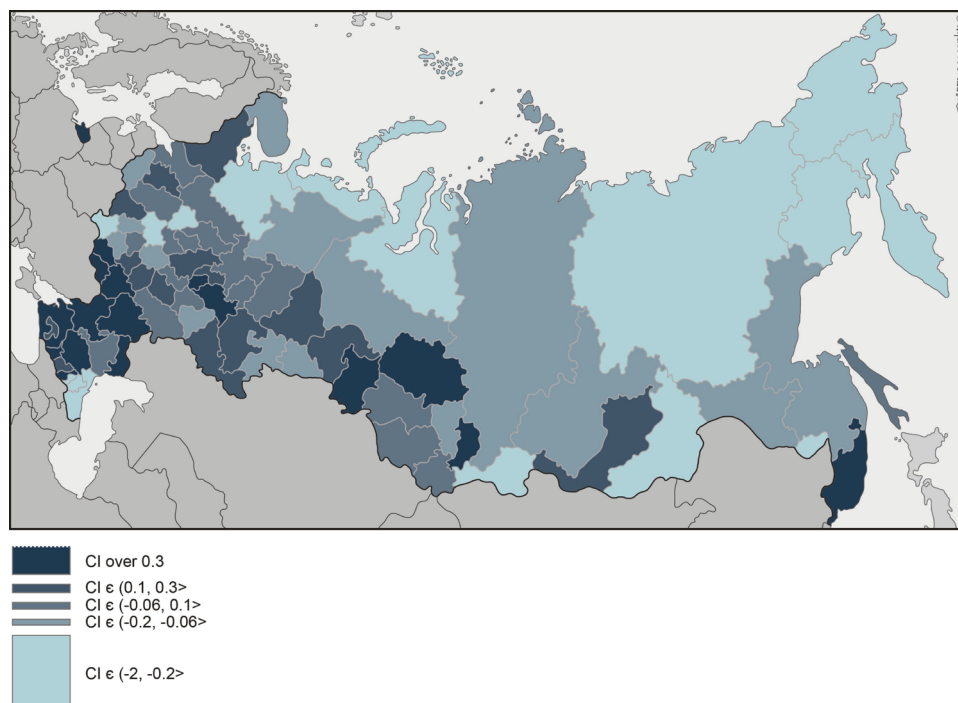


Fig. 1: Spatial diversity of the intensity of economic disengagement in Russia

Source: author's calculations; Graphic design: Wojciech Mańkowski

<sup>9</sup> Primorsky Krai owes its distinctiveness, among other things, to its strategic geographical location and infrastructure – given its ice-free ports and well-developed railway transport, it serves as a transportation hub allowing easy access to the neighbouring Asian markets.

<sup>10</sup> For the full list of regions see: [http://www.gks.ru/bgd/regl/b15\\_22/Main.htm](http://www.gks.ru/bgd/regl/b15_22/Main.htm) under Perechen' rayonov Kraynego Severa i priravnennykh k nim mestnostey (accessed 11.12.2015).

attributed to a huge shadow economy and (partly its consequence) the low reliability of the official statistics (Zubarevich, 2011). Moreover, survival of families is partially ensured thanks to interfamily transfers (strong kinship bonds play a role here) and transfers from labour migrants who perform (often unofficial) work in more prosperous Russian regions. The specificity of the Caucasus lies in the particular combination of disengagement and engagement. Although most of the economic activity of the population is concentrated in the shadow economy, at the same time employment within state structures is highly valued. For instance, North Caucasian youth, long before it became popular in many other Russian regions, has not avoided military conscription and even competed for the admission to the army, seeing it as a door opener to further work for the local authorities or the police<sup>11</sup>. Given the low reliability of official statistics for the North Caucasus republics, I repeated the calculations for the 77 Russian regions (without the six North Caucasus regions). The obtained result does not differ much from the one based on all 83 regions.

The higher intensity of economic disengagement among residents of the south of the European part of Russia may also be explained by geographic and path dependence-related factors. Its geographic location contributed, among other things, to the development of tourism (and thus private restaurants and guesthouses), harbours (which entail contacts with the outside world), and the dominance of private family housing over multi-apartment buildings.

#### 4.2 Predictors of the intensity of economic disengagement

Figure 1 indicated that there is a certain level of clustering of regions possessing similar intensity of economic disengagement. This suggests that the spatial pattern

should be accounted for when constructing a regression model<sup>12</sup>. Local Moran's I (univariate LISA – local indicator of spatial association) produces the following cluster map (Fig. 2), which suggests that the Russian Far East clusters regions with significant low-low spatial autocorrelation, while the southern part of European Russia – locations with high-high spatial autocorrelation. Based on the calculation of local Moran's I, I additionally include two dummy variables: South and Far East in the model to address the problem of regional spatial heterogeneity (see O'Loughlin et al., 1994). The former identifies regions belonging to the Far Eastern Federal District; the latter – to the Southern Federal District (in its boundaries from before 2010). Table 6 presents the results of the OLS multiple regression including, among other things, the two federal district dummies and measures of the ethnic structure and federal status of a region as the main explanatory variables, as well as the composite index of economic disengagement as a response variable. The model was tested for heteroscedasticity and multicollinearity and neither of these effects was detected.

I tested the obtained model for neighbouring effects. The global spatial autocorrelation diagnostics show that there is no indication of the presence of spatial dependence anymore, so there is no need to resort to a spatial error or a spatial lag model. Local Moran's I run on regression residuals shows only a cluster of regions around Moscow Federal City, representing the low-low autocorrelation type, but it does not significantly affect the overall distribution of residuals. The two federal district dummies did not prove to be significant, which means that there is no evidence of significant differences between the three sub-regions when adjusting for basic socio-economic variables.

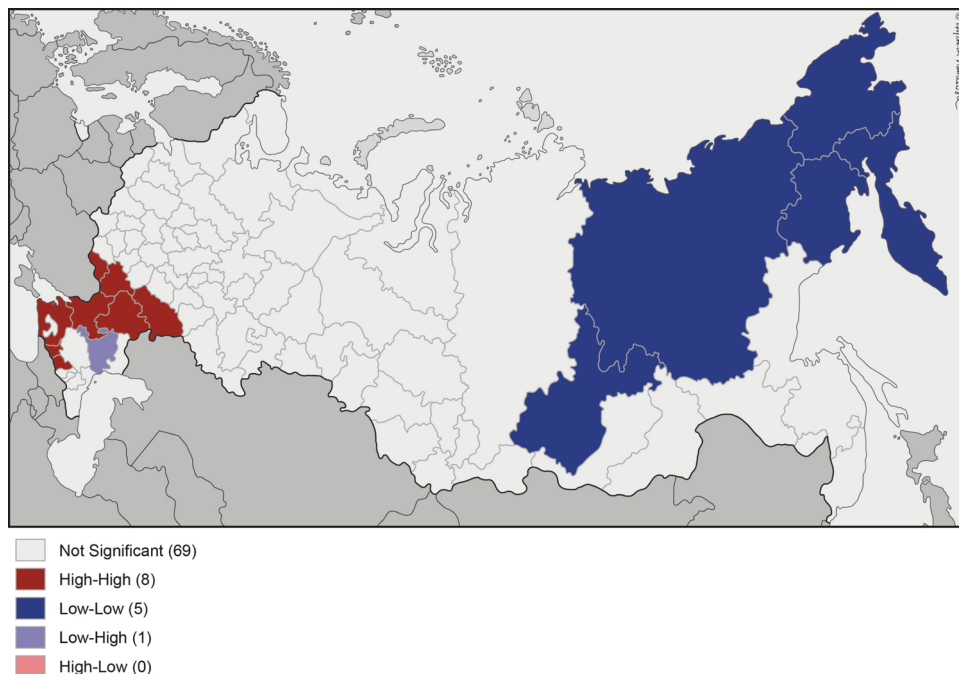


Fig. 2: LISA cluster map on CI ( $p < .05$ , 9,999 permutations)

Source: author's calculations based on the LISA map generated in GeoDa; Graphic design: Wojciech Mańkowski

<sup>11</sup> I am grateful to Vladimir Kolosov who turned my attention to this paradox giving this exact example during our conversation in August 2015.

<sup>12</sup> For the spatial autocorrelation diagnostics for the composite index, there is indeed a significant degree of clustering in the data. Univariate Moran's I amounts to 0.37 (with a pseudo p-value of .001 by randomisation of 999 permutations), which offers a strong indication of spatial dependence.



Coefficient	Economic disengagement (CI)
(Intercept)	1.125 (0.604)
Share of ethnic Russians	– 0.009 (0.006)
Republic	– 1.311 (0.584)*
Kray	0.711 (2.130)
Autonomous okrug	– 6.291 (1.507)***
Share of ethnic Russians*republic	0.018 (0.007)**
Share of ethnic Russians*kray	– 0.007 (0.024)
Share of ethnic Russians* autonomous okrug	0.097 (0.023)***
Average monthly wage	– 3.306e-05 (7.150e-06)***
Unemployment rate	– 0.017 (0.008)*
Share of highly educated	0.002 (0.001)*
South	0.172 (0.112)
Far East	– 0.031 (0.134)
GRP per capita	5.172e-07 (1.955e-07)*
Adjusted R <sup>2</sup>	.613
No. of observations	83

Tab. 6: Covariates of economic disengagement in Russia (Note: \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ )

Source: author's calculations

Analogous analysis carried out on a smaller subsample (when excluding six North Caucasus republics) yields similar results.

The model shows that residents of republics and autonomous okrugs are on average less economically disengaged than residents of oblasts and krays. This result supports Hypothesis 2a and remains in line with Gimpelson and Treisman's (2002) claim that ethnically-defined units with autonomous status (i.e. republics and autonomous okrugs) enjoy more administrative power, which allows them to boost the public sphere (e.g. to increase public employment). At the same time, the model indicates that the share of ethnic Russians is positively associated with economic disengagement in the case of ethnically-defined regions (republics and autonomous okrugs), while it does not matter in the case of oblasts and krays (which lends support to Hypothesis 2b). Such a result may be evidence of the lower level of economic disengagement among titular nationalities compared to ethnic Russians.

Theoretically, one may argue that the results may indicate the unequal redistribution of public resources resulting from regional sovereignty and redistributive politics oriented at favouring a titular group within a region and discriminating against other groups. Following such reasoning, a higher share of representatives of a titular nation in a republic or an autonomous okrug would imply a higher share of the privileged group, i.e. having better access to state resources, and thus less disengaged, hence decreasing overall intensity of disengagement in a region.

An alternative explanation is also possible, however – that a higher share of ethnic Russians may translate into a higher intensity of economic disengagement, not due to privileges granted to titular nationalities but due to the fact that members of titular ethnic groups are, on average, more state dependent, owing to other, for example structural factors, such as population structure by age, education or income level. As shown by previous scholarship (Brunarska, 2015), members of titular ethnic groups are indeed less economically disengaged than ethnic

Russians. This individual-level study suggests, moreover, that the latter interpretation is more plausible. When one simply compares disengagement levels between the two groups, members of titular ethnic groups seem to be on average less economically disengaged than ethnic Russians. Disappearance of this relationship after incorporating additional controls suggests, however, that it is not the ethnicity factor per se that differentiates these two groups, but that other characteristics of titular ethnic groups are responsible for their (on average) lower score on the disengagement index (namely age structure, income level and type of locality they reside in). This suggests that either they do not have privileged access to public resources or that they also enjoy preference in the private sector (e.g. when it comes to running a business).

## 5. Conclusions

This paper constitutes the first attempt to measure economic disengagement in state-society relations on a regional level. It proposes a composite index aggregating a region's scores in several different spheres: sector and formal basis of employment, expenditure on education and health care, housing, out-migration, employment abroad, resorting to subsistence farming, social assistance and state unemployment services.

The analysis identified regions where, according to official data, the economic ties between the state and society are relatively loose (Kaliningrad, Omsk and Stavropol oblasts, to name the three territorial units with the highest intensity of economic disengagement) and regions where they are relatively tight (Chukotka AO, Chechen and Ingushetia republics, to name just those three regions with the least economically disengaged populations). The results indicate that residents of the northern and far eastern parts of the country are less economically disengaged than inhabitants of the more centrally located regions. The area with the lowest intensity of economic disengagement strongly overlaps with the Russian Far North (*Krayniy Sever*). This may be explained by the fact that the state used to

provide, and partly still provides, certain incentives, forms of compensation or additional support for residents of the Russian Far North and Far East.

The lowest intensity of economic disengagement in state-society relations in the latter regions follows, firstly, from the in-hospitality of local physical-geographic (including climatic) conditions and the resulting high costs of living. Secondly, it is connected to the fact that the state has long granted certain privileges to inhabitants of these regions, thus strengthening their ties to the state. The latter may in fact be perceived as a causal factor since in many of those places there were no inhabitants (apart from small groups of indigenous people) before the state decided to support settlement there. The spatial diversity of the intensity of economic disengagement in Russia may thus be interpreted in terms of path dependence and considered a historical, most of all Soviet, legacy. Moreover, a low intensity of economic disengagement may indicate regions which have lagged behind in transformation, e.g. due to institutional conditions, or regions in which the functioning of a fully free market economy is relatively impossible (Russian Far North).

The results of the regression model show that residents of ethnically-defined regions (republics and autonomous okrugs) are, on average, less disengaged than inhabitants of regions distinguished according to a territorial principle. Furthermore, the share of ethnic Russians is positively related to intensity of economic disengagement in the former regions, while it does not matter in the latter. This is consistent with the research hypothesis that this phenomenon is indicative of the lower level of economic disengagement among titular nationalities in comparison to ethnic Russians. This, in turn, may be due to the sovereignty-related unequal distribution of public resources or due to structural factors. In the light of previous findings, the latter interpretation is more plausible.

The study has certain limitations which need to be acknowledged. Firstly, being an attempt to aggregate numerous indicators into one measure, the approach taken as regards the measurement of the intensity of economic disengagement suffers from all the caveats imposed on composite indices. Secondly, an important limitation is also the limited reliability of some of the indicators. The spheres that above all suffer from low data reliability are migration and mobility statistics. Data on emigration and labour migration are considered to heavily underestimate the true scale of these phenomena. This is because people tend not to deregister from their former place of residence upon leaving Russia (Ivakhnyuk and Iontsev, 2012). Moreover, the population census which provides data on labour migration does not include households where all the members were absent in Russia at the time of the census. Another example of a variable with questionable reliability is the indicator of private sector employment. It has to be borne in mind that the boundary between public and private is often blurred in the post-Soviet context (Oswald and Voronkov, 2004). The ambiguity in belonging to the public or private sector primarily concerns large companies to which the government assigns strategic importance. Notwithstanding the fact that sometimes the available data are not suitable for assessing the real scale of the phenomena, I assume that they can still provide us with some valuable information concerning regional diversity. Thirdly, the multidimensional character of disengagement along with the novel character of the conceptual approach

and the consequent lack of previous attempts to measure the intensity of disengagement in its economic dimension on a regional level, make it impossible to validate the construct obtained empirically in this study.

The paper contributes to the existing research in several ways. First, it proposes a refinement of the existing analytical approaches used to study the interaction between the state and society, applying a modified version of the relatively under-used concept of disengagement from the state. It offers a reformulation of the concept to allow the agency to emanate from the state – and thus allows the use of macro data. Second, it applies the concept of disengagement in its economic dimension – previously studied mainly in the context of developing countries and applied primarily to African states – to a new geographic context, namely, that of contemporary Russia. Third, looking for covariates of disengagement on a macro level, it adds a geographical perspective to a subject previously undertaken mostly by scholars in political science, political economy and political sociology. Fourth, the study adds to the scholarship on regional diversity and the socio-economic development of Russian regions and informs the discussion on the special status of ethnically-defined territories in Russia. As regards the second point mentioned above, the proposed conceptual approach may potentially be applied to other geographical contexts. While generally the proposed composite index may be applicable in other contexts, the exact choice of indicators measuring disengagement should be perceived as partially context-specific and thus not universal. First, some indicators may prove redundant in other contexts (e.g. informal sector employment when private sector employment is already accounted for – in countries with a clear boundary between public and private). Second, some phenomena may be marginal or non-existent (e.g. subsistence farming in prosperous societies).

Economic disengagement denotes economic autonomy from the state which, in turn, as McMann's (2006) study shows, makes people more likely to exercise their democratic rights. Thus, one may expect populations of regions noting the lowest intensity of economic disengagement to show the highest levels of political disengagement as regards extra-electoral activity and the lowest levels of electoral abstention. Future research might find it worthwhile to examine these relationships. In light of the current study, several other promising venues of research occur. As far as the federal status of a region is concerned, a natural question arises: is the state in ethnically-defined federal subjects less withdrawn or are inhabitants of those regions more passive in meeting their demands? Answering such a question is not possible by a macro approach such as the one offered by this paper. Nor can it answer a few other interesting questions, for instance, related to the type of motivation which stands behind individual disengagement practices. It is, above all, a question of whether people in a given region or locality disengage because they prefer private over public channels – or because the state has withdrawn and does not offer certain services for all or at a satisfactory level. To disentangle this puzzle, further in-depth studies, potentially involving both quantitative and qualitative methods, are needed. It would be worth developing such a study design that would make it feasible to distinguish between society- and state-initiated disengagement, i.e. disengagement 'from' and 'of' the state.

Although these findings remain tentative, they would seem to be a good starting point for a more thorough analysis. In future studies, it would be advantageous to go beyond

the cross-sectional design of this study and explore the heterogeneity of the intensity of state-society interaction, not only across space but also across time. Such an approach would enable consideration of the ongoing changes in the context of austerity and neoliberal politics. Adoption of the cumulative time and space perspective would make it possible to consider the various trajectories followed by different regions – and peoples – within Russia.

## Acknowledgements

*This paper was prepared within the 'Disengagement from the state – the perspective of Russian regions' research project. The project was funded by the National Science Centre (Poland) based on decision No. DEC-2013/11/N/HS4/03627. My research was also supported by the Foundation for Polish Science. I would like to express my thanks to Tom Dickinson for his helpful assistance with the preparation of the Russian GIS data file and to John O'Loughlin for his kind advice on spatial analysis.*

## References:

- ABRAMOVA, E. (2012): Krizisnaya samozanyatost' v Rossii: klassifikatsiya, struktura i urovni razvitiya. *Sovremennye naukoemkie tekhnologii. Regional'noe prilozhenie*, 4(32): 6–15.
- ALL-RUSSIAN POPULATION CENSUS (2010): Rosstat [online]. [cit. 20.08.2013]. Available at [http://www.gks.ru/free\\_doc/new\\_site/perepis2010/croc/perepis\\_itogi1612.htm](http://www.gks.ru/free_doc/new_site/perepis2010/croc/perepis_itogi1612.htm)
- ANSELIN, L., SYABRI, I., KHO, Y. (2006): GeoDa: an introduction to spatial data analysis. *Geographical Analysis*, 38(1): 5–22.
- AZARYA, V., CHAZAN, N. (1987): Disengagement from the state in Africa: reflections on the experience of Ghana and Guinea. *Comparative Studies in Society and History*, 29(1): 106–131.
- BAHRY, D. (2002): Ethnicity and equality in post-communist economic transition: evidence from Russia's republics. *Europe-Asia Studies*, 54(5): 673–699.
- BAKER, B. (1997): Escape from domination: the concept of disengagement in Third World Studies. *Politics*, 17(2): 87–94.
- BRUNARSKA, Z. (2015): Economic disengagement in state-society relations in Russia – analysis of a household survey. *Eurasian Geography and Economics*, 56(5): 547–574.
- BRUNARSKA, Z. (2016): Disengagement in state-society relations in Russia – a regional perspective. Unpublished doctoral thesis, Faculty of Geography and Regional Studies, University of Warsaw.
- CHISLENNOST' I MIGRATSIYA NASELENIYA ROSSIYSKOY FEDERATSII V 2012 GODU (2013): Moscow, Rosstat.
- CHISWICK, B. (2008): Are immigrants favorably self-selected? An economic analysis. In: Brettell, C. D., Hollifield, J. F. [eds.]: *Migration theory: talking across the disciplines*. (pp. 52–75). New York, Routledge.
- CLARKE, S. (2002): Making ends meet in contemporary Russia: secondary employment, subsidiary agriculture and social networks. Bodmin, Edward Elgar Publishing.
- CLARKE, S., KABALINA, V. (1999): Employment in the new private sector in Russia. *Post-Communist Economies*, 11(4): 421–443.
- CODAGNONE, C., FILIPPOV, V. (2000): Equity, exit and national identity in a multinational federation: the 'multicultural constitutional patriotism' project in Russia. *Journal of Ethnic and Migration Studies*, 26(2): 263–288.
- DECANCO, K., LUGO, M. (2013): Weights in multidimensional indices of well-being: an overview. *Econometric Reviews*, 32(1): 7–34.
- DOKHODY, RASKHODY I POTREBLENIE DOMASHNIKH KHOZYAYSTV V 2012 GODU (2013): Moscow, Rosstat.
- DONAHOE, B. (2011): On the creation of indigenous subjects in the Russian Federation. *Citizenship Studies*, 15(3–4): 397–417.
- DROBIZHEVA, L. [ed.] (2002): *Sotsial'noe neravenstvo etnicheskikh grupp: predstavleniya i real'nost'*. Moscow, Academia.
- EKONOMICHESKAYA AKTIVNOST' NASELENIYA ROSSII 2013 (2013): Moscow, Rosstat.
- FREINKMAN, L., PLEKHANOV, A. (2010): Fiscal decentralization and the quality of public services in Russian regions. *Public Finance and Management*, 10(1): 117–168.
- GADM Database of Global Administrative Areas [online]. [cit. 20.11.2015]. Available at <https://gadm.org/>
- GEL'MAN, V. (2004): The unrule of law in the making: The politics of informal institution building in Russia. *Europe-Asia Studies*, 56(7): 1021–1040.
- GIMPELSON, V., TREISMAN, D. (2002): Fiscal games and public employment: a theory with evidence from Russia. *World Politics*, 54(2): 145–183.
- GIMPELSON, V., TREISMAN, D., MONUSOVA, G. (2000): Public employment and redistributive politics: evidence from Russia's regions. *IZA Discussion paper series*, 161.
- GIULIANO, E. (2011): *Constructing grievance. Ethnic nationalism in Russia's republics*. Ithaca, London, Cornell University Press.
- GRAY, P. (2012): 'I should have some deer, but I don't remember how many': confused ownership of reindeer in Chukotka, Russia. In: Khazanov, A. M., Schlee, G. [eds.]: *Who owns the stock? Collective and multiple property rights in animals*. (pp. 27–44). New York, Oxford, Berghahn Books.
- GRØDELAND, Å. B. (2008): Informal practice, cultural capital and politics in the Czech Republic, Slovenia, Bulgaria and Romania. In: Pickles, J. [ed.]: *State and society in post-socialist economies*. (pp. 229–252). Palgrave Macmillan.
- GRESKOVITS, B. (1998): The political economy of protest and patience. *East European and Latin American transformations compared*. Budapest, Central European University Press.
- HELENIAK, T. (1999): Out-migration and depopulation of the Russian North during the 1990s. *Post-Soviet Geography and Economics*, 40(3): 155–205.



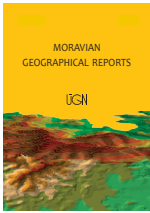
- HIRSCHMAN, A. (1970): *Exit, voice, and loyalty: responses to decline in firms, organizations, and states*. Cambridge, Harvard University Press.
- IVAKHNYUK, I., IONTSEV, V. (2012): *Statistical data collection on migration in Russia*. CARIM-East Explanatory Note 11/19. San Domenico di Fiesole, Robert Schuman Centre for Advanced Studies, European University Institute.
- KAISER, R. (2000): *Ethnic re-stratification in Russia's republics*. Washington, The National Council for Eurasian and East European Research.
- KAMINSKI, B. (1991): *The collapse of state socialism. The case of Poland*. Princeton, Princeton University Press.
- KLIAMKIN, I., TIMOFEEV, L. (2001): *The shadow life. A sociological self-portrait of post-Soviet society*. *Russian Politics and Law*, 39(4): 6–49.
- KOSALS, L., MAKSIMOVA, A. (2015): *Informality, crime and corruption in Russia: A review of recent literature*. *Theoretical Criminology*, 19(2): 278–288.
- LANKINA, T. (2002): *Local administration and ethno-social consensus in Russia*. *Europe-Asia Studies*, 54(7): 1037–1053.
- LEDENEVA, A. (2006): *How Russia really works. The informal practices that shaped post-Soviet politics and business*. Ithaca and London, Cornell University Press.
- LEHMAN-WILZIG, S. (1991): *Loyalty, voice, and quasi-exit: Israel as a case study of proliferating alternative politics*. *Comparative Politics*, 24(1): 97–108.
- LEHMAN-WILZIG, S. N. (1992): *Wildfire: grassroots revolts in Israel in the post-socialist era*. Albany, State University of New York Press.
- MCMANN, K. M. (2006): *Economic autonomy and democracy. Hybrid regimes in Russia and Kyrgyzstan*. Cambridge, Cambridge University Press.
- MIKHAILOV, V. (2015): *Political, social and ethnic protests in Bashkortostan and Tatarstan*. In: Ross, C. [ed.]: *Systemic and non-systemic opposition in the Russian Federation: civil society awakens?* (pp. 153–178). London, New York, Routledge.
- MKRTCHYAN, N. (2004): *'Zapadnyy dreyf' vnutrirossiyskoy migratsii. Otechestvennye zapiski*, 4(19).
- NOBLE, M., WRIGHT, G., SMITH, G., DIBBEN, C. (2006): *Measuring multiple deprivation at the small-area level*. *Environment and Planning A*, 38(1): 169–185.
- OBSLEDOVANIE NASELENIYA PO PROBLEMAM ZANYATOSTI (2013): Moscow, Rosstat.
- O'LOUGHLIN, J., FLINT, C., ANSELIN, L. (1994): *The geography of the Nazi vote: context, confession, and class in the Reichstag election of 1930*. *Annals of the Association of American Geographers*, 84(3): 351–380.
- ORESHKIN, D., ORESHKINA, D. (2006): *Geografiya elektoral'noy kul'tury Rossii. Obschestvennye nauki i sovremennost'*, 5: 20–34.
- OSWALD, I., VORONKOV, V. (2004): *The 'public-private' sphere in Soviet and post-Soviet society. Perception and dynamics of 'public' and 'private' in contemporary Russia*. *European Societies*, 6(1): 97–117.
- PALLOT, J., NEFEDOVA, T. (2003): *Geographical differentiation in household plot production in rural Russia*. *Eurasian Geography and Economics*, 44(1): 40–64.
- PARUOLO, P., SAISANA, M., SALTELLI, A. (2013): *Ratings and rankings: voodoo or science?* *Journal of the Royal Statistical Society*, 176(3): 609–634.
- PROZOROV, S. (2008): *Russian postcommunism and the end of history*. *Studies in East European Thought*, 60(3): 207–230.
- REGIONY ROSSII. SOTSIAL'NO-EKONOMICHESKIE POKAZATELI 2013 (2013): Moscow, Rosstat.
- RIES, N. (2009): *Potato ontology: surviving postsocialism in Russia*. *Cultural Anthropology*, 24(2): 181–212.
- ROGOŹA, J., WIERZBOWSKA-MIAZGA, A., WIŚNIEWSKA, I. (2012): *A captive island. Kaliningrad between Moscow and the EU*. *OSW Studies*, 41.
- ROTHCHILD, D., CHAZAN, N. [eds.] (1988): *The precarious balance: state and society in Africa*. Boulder, Westview Press.
- ROUND, J. (2005): *Rescaling Russia's geography: the challenges of depopulating the Northern periphery*. *Europe-Asia Studies*, 57(5): 705–727.
- RYVKINA, R. (2000): *Tenevizatsiya rossiyskogo obshchestva: prichiny i posledstviya. Sotsiologicheskie issledovaniya*, 12: 3–13.
- SHLAPENTOKH, V. (1989): *Public and private life of the Soviet people: changing values in post-Stalin Russia*. Oxford, Oxford University Press.
- SHOMINA, E., HEYWOOD, F. (2013): *Transformation in Russian housing: the new key roles of local authorities*. *International Journal of Housing Policy*, 13(3): 312–324.
- THO SEETH, H., CHACHNOV, S., SURINOV, A., VON BRAUN, J. (1998): *Russian poverty: muddling through economic transition with garden plots*. *World Development*, 26(9): 1611–1623.
- THOMPSON, N. (2002): *Administrative resettlement and the pursuit of economy: the case of Chukotka*. *Polar Geography*, 26(4): 270–288.
- WARD, M., GLEDITSCH, K. (2008): *Spatial regression models*. Los Angeles, London, New Delhi, Singapore, SAGE Publications Ltd.
- WEGREN, S. (2000): *State withdrawal and the impact of marketization on rural Russia*. *Policy Studies Journal*, 28(1): 46–67.
- WILLIAMS, C. C., ROUND, J., RODGERS, P. (2011): *Explaining the normality of informal employment in Ukraine: a product of exit or exclusion?* *American Journal of Economics and Sociology*, 70(3): 729–755.
- WITES, T. (2007): *Wyludnianie Syberii i rosyjskiego Dalekiego Wschodu*. Warsaw, Wydawnictwa Uniwersytetu Warszawskiego.
- VASILENKO, E. (2007): *Proekt 'Chukotka' kak model' sotsial'noy otvetstvennosti biznesa v regione. Vlast'*, 1.
- VERKHOVSKAYA O. R., DOROKHINA M. V. (2013): *Natsional'nyy otchet. Global'nyy monitoring predprinimatel'stva. Rossiya 2012*. St. Petersburg, Vysshaya Shkola Menedzhmenta Sankt-Peterburgskogo Gosudarstvennogo Universiteta.
- ZHILISHCHNOE KHOZYAYSTVO I BYTOVOE OBSLUZHIVANIE NASELENIYA V ROSSII 2013 (2013): Moscow, Rosstat.



- ZINOVIEV, A. (1982): Gomo sovetikus [online]. [cit. 10.03.2015]. Available at <http://zinoviev.org/files/zinoviev-homo-sovieticus.pdf>
- ZUBAREVICH, N. (2011): Sotsial'no-ekonomicheskoe razvitie respublik Severnogo Kavkaza: kolichestvennye i ekspertnye otsenki. In: Sotsial'nyy atlas rossiyskikh regionov. Portrety regionov. Moskva, Nezavisimyy institut sotsial'noy politiki [online]. [cit. 2.05.2015]. Available at [http://atlas.socpol.ru/portraits/r\\_sk.shtml](http://atlas.socpol.ru/portraits/r_sk.shtml).
- ZUBAREVICH, N. (2012): Sotsial'naya differentsiatsiya regionov i gorodov. Pro et Contra, July–October: 135–152.

**Please cite this article as:**

BRUNARSKA, Z. (2018): Economic disengagement in state-society relations in Russia: A regional perspective. *Moravian Geographical Reports*, 26(4): 230–243. Doi: 10.2478/mgr-2018-0019.



# Mobility and the assimilation of immigrants: Variations in migration patterns of Ukrainians and Vietnamese in the Czech Republic

Eva JANSKÁ<sup>a\*</sup>, Josef BERNARD<sup>b</sup>

## Abstract

*The distribution of international migrants is an essential part of socio-geographical differentiation. In addition to international migration, internal or domestic migration plays an important role in the geographical distribution of immigrants. Based on data from the population register, the Census, and a quantitative survey, we analysed the internal mobility of Ukrainian and Vietnamese immigrants, which are the first and third largest international migrant groups in the Czech Republic. Using the assimilation perspective, the results of the analysis indicate that each ethnic group behaves differently. Specifically, the concentration of these immigrants differed at both regional and neighbourhood levels.*

**Key words:** internal migration, concentration/deconcentration, residential mobility, spatial assimilation, Czech Republic

**Article history:** Received 19 December 2017, Accepted 19 November 2018, Published 31 December 2018

## 1. Introduction

The temporary or permanent mobility of people leads to a spatial redistribution of the population and results in processes described as concentration and deconcentration. This phenomenon is even more complicated when ethnic and immigrant groups are involved. Despite the abundance of recent studies and papers on the geographical distribution of different ethnic groups (Ciobanu et al., 2015; Simpson and Finney, 2009; King and Newbold, 2007; Kritz and Gurak, 2001; Champion, 2005), there are still some gaps in the research on the internal or secondary<sup>1</sup> migration of international migrants at the regional or neighbourhood levels (Hall, 2012; Stilwell, 2010; Bolt and Kempen, 2010; Crul, 2016).

This issue warrants attention as it is apparent that, for many individuals, arrival in a foreign country is not the ultimate step on their migration path. Moreover, spatial

mobility can be seen as one of the important integration indicators of the social mobility (with other examples such as education, gender and housing) of different ethnic groups and their residential segregation processes (e.g. Alba and Foner, 2015).

Existing research on the secondary migration of immigrant populations has reached mixed conclusions (Hall, 2012). While some authors (e.g. Park and Iceland, 2011) have found that secondary migration results in higher residential assimilation/integration levels, others (e.g. Lichte et al., 2010) have determined that the segregation of migrants from natives in secondary migration destinations is significantly higher than in gateway cities<sup>2</sup>, where the initial flows of international migrants into the country often occur. These conflicting results indicate that more research on the spatial distribution of international migrants is needed. Furthermore, given the varying spatial

<sup>1</sup> Secondary migration is all migration that occurs after the initial immigration to the country of destination, usually within the same country.

<sup>2</sup> A gateway city is a large urban area that generally hosts new arrivals, including a large number of immigrants, often due to the opportunities it offers, such as a wider range of employment options and the chances of social interaction and convivial contact with others of the same ethnicity (Singer, 2004; King and Newbold, 2007).

<sup>a</sup> GEOMIGRACE (Geographical Migration Centre), Department of Social Geography and Regional Development, Faculty of Science, Charles University in Prague, Czech Republic (\*corresponding author: E. Janská, e-mail: [eva.janska@natur.cuni.cz](mailto:eva.janska@natur.cuni.cz))

<sup>b</sup> Institute of Sociology, Philosophical Faculty, University of Hradec Králové, Czech Republic

assimilation perspectives that have been presented (Zorlu and Mulder, 2008; Bolt and van Kempen, 2010; Tammaru and Kontuly, 2010), it is likely that internal migration (e.g. suburbanisation processes) is affected by economic and cultural assimilation (Alba et al., 1999; Massey, 1985) and, at the same time, affects spatial integration (i.e. residing outside one's ethnic concentration) and residence in neighbourhoods of good quality (Logan and Alba, 1993). According to this paradigm, immigrants will disperse from early settlements (e.g. gateways, neighbourhoods, cities of different sizes or regions) in the host country, in which members of the same group (usually defined by national or ethnic similarities, but other classifications may be considered) abound or predominate, to subsequent locations (Silvestre and Reher, 2014).

For such investigations, variables such as length of residence, language proficiency, generation, citizenship (measures for cultural assimilation), income, housing and unemployment are often employed as measures of socioeconomic assimilation. Surprisingly, not many studies refer to residential mobility, especially ethnic secondary migration on different spatial levels at the same time. In this sense, few studies have focused on internal migration intensities at the macro level (Bell et al., 2015) or micro level (i.e. via residential segregation research) (Bolt and Kempen, 2010).

In our view, the impact of internal migration on the spatial distribution of immigrants at different residential levels, especially at the neighbourhood level, is an important field of investigation. Moreover, the spatial mobility and frequency of moving (which decreases with longer residence) can be seen as indicators of immigrant integration into the major society (Reher and Silvestre, 2009; Reher and Silvestre, 2011).

In order to assess the determinants of migration flows and the effects of secondary migration on ethnic concentration at the neighbourhood level, we used data from a population registry and a questionnaire survey distributed among Ukrainian and Vietnamese immigrants living in the Czech Republic.

This paper adds to the existing literature on the spatial distribution of immigrants by integrating concentration and diffusion processes of migrants at two different spatial levels with the frequency of internal moves and the presence of co-ethnics in relevant neighbourhoods. In addition, we did not use classical socioeconomic factors in the present research: instead, we employed the integrated factors of integration, length of stay, and frequency of movement.

The aim of this study was to identify the factors shaping the internal migration of selected ethnic groups (Vietnamese and Ukrainians) in the Czech Republic from an assimilation perspective, both at the regional and neighbourhood levels, with the assumption that the two groups' spatial behaviours are different from one another (Janska et al., 2015). To this end, we set up three questions: first, based on findings from the registry data, we asked if secondary migration of international migrants reduces their concentration at different hierarchical levels; second, based on the questionnaire survey, we wanted to know what the relationship was between ethnic concentration and immigrant secondary migration at the neighbourhood level; and third, we questioned whether the level of integration/assimilation is interconnected with local concentrations of ethnic groups.

## 2. Theoretical background

The relationships between mobility and the spatial distribution of populations are most frequently studied from the perspectives of two assimilation theories formulated by American (US) scholars: specifically, these are assimilation theory (Alba and Nee, 2003) and segmented assimilation theory (Portes and Zhou, 1993; Portes and Rumbout, 2001). Although these theories were formulated for the US situation, European scholars have also adopted them to study integration processes at the country/region and neighbourhood levels (Bolt and Kempen, 2010; Crul, 2016; Silvestre and Reher, 2012; Tammaru and Kontuly, 2012). From an historical perspective, our understanding is that in the American literature we encounter the use of an assimilation concept (Alba and Nee, 2003), whereas integration is more frequently used in the European literature (e.g. Bosswick and Heckmann, 2006). Because it denotes much the same expression of the process, we are using the term assimilation/integration.

According to spatial assimilation theory, international migrants or other minorities move from ethnic enclaves or gateway destinations to neighbourhoods that are predominantly populated by the native population (Massey, 1985). In the ecological model of ethnic succession derived from Park (1925) and Gordon (1964), this process is driven by improvements in the migrants' socioeconomic status and command of the host country's language. This may result in their separation from co-ethnics and in acculturation (i.e. behavioural assimilation) or a better matching of their lifestyle to that of the majority population (Alba et al., 1999; Silvestre and Reher, 2012).

In contrast, the segmented (or structural) assimilation theory (Portes and Zhou, 1993) assumes that migrants pursue a diversity of strategies in their contact with the majority population, and consequently integrate themselves into different segments of the host society. In this conceptualisation, their mobility does not necessarily depend on socioeconomic situation and may result in new forms of spatial segregation outside the migrant gateway cities, e.g. in so-called 'ethnoburbs' (Li, 1998); see also Ellis and Goodwin-White, 2006; Tammaru and Kontuly, 2012; Wright and Ellis, 2000; Bolt and Kempen, 2010.

Crul (2016) or, earlier, Vertovec (1998), have attempted to adopt an alternative perspective called superdiversity theory, which seems to be more suitable for application in some European cities, such as Amsterdam and Brussels, where the minority became the majority. The concept also attempts to explain different patterns of social mobility within a selected ethnic group and across generations. For example, Crul studied the use of different institutional arrangements, including the labour market, schools, gender aspects and child care, bringing together important features of the integration context.

The above-mentioned assimilationist approaches usually are related mainly to the second and subsequent generations of migrants (Portes and Zhou, 1993; Crul, 2016; Janska, 2007), arguing that intergenerational outcomes differ among different ethnic groups, and that these outcomes are substantive for explaining the long-term assimilation of immigrant populations. Their main premise, however, namely that the spatial behaviour of immigrants and their residential locations are related to their position within the host society, are inspiring even for the situations of first-generation immigrants. Bernard and

Mikešová (2014), for example, found that the populations of first-generation Ukrainian and Vietnamese immigrants in the Czech Republic are profoundly heterogeneous in terms of assimilation levels, and that their assimilation is crucially affected by the length of residence, particularly in the case of Ukrainians. Specifically, the longer they stay in the Czech Republic, then the higher their assimilation levels are. It seems probable that, together with increasing assimilation, a transformation of the spatial behaviour and changes in places of residence can be expected even in the first-generation immigrant groups.

According to assimilation theory, the deconcentration (diffusion) of particular ethnic groups since their first entry migration does occur. At the same time, the segmented assimilation theory provides the opportunity to assess their different behaviours – that is, either deconcentration or concentration. The processes of internal mobility thus change the relative proportions of immigrant (ethnic) populations in different regions (and especially in major cities and their neighbourhoods). For example, around the late 1990s, a number of studies indicated growing concentrations of ethnic groups in certain urban districts and a parallel flight of white native residents from US cities (Frey, 1996; Frey and Liaw, 1998; Ellis and Wright, 1998; Champion, 2005). Other research showed that international migrants were leaving their gateway cities, for example in Estonia (Tammaru and Kontuly, 2009) and the US again (Wright and Ellis, 2000), and suburbanising (Alba et al., 1999).

The ethnic enclave model (Freeman, 2000) explains how migrants choose destinations with higher concentrations of co-ethnics. Such ethnic enclaves facilitate their adaptation to the new environment through linguistic proximity, co-ethnic employment, availability of housing and some additional protection from discrimination by the majority (van Gent and Musterd, 2012; Gurak and Kritz, 2000; Frey, 1995; Bolt and Kempen, 2010). Their mobility from these regions is also lower in the presence of larger or predominant co-ethnic populations (Gurak and Kritz, 1998; Newbold, 1996). This model additionally assumes that members of minority groups with relatively high socioeconomic statuses would not want to leave their neighbourhoods (Bolt and Kempen, 2010), as was suggested by the assimilation model. Notably, this represents one of the reasons why we used variables other than socioeconomic status for our analyses.

Furthermore, the subject matter of secondary concentration/deconcentration processes due to the internal migration of international migrants in the host country can be studied at different spatial levels. Concentration processes at the regional level do not necessarily translate into the same processes in lower-level units such as neighbourhoods. The settlement processes at both levels may have their own logistics and be determined by different factors. While spatial assimilation theory typically examines immigrant concentration in lower-level units such as city districts (van Kempen and Ozuekren, 1998; Bolt and van Kempen, 2010), researchers studying immigrant concentrations in the context of demographic or labour market developments often prefer looking at

higher-level units (Kritz and Nogle, 1994; Frey, 1995; Hempstead, 2007). Processes at different spatial levels are often studied separately from one another, but in reality they complement each other, even if they may take different forms at different spatial levels at the same time.

In the present study, we aimed to explore the concentration and deconcentration processes at two different spatial levels simultaneously, at the regional level and within cities, at the level of neighbourhoods. Due to insufficient data available for monitoring secondary migration within cities, we employed an alternative approach consisting of a questionnaire survey to obtain the necessary information.

Existing empirical studies of secondary mobility in a number of countries (e.g. Estonia, the Netherlands, Japan, the US, the United Kingdom, Spain, the Czech Republic, Italy and Canada) take into account a broad range of explanatory variables. Examples of such variables include educational attainment, income level, occupational category, unemployment and housing (Kritz and Nogle, 1994; Newbold, 1996; Finney and Simpson, 2008; Hampstead, 2007; Zorlu and Mulder, 2008) as well as the length of residence in the host country. The latter was shown to be important by Zorlu and Mulder (2008), who demonstrated that migrants from non-Western countries such as Turkey, Algeria and Morocco who had been living in the Netherlands for no more than five years, were more likely to relocate to areas with higher rates of ethnic segregation. Although a number of studies suggest a tendency for international migrants to deconcentrate (especially in North America: see, for example, Wright and Ellis, 2000), secondary migration in countries like the Czech Republic, Italy and Spain continue to be dominated by concentration processes (Janska et al., 2015; Silvestre and Reher, 2012) at the regional level.

The question remains as to whether concentration processes occur at both the regional and neighbourhood levels, and whether the answer to this question differs among the two immigrant groups we examined in the Czech Republic (i.e. Ukrainians and Vietnamese). Individuals from these groups tend to behave differently in the labour market and apply for different types of residence. Although both groups have higher rates of mobility than the majority population, based on the segmented assimilation theory we assume there exist different migration patterns in these two migrant groups. We also expect different residential assimilation/integration<sup>3</sup> strategies to be present at the neighbourhood level. The combination of length of stay, type of housing and mobility brings about new avenues for the research of the social distribution of immigrant groups (in this case, Ukrainians and Vietnamese) according to various levels of assessment.

### 3. International migration to the Czech Republic

With its long-term record of positive net migration, the Czech Republic has become the new country of immigration in East Central Europe (Drbohlav and Lesińska, 2014). With more than 510,000 residents with foreign country citizenship in 2017, it was recorded as having the largest international migrant population among all post-communist

<sup>3</sup> We do not aim to reproduce the discussion of the similarities and differences of the “integration” and “assimilation” concepts, which often are considered synonymous, one of which being more frequently used in the European context (integration) and the other in the US (assimilation) – see Ellis and Almgren, 2009; Alba and Nee, 2003; Bosswick and Heckmann, 2006. Thus, we decided to use the term assimilation/integration. For a thorough overview of the theoretical discussion on the links and differences of both concepts, see Uherek (2011)



Central European countries (Eurostat, 2018). In the time period 2001–2008, a continuous increase of the international migrant population in the Czech Republic was registered, as net migration grew from 25,000 to 100,000 annually. The decrease (or stagnation) of that population after 2008 usually has been attributed to the global economic downturn (Janska et al., 2013). Since 2010, however, the number of international migrants has been continuously growing again. Ukrainians form the largest migrant group (although their population shrank after 2008), followed by Slovaks<sup>4</sup> and the Vietnamese. These three groups accounted for three-fifths of the Czech Republic's total international migrant population in 2015.

Until the early 1990s, net population gains were recorded in cities, while losses were conversely noted in rural areas. After 1990, however, the capital city, Prague, became the region with the highest net loss. This trend is believed to be related to suburbanisation processes, in which most natives move to the surroundings of major cities (Čermák, 2004). The flow of people from Prague to its suburbs was counterbalanced by the net gains of international migrants, both newcomers and internal migrants. In 2013, as the home to 37% of all international migrants versus 12% of Czechs, Prague (and some areas bordering Germany) was the most attractive immigrant destination in the Czech Republic (the Czech Statistical Office (CZSO), 2013). In the 2000s, Prague and the Central Bohemian Region received three-fifths of Ukrainians, 45% of Slovaks and one-fifth of Vietnamese migrants who came to the Republic. Although the rates of internal migration of international migrants declined after 2008, existing ethnic ties and labour market opportunities made Prague, Central Bohemia and regional cities, much more attractive as places to live for both direct and secondary international migrants, compared to Czech nationals (Čermák and Janská, 2011; Janska et al., 2015).

#### 4. Methods and data sources

Our first research question, whether the secondary migration of international migrants reduces their concentration at the regional level or not (with the exception of Prague as a gateway city), was tackled with an analysis of data from a publicly available database of the CZSO. This database showed the stock (individuals with valid residence permits) and flows of international migrants (individuals who reported a change of place of residence in the period 2001–2012) and allowed us to calculate net migration figures for different categories of regions. Regions in this analysis are represented by 77 districts in the Czech Republic, with a median population size of 111,000 inhabitants. We aggregated the districts into three categories, as follows: (i) Prague metropolitan area (three districts); (ii) districts with the highest concentrations of Ukrainians or Vietnamese (in the case of Ukrainians, seven districts that included major cities and economically strong industrial regions and, in case of Vietnamese, five districts at the Czech–German border); and (iii) remaining districts.

The boundary between districts with the highest concentrations of Ukrainians or Vietnamese and the remaining districts was set at a 1.5% concentration level of the district population. Forty-seven percent of Ukrainians live in the Prague metropolitan area and another 19% live in high-concentration districts, versus 23% of Vietnamese who live in the Prague metropolitan area and 16%

who live in high-concentration districts, respectively. Subsequently, we analysed migration rates of Ukrainians and Vietnamese between these district types in the time period of 2011 to 2013.

The second research question explored the relation between the secondary migration of international migrants and ethnic concentration at the neighbourhood level. As the available data did not contain sufficiently detailed geo-localisation information to be used for a neighbourhood-level analysis, we used data obtained through a survey of Ukrainians and Vietnamese conducted between March 2013 and May 2013. The sample included immigrants from Ukraine and Vietnam who were 15 years of age or older and who had been legally residing in the Czech Republic for more than one year. Quota sampling (based on age, gender and NUTS3 region) was used, and migrants reporting at least one relocation within the territory of the Czech Republic were overrepresented (to account for at least 40% of the sample). The official administrative database of international migrants was used to construct the basic quota structure. According to the logic of quota sampling, the data are representative of gender, age and regional distribution (NUTS3). Unfortunately, the representativeness of other variables is hard to control due to missing official evidence.

The questionnaire was translated into Vietnamese and Ukrainian and distributed by professional interviewers of the Public Opinion Research Centre. The self-administered surveys were verified on the spot for completeness by the interviewers. A total of 912 interviews were completed by 445 Vietnamese and 467 Ukrainian migrants, respectively. A subjective indicator of ethnic neighbourhood concentrations was used in the survey, based on a respondent's assessment of ethnic concentrations in their neighbourhoods. The respondents were asked to assess how many of their compatriots lived within a five-minute walk of their residence, according to a three-item scale (quite a lot, not that many, practically none). While such a subjective indicator has its weaknesses (e.g. respondents may not be able to make a good estimate), it does not suffer from systematic bias as in the case of the population registry, and allows for analysis to be completed at one of the lowest spatial levels (i.e. at the neighbourhood level). In the analyses, assessment of ethnic neighbourhood concentration was used as a dependent variable, influenced by the number of inter-communal relocations in the Czech Republic. Table 1 shows the distribution in the sample of basic variables that were used in the following analyses.

Finally, we examined whether there is a relation between the level of immigrant concentration in neighbourhoods within cities and their level of integration/assimilation. In this analysis, neighbourhoods were represented by intra-city districts with a median size of approximately 3,500 inhabitants in four major cities in the Czech Republic. Not all districts are of the same size. Unfortunately, some of these districts represent areas significantly larger than neighbourhoods. The four most populated districts have more than 50,000 inhabitants. The census data that were used in the analysis, however, could not be aggregated to more detailed spatial levels due to confidentiality reasons.

Three indicators of social integration/assimilation of international migrants were derived from the census data, as follows:

<sup>4</sup> We did not evaluate Slovaks, who have similar mobility and behavioural patterns compared to Czechs, in the present study.

Characteristics		Ukrainian	Vietnamese
Mean age (years)		36.8	33.9
Mean length of residence in the Czech Republic (years)		7.1	10.9
Gender	Male	60%	60%
	Female	40%	40%
Education (excluding students)	Higher	22%	11%
	Secondary with SE	33%	32%
	Lower	45%	57%
Housing	Hostel	25%	8%
	Rental room	19%	9%
	Rental flat	44%	58%
	Flat ownership	12%	25%
Moved to another municipality in 1998 – 2013 (only respondents with length of residence of 5+ years)	Yes	80%	79%
	No	20%	21%
Perceived number of co-ethnics in neighbourhood	Quite a lot	34%	43%
	Not that many	48%	48%
	Practically none	18%	9%

Tab. 1: Basic structure of the sample of Ukrainian and Vietnamese immigrants (Note:  $n = 912$ ; the sample consists of 445 Ukrainians and 467 Vietnamese). Source: own survey (2013); authors' calculations

1. the share of international migrants who live in a standard and stable accommodation (i.e. a house or apartment, not a hostel or other nonstandard accommodation);
2. the level of home-ownership among international migrants residing in flats; and
3. the sharing of common households with international migrants and Czech citizens.

These indicators were measured separately for Ukrainians and Vietnamese. Subsequently, the assimilation/integration indicators were correlated with the separate concentrations of Ukrainians and Vietnamese in the districts. The first two indicators relate to housing conditions of both immigrant populations. Housing quality and homeownership have been repeatedly understood together as an important assimilation/integration dimension (Rosenbaum and Freidman, 1999; Gobillon and Solignac, 2015). The third indicator relates to households and partnerships formed across national groups. As Ellis et al. (2016) argue, cross-national household composition is an important indicator of the dismantling of social barriers and, moreover, has the potential to disrupt ethnic neighbourhood concentrations. Table 2 indicates the basic descriptions of the indicators.

## 5. Results and discussion

### 5.1 Internal migration of international migrants and their concentration at the regional level

Our results indicate that Prague has been much more important as an immigrant gateway for Ukrainians than for Vietnamese because of the ethnic-specific geographies of the labour market. Ukrainians often work in the temporary construction jobs that are concentrated in Prague, while the Vietnamese tend to seek opportunities in small-scale retail that are more evenly distributed across the country<sup>5</sup>. It has been repeatedly argued that Prague is also the

primary destination of international migrants because of its place in the urban hierarchy. Janská and Bernard (2015) identified trends towards larger cities, for both Ukrainian and Vietnamese migration and particularly in favour of Prague, for the 2010 to 2012 period. Until further analysis is performed, it remains uncertain as to whether the prevailing upward movements within the urban hierarchy result in increasing regional concentrations of international migrants. The tendency to move into the largest cities could result in an increase in concentrations of Ukrainians and Vietnamese in a few important urban settlements and an emptying of the remaining space. We investigated the changing regional concentrations of Ukrainians and Vietnamese by secondary migration, using individual migration data from the CZSO as described above. Tables 3 and 4 summarise the results.

For Ukrainians, the crucial importance of the Prague metropolitan region as a secondary migration destination was confirmed. Secondary migration contributes noticeably to the growth of the Ukrainian population in Prague, where almost half of all Ukrainians in the Czech Republic were concentrated in 2011. Secondary migration increased the dominance of Prague as the most important Ukrainian destination by more than 4% in the period 2011 to 2013. Both high- and low-concentration districts experienced secondary migration losses, but, given the more severe losses in high-concentration districts, secondary migration slightly equalised Ukrainian concentrations outside of Prague.

A similar, albeit weaker trend in favour of secondary migration to the Prague metropolitan region occurred in the case of Vietnamese inhabitants, in that they moved from both high- and low-concentration districts and increased the number of Vietnamese living in Prague by more than 3%. Low-concentration districts were the other types of districts gaining a net migration of Vietnamese immigrants, as there was a distinct migration flow noted from high-

<sup>5</sup> The association can be explained by the differing geographies of job opportunities that are typically tapped by each immigrant community. Most temporary construction jobs for Ukrainians are found in Prague, while opportunities in small-scale retail for Vietnamese are distributed more evenly.

	Ukrainians	Vietnamese
Share of Ukrainians/Vietnamese in standard and stable accommodation	71.2%	92.4%
Home ownership	31.9%	36.5%
Common households with natives	16.3%	15.7%

Tab. 2: Assimilation/integration indicators of Ukrainians and Vietnamese in four main cities in the Czech Republic in 2011. Sources: Census, 2011; authors' calculations

Origin	Destination		
	Prague metropolitan region	High concentration districts	Low concentration districts
Prague metropolitan region	0	– 1,652	– 982
High concentration districts	1,652	0	571
Low concentration districts	982	– 571	0
<b>SUM</b>	<b>2,634</b>	<b>– 2,223</b>	<b>– 411</b>
Relative change of the immigrant population by secondary migration	4.8%	– 9.9%	– 1.1%

Tab. 3: Migration flows between district types, Ukrainians (2011–2013)  
Sources: Czech Statistical Office; authors' calculations

Origin	Destination		
	Prague metropolitan region	High concentration districts	Low concentration districts
Prague metropolitan region	0	– 331	– 75
High concentration districts	331	0	492
Low concentration districts	75	– 492	0
<b>SUM</b>	<b>406</b>	<b>– 823</b>	<b>417</b>
Relative change of the immigrant population by secondary migration	3.3 %	– 10.0 %	1.3 %

Tab. 4: Migration flows between district types, Vietnamese (2011–2013)  
Sources: Czech Statistical Office; authors' calculations

to low-concentration districts. The relative dominance of Vietnamese in Prague increased slowly and the dispersion of Vietnamese into low-concentration districts with small Vietnamese minorities, was the second important secondary migration effect observed.

Secondary migration should, therefore, not be described as a straightforward increase of international migrant concentrations at the district level. Instead, its effects are dual: whereas it strengthened immigrant concentrations in the most important metropolitan areas, it also further contributed to reducing differences in immigrant concentrations in the remaining districts, and resulted in a slow dispersion of both studied minority groups in the Czech territory. The dispersion effect was especially pronounced in the case of Vietnamese individuals.

### 5.2 Internal migration and ethnic concentrations on the micro/neighbourhood level

Using the subjective indicator of international migrant neighbourhood concentrations, we first investigated whether there were any differences in subjectively perceived co-ethnic populations in different types of settlements. Table 5 shows the proportion of respondents who agreed there were 'quite a lot' of co-ethnics residing in the vicinity of their place of residence ("in their neighbourhood"). The presence of increased concentrations of Ukrainian and

Vietnamese migrants in Prague and other larger towns were reflected in their perceptions of co-ethnic populations in the neighbourhood. Respondents in larger towns perceived more often 'quite a lot' of co-ethnics in the neighbourhood as compared to small municipalities. Ukrainians were most likely to perceive quite a lot of co-ethnic individuals in Prague, while Vietnamese did the same in medium-sized and larger towns. For both groups, the differences were statistically significant at the 95% level.

In order to ascertain the effects of the internal migration of international migrants on the perceived concentration of local co-ethnic individuals, we first tested the relationship between the perceived number of co-ethnics and the number of times respondents moved from one Czech municipality to another. The analysis demonstrated a strong relationship in the case of Ukrainians – for these migrants, the share of immigrants perceiving 'quite a lot' of co-ethnics in the neighbourhood decreased with the number of relocations. Interestingly, in comparison, no such relationship was identified for the Vietnamese respondents (Tab. 6).

Subsequently, we used a general linear model approach (logistic regression) to control for the association identified among Ukrainians for additional independent variables (e.g. gender, education, housing and municipality type). A dichotomous dependent variable was defined in terms of whether the respondent perceived a large co-ethnic

Quite a lot of co-ethnics live in the neighbourhood				
	Prague	Regional city	Medium-sized town	Other settlements
Ukrainians	45.1%	34.8%	29.9%	28.8%
Vietnamese	46.6%	40.3%	52.9%	20.9%

Tab. 5: Share of Ukrainian and Vietnamese immigrants who report perceiving “quite a lot” of co-ethnics in their neighbourhood by commune size category (Note:  $n = 797$ )

Source: own survey (2013); authors' calculations

Quite a lot of co-ethnics live in the neighbourhood			
Number of inter-communal relocations in Czech Republic	0	1	2+
Ukrainians	40.4%	31.9%	20.6%
Vietnamese	43.9%	46.5%	41.0%

Tab. 6: Share of Ukrainian and Vietnamese immigrants who report perceiving “quite a lot” of co-ethnics in their neighbourhood by the number of inter-communal relocations (Note:  $n = 797$ )

Source: own survey (2013); authors' calculations

population in the vicinity of his/her current residence or not. Three models were developed, with a gradually increasing number of controls. The results are presented in Table 7.

In Model 1, the single independent variable ‘number of inter-communal relocations in the Czech Republic’ had a significant effect on the outcome. Each relocation led to approximately 30% lower odds of reporting ‘quite a lot’ of co-ethnics in the neighbourhood. The inclusion of three additional independent variables in Model 2 – namely gender, education, and municipality type – increased the model’s explanatory power. In conjunction with these additional factors, the effect of relocations was weakened just slightly. In fact, only gender proved to be a significant predictor in this model, with women reporting significantly less often than there were ‘quite a lot’ of co-ethnics in the neighbourhood. The addition of ‘education’ had no effect. In Model 3, the inclusion of a fifth independent variable, type of housing (with the categories of hostel, rental room, rental

flat, and flat ownership as the baseline variable) considerably improved the model’s explanatory power and simultaneously reduced the effect of the number of relocations.

The apparent interpretation of these findings is that subjective reports on the local co-ethnic population were strongly associated with the type of housing. Ukrainians living in more precarious housing arrangements, and especially in hostels, perceived that they had many more compatriots around them than did those residing in more stable segments of the housing market. A significant reduction of the effect of relocations after the inclusion of the housing type variable means that the effect of relocations on the outcome apparently is mediated by housing type. In fact, there is a significant relationship between the number of relocations and the type of housing (contingency coefficient between the variables: 0.17). Every relocation decreases the number of immigrants living in less stable housing arrangements (e.g. hostels and rental rooms) and increases the number living

	Model 1			Model 2			Model 3		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Number of intercommunal relocations	-0.37*	0.18	0.69	-0.34	0.18	0.71	-0.13	0.19	0.88
Municipality (reference: other)									
Prague				0.53	0.31	1.70	0.80*	0.34	2.24
Regional center (population > 50,000)				0.13	0.36	1.14	0.46	0.39	1.58
Medium sized town (population > 10,000)				-0.03	0.39	0.97	0.10	0.43	1.10
Gender (reference: female)				0.54*	0.22	1.72	0.11	0.25	1.11
Education (reference: tertiary)									
lower secondary				0.46	0.30	1.58	-0.00	0.34	1.00
higher secondary				0.37	0.32	1.45	0.03	0.34	1.03
Housing (reference: flat ownership & other)									
hostel							2.40*	0.47	11.00
rental room							1.00*	0.47	2.70
rental flat							0.37	0.44	1.45
Constant	-0.39*	0.11	0.68	-1.29*	0.39	0.28	-2.03*	0.55	0.13
Nagelkerke R <sup>2</sup>		0.016			0.066			0.244	

Tab. 7: Effect of number of intercommunal relocations on perceiving „quite a lot“ coethnics in neighbourhood, three logistic regression models, Ukrainian immigrants (Note:  $n = 354$ ; \* $\alpha < 0.05$ )

Source: own survey (2013); authors' calculations



in more stable housing types (e.g. rental flats and ownership flats)<sup>6</sup>. In these more stable housing types, immigrants less often report that they perceive a lot of co-ethnics in their neighbourhood.

Analogue models with the same variables were developed also for the Vietnamese immigrants. The number of inter-communal relocations for this group, however, was not significant in either of them<sup>7</sup>. This points at the absence of any substantial relationship between the patterns of internal migration among Vietnamese immigrants in the Czech Republic and their concentration at the level of neighbourhood.

### 5.3 Assimilation/integration indicators and ethnic concentrations

According to classical spatial assimilation theory, there is a relationship between ethnic concentrations and the level of assimilation/integration of individual immigrants in the host society. This relationship results from improvements in migrant socioeconomic status, their stabilisation in the host society, and their adoption of host culture, which is often accompanied by relocations from high-ethnic concentration areas into areas inhabited predominantly by natives (Bosswick and Heckmann, 2006). Largely ethnic neighbourhoods are virtually absent in Czech cities, but there are parts of cities with increased immigrant concentrations (Sýkora et al., 2016; Přidalová and Ouředníček, 2017; Přidalová and Hassman, 2017; Musterd and van Kempen, 2009). Our findings on the decline of subjectively perceived ethnic concentrations in neighbourhoods during the course of secondary migration paths of Ukrainians in the Czech Republic, raises the question of whether neighbourhood ethnic concentrations are associated negatively with the above-mentioned indicators of social assimilation/integration.

Using 2011 census data, we correlated ethnic concentrations of Ukrainians and Vietnamese in individual districts of the four major Czech cities with the three integration/assimilation indicators introduced above. Table 8 summarises the results of the correlation analysis.

For the Ukrainian population, two of the three assimilation/integration indicators show a reasonable correlation with their concentration in individual districts, thus supporting a tendency for spatial assimilation. The total share of Ukrainians in a district correlates negatively with the proportion of Ukrainians living in standard and

stable accommodation, and also with the proportion of Ukrainians who form a common household with natives. In other words, Ukrainians living in districts with the highest Ukrainian concentrations are relatively less residentially stabilised, staying mostly in hostels and forming ethnically homogeneous households. Conversely, in neighbourhoods with lower proportions of Ukrainians, the level of standard accommodation and the proportion of ethnically mixed households is apparently higher.

In the Vietnamese population, only very modest correlations were found. Thus, assimilation/integration indicators appear to be unrelated to local Vietnamese concentrations. The strongest correlation was an association between the proportion of Vietnamese in the district population and the share of Vietnamese in home ownership. This relationship is opposite to what might be anticipated for spatial assimilation. The Vietnamese are more often homeowners in those neighbourhoods in which they compose a higher population percentage. This finding could suggest a gradual formation of residentially stable, ethnically segregated Vietnamese areas, but, in the absence of additional data, this interpretation cannot be reliably supported.

The results of the census-based analysis of assimilation/integration indicators are roughly consistent with the outcomes of the questionnaire-based analysis of neighbourhood-level concentrations. It seems probable that the internal migration of Ukrainians in the Czech Republic results in their spatial dispersion at the neighbourhood level and relates to higher assimilation levels. In the case of Vietnamese, however, such spatial dispersion does not occur, as their concentration at the neighbourhood level appears to be not affected by their secondary migration within the Czech Republic.

## 6. Conclusions

Our analysis of the population registry data and of information from a questionnaire survey of international migrants has enabled us to contribute to the existing scholarly debate about the effects of the internal/secondary migration of international migrants (as represented by contributions such as: Zorlu and Mulder, 2008; Bolt and van Kempen, 2010; Tammaru and Kontuly, 2010), with respect to their spatial redistribution while using assimilation perspectives.

Besides the commonly-used assimilation approach for the explanation of the concentration and deconcentration processes of immigrants (Silvester and Reher, 2012;

	Ukrainians in the district population (%)	Vietnamese in the district population (%)
Share of Ukrainians/Vietnamese in standard and stable accommodation	– 0.570	0.077
Home ownership rate among Ukrainians / Vietnamese	0.064	0.187
Common households with natives	– 0.415	– 0.163

Tab. 8: Pearson correlations of assimilation/integration indicators of Ukrainians and Vietnamese with Ukrainian and Vietnamese concentrations in individual districts in 2011 (Note: 4 cities: 174 districts for Ukrainians, 119 districts for Vietnamese. Districts where no Ukrainians or no Vietnamese live are omitted from the analysis (i.e. counted as missing data). As we use census data, standard errors and statistical significance are not indicated. Sources: Census, 2011; authors' calculations

<sup>6</sup> The results are not presented due to space limitations, but can be obtained from the authors. The association between the number of relocations and housing type is not so strong as to indicate a multi-collinearity problem in the analysis.

<sup>7</sup> These models are not presented due to space limitations.

Wright and Ellis, 2000; Janska et al., 2014), we have also added to our research the perspectives of an ethnic enclave model for a better understanding of the different movement behaviours of the selected ethnic groups. Unlike the situation in Western countries with more long-standing immigration traditions, immigrants to the Czech Republic are rarely concentrated in the most deprived neighbourhoods, and the majority of them in fact reside in core urban areas and in socially heterogeneous housing estates (Přidalová and Hassman, 2017). This situation adds significance to our research by bringing new insights to studies of the spatial distribution of populations, with respect to the concentration/deconcentration trends of the movement of international migrants/ethnic groups, by presenting examples from post-socialist countries.

Our results support the somewhat mixed conclusions of research on internal and residential mobilities and the spatial distribution of immigrant populations in new destinations (Hall, 2012). The results of this research project demonstrate that:

- first, it is clear that Prague, as a gateway city, is a primary and secondary destination for Ukrainian and Vietnamese nationals (at the regional level), but there are slight differences between their behaviours. Contrary to what was seen with Ukrainians, we observed a secondary migration effect via the occurrence of dispersion of Vietnamese into low-concentration districts. The results indicate that Prague has been much more important as an immigrant gateway for Ukrainians than for Vietnamese, because of the ethnic-specific geographies of the labour market, which correspond with models of ethnic enclaves. While Ukrainians, due to their work in temporary construction jobs, are largely concentrated in Prague, the Vietnamese migrants tend to seek opportunities in small-scale retail that are more evenly distributed across the country and owned mostly by themselves;
- second, the opposite effects can be observed at the neighbourhood level, where we assessed secondary migration in relation to ethnic concentration. Interestingly, we found that the number of relocations contributes to the ethnic deconcentration of Ukrainians, whereas we detected no such effects in the case of Vietnamese. Silvestre and Reher (2012) found that multiple immigrant movers deconcentrate spatially. Based on our findings, we argue that the role of subsequent moves for immigrant deconcentration does not apply in general and differs for different ethnic groups. Ukrainians move subsequently after arrival in the country into neighbourhoods with lower ethnic concentrations, which relates to a progressive rise in stable accommodation. In the case of Ukrainians, repeated relocations improved their housing situation and diffuse them within the city at the neighbourhood level, which is in accordance with assimilation theory. For the Vietnamese, such a relationship was not confirmed. Their secondary migration does not result in spatial diffusion within cities and is not associated with an improving and stabilising housing situation;
- third, we were able to show that the level of integration/assimilation is not universally interconnected with local concentrations of the ethnic group. In neighbourhoods with a low proportion of Ukrainians, the level of standard accommodation and the proportion of ethnically-mixed households were significantly higher. Again, for the Vietnamese, the situation was different,

especially in Prague where Vietnamese were more often homeowners and also formed a higher population share in the neighbourhood. This finding could potentially suggest the possibility of a gradual formation of residentially stable, ethnically segregated Vietnamese areas (Sýkora et al., 2016).

To conclude, the assimilation/integration process of Ukrainians at the neighbourhood level seems to correspond well with the expectations of spatial assimilation theory: specifically, gradual assimilation/integration is accompanied by residential de-segregation at the neighbourhood level. Conversely, there was no such trend in the Vietnamese population: whereas a gradual inter-regional dispersion can be observed in the case of the Vietnamese, their residential segregation at the neighbourhood level remains a relatively stable, long-term reality of their lives in the Czech Republic.

Despite the shortcomings of our research, such as missing panel data hindering our ability to uncover in a more detailed way the geographic and accompanying socioeconomic paths of immigrants, as well as the (non-)existence of reliable information on the exact geo-localisation of immigrant residences, and the approximate nature of integration/assimilation indicators, we were able to uncover the complexity of the assimilation perspective in the case of the Czech Republic. In doing so, we aimed to provoke and enrich the debate on appropriate conceptual approaches to contemporary international migration and assimilation/integration concepts, particularly in East Central Europe.

## Acknowledgements

*The paper was supported by the project “Specifický výzkum FF UHK: „Sociální sítě cizinců a městské prostředí“. Grants from the Czech Science Foundation (No. 42-201060) and Technical Agency Programme ETA (No. TL01000127) also made this research possible.*

## References:

- ALBA, R., NEE, V. (1999): Rethinking Assimilation Theory for New Era of Immigration, In: Hirschmann, C., Kasinitz P., DeWind J. [eds.]: *The Handbook of International Migration: The American Experience*. Russel Sage Foundation, New York.
- ALBA, R., FONER, N. (2015): *Strangers no More*. Princeton University Press.
- ANDRESON, R. (2012): Understanding Ethnic Minorities' Settlement and Geographical Mobility Patterns in Sweden Using Longitudinal Data. In: Finney, N., Catney, G. [eds.]: *Minority Internal Migration in Europe*. Ashgate, Burlington (pp. 263–292).
- BELL, M., CHARLES-EDWARDS, E., UEFFING, P., STILLWELL, J., KUPISZEWSKI, M., KUPISZEWSKA, D. (2015): Internal migration and development: comparing migration intensities around the world. *Population and Development Review*, 41(1): 33–58.
- BERNARD, J., MIKEŠOVÁ, R. (2014): Sociální integrace imigrantů na rozhraní mezi dočasnou migrací a trvalým usazením. *Sociologický časopis/Czech Sociological Review*, 50(4): 521–545.
- BOLT, G., VAN KEMPEN, R. (2010): Ethnic segregation and residential mobility: relocation of minority ethnic groups

- in the Netherlands. *Journal of Ethnic and Migration Studies*, 36(2): 333–354.
- BOSSWICK, W., HECKMANN, F. (2006): Integration of migrants: Contribution of local and regional authorities. European Foundation for the Improvement of Living and Working Conditions, Dublin.
- Cizinci 2010: Cizinci v České republice 2010. Praha, Český statistický úřad.
- Cizinci 2011: Cizinci v České republice 2011. Praha, Český statistický úřad.
- CSU (2004): [online]. [cit. 21.07.2014]. Available at: [http://notes3.czso.cz/csu/2003edicniplan.nsf/o/4120-03-casova\\_rada\\_1961\\_2001-2\\_\\_rozmisteni\\_obyvatelstva](http://notes3.czso.cz/csu/2003edicniplan.nsf/o/4120-03-casova_rada_1961_2001-2__rozmisteni_obyvatelstva)
- CZSO (2013): Cizinci v České republice 2013. Praha, Český statistický úřad.
- CZSO 2018: [online]. Available at: [http://www.czso.cz/csu/cizinci/4-ciz\\_pocet\\_cizincu](http://www.czso.cz/csu/cizinci/4-ciz_pocet_cizincu)
- ČERMÁK, Z. (2004): Migration Aspect of the Suburbanization in the Czech Republic. In: Drbohlav, D., Kalvoda, J., Voženílek, V. [eds.]: *Czech Geographic Society, Palacky University in Olomouc, Olomouc*, pp. 319–328.
- ČERMÁK, Z., JANSKÁ, E. (2011): Rozmístění a migrace cizinců jako součást sociálněgeografické diferenciaci Česka. *Geografie*, 116(4): 422–439.
- Demografická ročenka ČR 2010 Praha, Český statistický úřad.
- ELLIS, M., ALMGREM, G. (2009): Local Contexts of Immigrant and Second-Generation Integration in the United States. *Journal of Ethnic and Migration Studies* 35(7): 1059–1076.
- ELLIS, M., GOODWIN-WHITE, J. (2006): 1.5 Generation internal migration in the U.S.: dispersion from state of immigration. *International Migration Review*, 40(4): 899–926.
- ELLIS, M., WRIGHT, R. (1998): The balkanization metaphor in the analysis of US immigration. *Annals of the Association of American Geographers*. 88(4): 686–698.
- EUROSTAT 2018: Population on 1 January by age, sex and broad group of citizenship [online]. Available at: <https://ec.europa.eu/eurostat/data/database>
- FINNEY, N., CATNEY, G. [eds.] (2012): *Minority Internal Migration in Europe*. Ashgate, Burlington.
- FREY, W. H. (1995): Immigration and internal migration “flight” from US metropolitan areas: toward a new demographic balkanization. *Urban Studies*, 32(4–5): 733–757.
- FREY, W. H. (1996): Immigration, domestic migration, and demographic Balkanization in America: new evidence for the 1990s. *Population and Development Review*, 22(4): 741–763.
- GOBILLON, L., SOLIGNAC, M. (2015): Homeownership of immigrants in France: selection effects related to international migration flows. London, Centre for Economic Policy Research. DP10975.
- GURAK, D. T., KRITZ, M. M. (2000): The interstate migration of U.S. immigrants: individual and contextual determinants. *Social Forces*, 78: 1017–1039.
- HALL, M. (2013): “Residential integration on the new frontier: Immigrant segregation in established and new destinations”. *Demography*, 50(5): 1873–1896. Available at: <https://doi.org/10.1007/s13524-012-0177-x>
- HEMPSTEAD, K. (2007): Mobility of the foreign-born population in the United States 1995–2000: the role of gateway states. *International Migration review*, 41(2): 466–479.
- CHAMPION, A. G. (2005): The counterurbanisation cascade in England and Wales since 1991: the evidence of a new migration dataset. *Revue Belge de Géographie*, 1–2: 85–101.
- JANSKÁ, E., ČERMÁK, Z., WRIGHT, R. (2014): New Immigrant Destinations in a New Country of Immigration: Settlement Patterns of Non-natives in the Czech Republic. *Population, Space and Place*. 20(8): 677–767.
- JANSKÁ, E., BERNARD, J. (2015): Koncentrační či dekoncentrační procesy? Faktory ovlivňující vnitřní migraci imigrantů. *Geografie–Sborník České geografické společnosti*, 120(4): 585–602.
- KING, K. M., NEWBOLD, K. B. (2007): “Internal migration dynamics of a Canadian immigrant gateway: Toronto as an origin, way-station and destination between 1991 and 2001.” *Canadian Journal of Regional Science* 30(2): 243–262.
- KRITZ, M. M., NOGLE, J. M. (1994): Nativity concentration and internal migration among the foreign-born. *Demography*, 31(3): 509–524.
- LI, W. (1998): Anatomy of new ethnic settlement: the Chinese ethnoburbs in Los Angeles. *Urban Studies*, 35: 470–501.
- LEY, D. (2007): Countervailing immigration and domestic migration in gateway cities: Australian and Canadian variations on an American theme. *Economic Geography*, 83: 231–254.
- MALHEIROS, J. (2012): *Immigrants’ Residential Mobility, Socio-ethnic Desegregation Trends and the Metropolises Fragmentation Thesis: The Lisbon Example*. In: Finney, N., Catney, G. [eds.]: *Minority Internal Migration in Europe* (pp. 65–88). Ashgate, Burlington.
- MASSEY, D. S. (1985): Ethnic residential segregation: a theoretical and empirical synthesis. *Sociology and Social Research*, 69: 615–350.
- MUSTERD, S., VAN KEMPEN, R. (2009): Segregation and housing of minority ethnic groups in Western European cities. *Tijdschrift voor Economische en Sociale Geografie*, 100(4): 559–566.
- NEWBOLD, K. B. (1996): Internal migration of the foreign-born in Canada. *International Migration Review*, 30(3): 728–747.
- PORTES, A., ZHOU, M. (1993): The new second generation: segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science*, 530: 74–96.
- PORTES, A., RUMBAUT, R. G. (2001): *Legacies: The story of the immigrant second generation*. Oakland, University of California Press.
- PŘÍDALOVÁ, I., HASSMAN, J. (2018): Immigrant groups and the local environment: socio-spatial differentiation in Czech metropolitan areas. *Geografisk Tidsskrift–Danish Journal of Geography*, 118(1): 72–87.
- PŘÍDALOVÁ, I., OUŘEDNÍČEK, M. (2017): Role zahraniční migrace v měnící se sociálně prostorové diferenciaci Prahy. *Rural and urban sociology, Migration Studies*, Praha, Sociologický ústav AV ČR.
- RECANO-VALVERDE, J., LUKEN, V. (2012): The Internal Migration of Foreign-born Population in Southern

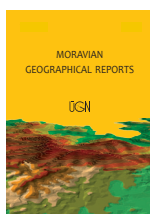


- Europe: Demographic Patterns and Individual Determinants. In: Finney, N., Catney, G. [eds.]: *Minority Internal Migration in Europe* (pp. 239–262). Burlington, Ashgate.
- REHER, D., SILVESTRE, J. (2009): Internal migration patterns of foreign-born immigrants in a country of recent mass immigration: evidence from new micro data for Spain. *International Migration Review*, 43(4): 815–849.
- REHER, D., SILVESTRE, J. (2011): Internal migration patterns of foreign-born immigrants in Spain. A study based on the National Immigrant Survey (ENI-2007). *Revista internacional de sociología*, 69(1): 167–188.
- ROSENBAUM, E., FRIEDMAN, S. (2004). Generational patterns in home ownership and housing quality among racial/ethnic groups in New York City, 1999. *International Migration Review*, 38(4): 1492–1533.
- SILVESTRE, J., REHER, D. (2012): The internal migration of immigrants: differences between one-time and multiple movers in Spain. *Population, Space and Place*, 20(1): 50–65.
- SIMPSON, L., FINNEY, N. (2009): Spatial Patterns of Internal Migration: Evidence for Ethnic Groups in Britain. *Population, Space and Place*, 15(1): 37–56.
- STILLWELL, J., HUSSAIN, S. (2008): Internal migration of ethnic groups in England and Wales by age and district type. Working Paper 08/2. Leeds, School of Geography, University of Leeds.
- STILLWELL, J. (2010): Ethnic population concentration and net migration in London. *Environment and Planning A*, 42(6): 1439–1456.
- SÝKORA, L. et al. (2015): Metodika identifikace lokalit rezidenční segregace. Praha, Univerzita Karlova v Praze, Přírodovědecká fakulta, Multikulturální centrum Praha.
- SÝKORA, L. et al. (2016): Soužití v městské čtvrti: majorita a Vietnamci v Praze-Libuši. *Sociologický časopis*, 52(4): 475–503.
- TAMMARU, T., KONTULY, T. (2011): Selectivity and destinations of ethnic minorities leaving the main gateway cities of Estonia. *Population, Space and Place* 17: 674–688.
- UHEREK, Z. (2003): Cizinecké komunity a městský prostor v České republice. *Sociologický časopis / Czech Sociological Review*, 39(2): 193–216.
- UHEREK, Z. (2011). „Migrace a postmigrační kontaktní situace z antropologické perspektivy“. In: Scheu, H.: *Migrace a kulturní konflikty* (pp. 256–263). Praha, Auditorium.
- VAN KEMPEN, R., OZUEKREN, A. S. (1998): Ethnic segregation in cities: new forms and explanations in a dynamic world. *Urban Studies*, 35(10): 1631–1656.
- VAN GENT, W., MUSTERD, S. (2012): Residential location and housing moves of immigrants and natives in the Amsterdam metropolitan context. *Minority internal migration in Europe*.
- VERTOVEC, S. (2007): "Super-diversity and its implications." *Ethnic and Racial Studies*, 30(6): 1024–1054. Available at: <https://doi.org/10.1080/01419870701599465>
- Vnitřní stěhování cizinců v krajích ČR – v letech 2003–2008. [online] Praha: Český statistický úřad [cit. 13.3.2010] Available at: [http://www.czso.cz/csu/cizinci.nsf/t/420044445C/\\$File/c02r04.pdf](http://www.czso.cz/csu/cizinci.nsf/t/420044445C/$File/c02r04.pdf)
- WRIGHT, R. A., ELLIS, M., REIBEL, M. (1997): The linkage between immigration and internal labour migration in large metropolitan areas in the United States. *Economic Geography*, 73(2): 234–254.
- WRIGHT, R. A., ELLIS, M. (2000): Race, religion and the territorial politics of immigration in the US. *International Journal of population geography*, 6(3): 197–211.
- ZORLU, A., MULDER, C. (2008): "Initial and subsequent location choices of immigrants to the Netherlands." *Regional Studies*, 42: 245–264. Available at: <https://doi.org/10.1080/00343400601145210>
- Život cizinců v ČR (2010): [online]. [cit. 11.1.2011] Available at: <http://notes2.czso.cz/csu/2010edicniplan.nsf/p/1118-10>

**Please cite this article as:**

JANSKÁ, E., BERNARD, J. (2018): Mobility and the assimilation of immigrants: Variations in migration patterns of Ukrainians and Vietnamese in the Czech Republic. *Moravian Geographical Reports*, 26(4): 244–254. Doi: 10.2478/mgr-2018-0020.





# Longitudinal and spatial perspectives on the mismatch of tertiary educated migrant workers in the Czech labour market: The case of Ukrainians

Ondřej VALENTA<sup>a\*</sup>, Dušan DRBOHLAV<sup>a</sup>

## Abstract

*The topic of an education-occupation mismatch of tertiary educated migrant workers in receiving countries is an important issue in contemporary research in international migration, especially in the context of growing international economic competition. In this article, we analyse the level of mismatch of tertiary educated migrant workers in the Czech labour market, with a particular focus on Ukrainian workers. Using a unique set of statistical data, several conclusions can be drawn from a longitudinal approach, as well as multiple regression analysis in order to identify possible determinants of the mismatch at a district level. First, the mismatch of tertiary educated migrants does exist and is growing over time. Second, it seems that the level of mismatch is higher in economically progressive districts with higher numbers of qualified domestic and foreign workers, which creates a higher level of competition in the labour market. As a result, a relatively higher share of tertiary educated migrant workers end up over-educated in professions they find in the secondary labour market in these districts. Using the example of Ukrainians, the progression of tertiary educated migrants into the Czech labour market over time faces rather limited vertical mobility, with a slight progression to more skilled occupations. This can be related to the complexity of factors from individual to institutional levels of analysis.*

**Keywords:** educational mismatch, labour market, foreign employment, Ukrainians, Czech Republic

**Article history:** Received 28 March 2018, Accepted 8 November 2018, Published 31 December 2018

## 1. Introduction

International migration driven by economic motives dominates other types of migration. Both “pushes” and “pulls” in countries of origin and destination come into play. In fact, economic migration has been and remains an everyday experience of past, current, and likely future eras – in all parts of the world. While “from the late 19<sup>th</sup> to the early 21<sup>st</sup> century, skilled workers have been a major dynamic in migration” (Kuptsch, 2013, p. 2757), most international labour movements currently occur at the high and low ends of the employment spectrum.

Nevertheless, international migration of skilled workers gradually has gained more importance by being perceived as a facilitator of economic growth, promoting international competitiveness and innovation performance in destination countries (Saxenian, 2006; Cerna, 2016). Not all skilled human capital on the move is finally used. With the exception of a privileged class of top, highly educated and skilled expert migrant employees (“the best of the best”) and very talented

(but often also rich) entrepreneurs, some well-educated and skilled immigrants face a very difficult and rather unfriendly environment in the local labour markets of destination countries. Skilled immigrants enter different sectors of the host labour market and are forced to choose between different career paths (Liversage, 2009), often in low-status, low-paid, deskilled positions or unemployment (Man, 2004).

In this paper, we will draw upon the complicated environment for skilled immigrants entering host labour markets, as well as the currently scarce research aimed at the analysis of educational mismatch of migrant workers in the Czech labour market. The most relevant studies in this area are that of Leontiyeva (2012), which concluded that the risk of being over-educated grows with increasing levels of education, and of Valenta and Drbohlav (2018), which revealed different rates of educational mismatch across selected citizenship groups due to particular forms of integration strategies into the Czech labour market. We intend to provide insights into the group of migrant

<sup>a</sup> Department of Social Geography and Regional Development, Faculty of Science, Charles University in Prague, Czech Republic (\*corresponding author: O. Valenta, e-mail: [valenta1@natur.cuni.cz](mailto:valenta1@natur.cuni.cz))

workers at the “highest risk”, and examine the level of educational mismatch among tertiary educated (highly skilled) migrant workers in greater detail.

In particular, we will also focus on Ukrainian workers as representatives of traditional Eastern European migrant workers and, at the same time, the largest third-country citizenship group (see Section 2). Due to its size, the Ukrainian diaspora in the Czech Republic is composed of individuals with various educational and professional backgrounds and, as such, it represents an excellent “lab” for studying the education-occupation mismatch of tertiary educated migrant workers. Simultaneously, in comparison with other selected migrant workers’ groups, Ukrainians face an even higher risk of being over-educated, resulting especially in their over-employment in a limited number of industries with prevailing lower skill level occupations (Valenta and Drbohlav, 2018). At the same time, we consider the spatial manifestation of the education-occupation mismatch to be an equally important issue, having significant implications on integration, social or regional development policies. Considering the extensive international research in this field, the spatial organisation of the mismatch has rarely been a subject of research inquiry.

For the first time, a unique set of anonymised individual data on foreign employment in the Czech Republic allows for a comprehensive analysis and assessment of the educational mismatch by adopting the following approaches:

- i. a longitudinal approach, allowing us to assess migrants’ different trajectories of labour market succession over time; and
- ii. a macro-analytical perspective, dealing with aggregate characteristics of individual migrants in a broader structural environment, within particular region-specific differences.

Based on these approaches, our paper will seek answers to the following inquiries:

- we will verify the results of qualitative insights (e.g. Valenta, 2015; Leontiyeva, 2012) as to whether there is a mismatch between the migrant employees’ attained (tertiary) and required education in their occupations in the Czech labour market, with a special focus on Ukrainian employees;
- we will test whether the trajectories of Ukrainian tertiary educated migrant workers in the Czech labour market developed over time follow the expectations of theoretical approaches derived from previous research; that is, whether Ukrainian workers eventually improve their position in the labour market and decrease their educational mismatch; and
- using a macro-level approach, we will test whether the level of educational mismatch at the regional level is associated with specific opportunities in regional labour markets and/or by other factors related to aggregate migrant characteristics.

After this introduction, we frame the topic with a description and explanation of the Czech migration ‘reality’, followed by a review of existing research on over-qualification and an outline of a relevant theoretical framework. A presentation of the sources of the statistical data is then followed by a description of the methodological approaches used here. A more general picture of educational attainment and the

employment of skilled foreign migrant workers in the Czech labour market follows, with a special focus on Ukrainian workers, providing a basis for the consequent assessment of the level of mismatch. The section focusing on a longitudinal approach provides further insights through an analysis of the individual progresses of skilled Ukrainian workers in the Czech labour market over time (between 2009–2016); subsequently, a multiple regression analysis of the mismatch (at the district level) seeks to identify its possible determinants. The findings are summarised and discussed in the concluding section of this article.

## 2. Czech migration context

In the Czech Republic, economic migration has always had a significant impact on the structure of the labour market and overall national economic performance after 1989. The Velvet Revolution, which occurred in the Czech Republic at the end of 1989, signalled the start of robust societal transition in the entire society. Since then, along with political, social and economic transformation, steady streams of international migration (with its emigration and immigration flows and stocks) appeared and started functioning. This was further reinforced by the rapid integration of the Czech Republic into “Western structures”, after becoming a member of NATO, the European Union (EU) and entering into the Schengen Agreement. The Czech Republic gradually changed from an emigration and transit country to an immigration country (Drbohlav, 2011), and quickly acquired migratory patterns (in terms of its quantitative parameters, the conditionality of migration and the character of its migration policies and practices) resembling those typical of many advanced immigration countries (Drbohlav, 2002).

In a broader comparative perspective, the Czech Republic represents an exception within the post-socialist countries of Central and Eastern Europe due to its low emigration but mainly massive immigration stock (in absolute terms). The numbers of immigrants have been increasing over time, reaching some 78,000 in 1993, 240,000 in 2003, 439,000 in 2013 and 524,000 in 2017 (in 2017, 42% came from the EU and males represented 56%). Two main migratory types have dominated: economic migration and migration based on family ties. By contrast, for example, asylum seeker/refugee inflows have always been marginal. Despite many challenges, the Czech Republic has developed probably the most systematic way of migration and integration management (including involvement of the non-governmental sector): for further details, see Drbohlav et al., 2010; Drbohlav, 2012; Górný, 2017).

The increasing number of international migrants in the Czech Republic, and the growth of their diversity in terms of their citizenship and integration practices, have resulted in a wide range of different forms of integration into the Czech labour market. It is shaped by individuals’ and migrant groups’ efforts as well as by the dynamics of specific economic developments in the Czech Republic, captured in this article by the selected time-period (2009–2016)<sup>1</sup>.

The most numerous immigrant group has been Ukrainians (117,000 in 2017), followed by Slovaks (112,000), Vietnamese (60,000) and Russians (37,000) (Czech Statistical Office, 2018). It is not at all by accident that Ukrainians

<sup>1</sup> The Czech economy was heavily impacted by the 2009 global economic crisis. This period was followed by a slight recovery leading to robust economic progress in 2013 – continuing through 2016, and beyond.

dominate over other immigrants in the Czech Republic. First, there is a long tradition of Czech-Ukrainian relations dating back to the Austro-Hungarian Monarchy. There are, however, other important “pushes” that attract Ukrainians to the Czech Republic; these are common Slavic roots and culture, similar language and geographical proximity. The pushes were further reinforced by a rather unstable social and economic context in the Ukraine, a very low standard of living, high prices and a lack of well-paid jobs. The pushes have been complemented by “pulls” – a strong demand for a cheap and flexible (and mainly low-skilled) labour force in the Czech labour market (Drbohlav and Valenta, 2014a). Hence, Ukrainians came and worked mostly as employees in the secondary labour market, predominantly in construction, services or agriculture, while chiefly taking unskilled, low paid, labour-intensive and not intellectually demanding jobs.

### 3. Theoretical framework

The concept of over-education is closely connected to the more general term over-qualification. In ORU<sup>2</sup>, however, these concepts are ambiguously defined. For the purposes of this article, the term can – in a simplified way – be defined as a state in which an individual possesses a higher level of education than is required by their job position, or requirements connected with acquiring a new job (Koutná, 2016; Green and Zhu, 2010). On the basis of a literature review, it seems that over-qualification, discrimination, and inequality have become inseparable parts of immigrants’ working activities in the labour markets of many destination countries (see the examples in: Chiswick and Miller, 2009; Aleksynska and Tritah, 2013; Spoonley, 2006; Nowotny, 2016; McDonald and Valenzuela, 2016; Garrido and Codó, 2017; Gupta and Man, 2014; Lagana, 2011; Man, 2004; Spielvogel and Meghnagi, 2018). Though many factors may be behind this situation, Ho and Alcorso (2004) and others (e.g. Mattoo, Neagu and Özden, 2008) write about a ‘transferability gap’ that often prevents migrants from being fully rewarded in destination countries for their “overseas-gained skills and work experience”. The transferability gap means that migrants, including highly-skilled workers, often suffer from downward occupational mobility. Chiswick and Miller (2009) also state that some knowledge and capabilities are hard to transfer internationally due to employers’ frequent discounting of foreign credentials and training (Batalova and Fix, 2018). This also includes difficulties in the recognition of foreign qualifications and diplomas (Trevena, 2013).

Immigrant over-qualification is primarily studied in more developed immigration countries. Over-qualification studies, after migrants have returned to their country of origin, represent interesting research exceptions and challenges (Anda and Nordman, 2017). A migrant’s success in the labour market of the destination country, including utilisation of their attained education, depends on many different factors. For example, Weller (2017) stresses the intertwined effects of migrants’ “region of origin, gender and migration pathways”. Viewed from another angle, innate qualities, personality traits, newly adopted capabilities and experience of a local culture (localised knowledge) are highlighted (McDonald and Valenzuela, 2016; Nowotny, 2016; Aure, 2013). Also, language skills, as one of the key factors of a possible improvement of one’s position in the labour

market, are accentuated (Cerna, 2016; Spoonley, 2006; Sert, 2016; Iguchi, 2012). At the level of individual migrants, over-qualification is caused by their specific migration aims, motives and strategies in the labour market. Some foreign workers may pursue a professional career, while others may take on the most easily accessible and best paid employment to earn a sufficient sum of money for a given purpose (Trevena, 2013).

Over-qualification among immigrants is also influenced by the economic conditions in the destination country, including the impacts of business cycles, a lack of suitable jobs in the labour market, levels of unemployment, the overall scale of grey economy and the effect of institutions operating in the labour market (including trade unions) (e.g. Kahanec et al., 2017; Cangiano, 2014; Aleksynska and Tritah, 2013). The characteristics of applied policies also play an important role (Cerna, 2016; Aleksynska and Tritah, 2013; Kuptsch, 2013). Conversely, Kuptsch addresses human capital mercantilism, which is characterised as the rush for more skilled workers, increasing their number without considering the needs of the labour market (Kuptsch, 2013). This “no-policy policy” can easily lead to the deskilling of migrants and “brain waste” (Kuptsch, 2013, p. 2758). Also related to policy, Sert (2016) and Kuptsch (2013) address the above-mentioned issues regarding accreditation, more specifically, non-recognition of qualifications connected either to a particular education or profession. Furthermore, the role of intermediaries (whose operations are also policy-based) mediating relationships between employers and current and future employees, has been pinpointed (e.g. Harvey et al., 2018).

Other studies examine further the role of education and training courses for overcoming the mismatch between education levels that are required and those that are offered (Bussi and Pareliussen, 2017). Moreover, access to local non-migratory social networks has been highlighted (Aure, 2013), including the function of social networks (Cerna, 2016; Webb, 2015; Plöger and Becker, 2015; Chort, 2017; Munshi, 2003). Recently, more attention is being devoted to the over-qualification mismatch in the labour market and its specificities in relation to gender (Bender and Roche, 2013; Arbeit and Warren, 2013; Aure, 2013; Raghuram and Kofman, 2004; Webb, 2015; Gupta and Man, 2014; Pecoraro, 2011; Man, 2004).

In the Czech context, however, research on the educational mismatch of foreign workers has rarely taken place. The pioneer study in this field is presented by Leontiyeva (2012), who concluded that non-EU migrant workers face a considerably higher level of mismatch in the Czech labour market than migrants from EU countries. According to her research, the determinants of the likelihood of educational mismatch are personal factors (age, sex and family), personal experience (length of stay, current occupation and work history at home), and national origin, which has been partly confirmed by the research of Valenta (2015) for Ukrainian workers.

Some of the above-mentioned determinants of the educational mismatch of foreign workers do indeed have an implicit spatial dimension, in the sense that they create particular arrangements or patterns in space. Nevertheless, no explicitly geographical inquiries focusing on educational mismatch and its determinants in space were found in our

<sup>2</sup> Here, we follow an acronym posted by Li (2013) standing for “Overeducation, Required education and Undereducation literature”.



research. It appears that the research activities have arrived only at the point of examination of the spatial distribution of (highly skilled) migrants, which we are drawing upon in this article: see, for example, Gross and Schmitt, 2010; Docquier et al., 2013; Nowotny, 2016; Aure, 2013; Musterd et al., 2016, to name a few international representatives; and Schováňková (2013), as a Czech pioneer in this field.

Various theories and concepts aim at conceptualising the above-mentioned research findings on the over-qualification or over-education phenomenon. Despite the fact that the theories or concepts are often applied, a more compact picture or review is still missing. Due to the exploratory character of this article and its focus on tertiary educated Ukrainian workers, our intention is not to test the validity of the concepts, but rather to present the most relevant ones, highlighting selected aspects of the issue and linking them to our findings.

When focusing on highly skilled migrants, one cannot avoid studying the manifestations and impacts of the brain drain, brain gain, brain waste or brain exchange phenomena (Ness, 2013; Docquier and Sekkat, 2006; also for example, Vavrečková et al., 2008; Rakovcová, 2017). Broadly defined, analyses of migrants' human capital contribute to enriching our knowledge in the field of migratory gains and losses. For that matter, it is the area that requires rich and varied data arising from empirical research (e.g. Nijkamp, Poot and Sahin, 2012; Collier, 2013). Nevertheless, in this article, we borrow Chiswick and Miller's (2009) characterisation, in a general sense, pinpointing three basic theoretical/conceptual perspectives:

1. Search and match theory explains the given mismatch as a consequence of imperfect information in the labour market. This mismatch is seen as temporary when migrants take up jobs for which they are overeducated when entering the labour market for the first time. It fades over time, however, as migrants climb the social ladder and their positions gradually begin to match their original educational level (see more in Chiswick and Miller, 2009);
2. Human capital theory recognises the existence of several alternative attributes of human capital, including formal schooling, job experience and skills acquired through formal on-the-job training; these could be substitutes in many jobs (Chiswick and Miller, 2009, p. 163). The theory acknowledges the possibility of using various tactics, for example, positive prospects for the future at the expense of an intentionally difficult start. The theory also pinpoints difficulties related to the transferring of human capital transnationally, namely formal schooling and work experience. Such transfers may lead to situations where immigrants substitute schooling for (non-recognised) labour market job experience. Moreover, the theory also discusses over-education and its inverse, under-education. Generally, a diminishing mismatch between the migrant's attained and required educational level in the labour market is connected with the length of stay in the destination country. Commonly, the length of stay in the destination country correlates to a diminishing mismatch between the migrant's attained and required educational level in the labour market; and

3. Technological change theory accepts that there is a tendency to gain skills and knowledge attained through schooling which then allows one can keep up with technological progress in a given country. Those who have recently obtained their education are considered more educated when compared to those who attended the same schools earlier. Furthermore, newly educated migrants from less developed countries are often considered more over-educated in the labour markets of destination countries than migrants from more developed Western countries. The importance of this theory increases in technologically dynamic economies. Naturally, the theory depends on technological development in both the country of origin and the country of destination.

As seen above, a migrant's over-qualification (including over-education) is connected to their initial entrance into a labour market. Nevertheless, this situation should gradually disappear over time (Chiswick and Miller, 2009; Anda and Nordman, 2017; Aleksynska and Tritah, 2013). On the other hand, there are also opinions adhering to the claim that "the longer the stay, the smaller the immigrant's chances of ever moving up the occupational (hence, also the educational) ladder" (Kuptsch, 2013, p. 2758). This assertion is in harmony with macro-level historical-structural theoretical approaches, or Marxist theories of migration: e.g. Vogel (2013) and Massey et al. (1993). In such a perspective, there is a focus on the exploitation of migrants in rich destination countries and their exposure to various constraints, limits and barriers. In fact, migrants are considered mere agents of social change, carrying the necessary attributes of labour to satisfy the abstract requirements of the general law of capitalist accumulation. As a corollary, migrants cannot change their inferior positions, including those positions in labour markets<sup>3</sup>.

#### 4. Data and methodological approach

Based on our review, quantitative approaches using various types of regression analyses primarily dominate research in the field of migrant over-qualification and over-education. On the other hand, qualitative studies have also begun to emerge. At a micro/individual level, such studies enrich knowledge in their attempts to better understand the conditionalities, mechanisms and impacts of immigrants' over-education, as well as the (non-)utilisation of their human capital, and more broadly, the international migration movements of highly-skilled persons (e.g. Rye and Andrzejewska, 2010; Aure, 2013; Raghuram and Kofman, 2004; Webb, 2015; Sert, 2016; Garrido and Codó, 2017).

The situation in the arena of Czech research is quite the opposite. Qualitative insights into the topic of over-education dominate (Valenta, 2015; Leontiyeva, 2012), whereas quantitative approaches capable of mapping the issue in a representative manner have been absent so far due to the unavailability of proper data.

##### 4.1 Statistical data and limitations of the analysis

In this article, we use the following statistical data on international migrants, bridging this knowledge gap in the Czech research:

<sup>3</sup> One must admit as well that some other conceptual approaches recognize both possible pathways – upward and downward on the social ladder in society – for immigrants, as in segmented assimilation theory (albeit applying this mostly to more complex integration issues of migrant second generations – e.g., Zhou, 1997).



- Data based on residence permits/visas, gathered in the Alien Agenda Information System (AICS), managed by the Ministry of the Interior (Drbohlav and Lachmanová-Medová, 2009). From this source, we use the following indicators: citizenship and type of residence (permanent and temporary); and
- Data on foreign workers and their employment status (i.e. all Czech and foreign economically active persons registered at the local and regional public employment service offices). These data will serve as the primary source of information in this article for both macro-level and longitudinal approaches. The management of the data and operation of the database OKpráce has been outsourced by the Ministry of Labour and Social Affairs of the Czech Republic (CR) to a private company, OKsystem<sup>4</sup>.

The data on international migration are compared with the respective data describing educational attainment of the Czech labour force and its structure of employment in the Czech labour market. Finally, for the purpose of identification of spatial differentiation and determinants of the educational mismatch, relevant data describing social and economic performance were collected from various sources at the level of Czech districts. The primary sources of these data are publications of the Czech Statistical Office.

As international migration is a highly complex issue, there are a number of limitations that hinder the ability of the data to capture the migration ‘reality’, and thus preventing us from a straightforward interpretation. Although the data are subject to systematic and gradual development, they are still far from comprehensive.

Most importantly, regulations and legal frameworks significantly impact the resulting nature of economic activities (and the ability of the data to capture it appropriately) by establishing an uneven position for migrant workers in the Czech labour market based on their citizenship as well as type of residence permit<sup>5</sup>. The administrative burden, as well as bribery practices in obtaining employment permits – for example in the case of Ukrainian workers – has led to an increased number of Ukrainian workers in the Czech Republic holding a Polish visa/employment permit (Drbohlav and Jaroszewicz, 2016). Another strategy is to obtain a trade license and become an entrepreneur, as the Czech Act on License Trade does not distinguish between EU/EEA citizens and third country citizens regarding requirements in the procedure of obtaining a trade license and operation in the Czech labour market. This practice can lead to bogus self-employment, known as the Švarc system, which is (albeit illegal now) prevalent (in various “masked forms”) in the Czech context: migrants (but also a large share of the economically active Czech population) are classified as entrepreneurs, but they often, in fact, perform regular employment activities (e.g. Drbohlav and Valenta, 2014a).

Moreover, several databases exist, designed for particular purposes, which are supplied with data from different sources, and are therefore incomparable. Also, regarding the economic activities of immigrants, comparing the numbers among the databases from the three Ministries stated above can lead to misleading conclusions (e.g. Drbohlav and Lachmanová-Medová, 2009; Drbohlav and Valenta, 2014b). In addition, with respect to the type of residence permits of foreign workers, the focus of our analysis only considers mismatch of foreign citizens due to incompatibility of the data, and our analysis was not capable of examining the development of mismatch after a foreign worker acquires Czech citizenship<sup>6</sup>.

The nature of the analysed time-period (2009–2016) is also thought to have an effect on the outcomes of our research inquiry. The nature of economic development throughout the period (see above: Section 2) had an inevitable impact on the dynamics of the labour market. The level of Czech districts as a principal reference area that we used in our analyses represents another limitation. The district level already has a considerable internal heterogeneity<sup>7</sup>.

## 4.2 Methodological approach

We believe that the combination of the macro-level and longitudinal approaches provides a valuable primary overview of the relationships between factors and processes in the given topic. Nevertheless, in order to acquire a more thorough understanding, additional qualitative approaches at lower levels of abstraction (for example, that of Liversage, 2009), or more sophisticated quantitative space-sensitive models<sup>8</sup>, capable of identifying a range of possible determining factors occurring in different groups of districts, may be further included.

### 4.2.1 Measuring the level of educational mismatch

The literature focused on the mismatch between occupation and education provides several ways of measuring this phenomenon (Groot and Maasen van den Brink, 2000). In this article, the analysis will be based on the job analyst’s method. This method assumes that for each specified occupation there is a recommended minimum level of education. This relationship is generally assessed by a relevant expert (Chevalier, 2003). More specifically, we utilise available data on the educational attainment of migrant workers, as well as the required levels of education connected with certain job positions based on the professional judgement of the labour office authorities.

Levels of education applied in this article are based on a classification of education used by the Czech labour office. This classification is compatible with the International Standard Classification of Education (ISCED, 2011; UNESCO, 2012). In this article, we use a four-group classification, as shown in Table 1.

<sup>4</sup> The Department of Social Geography and Regional Development of Charles University purchased this more-detailed and non-public anonymous individual data file on foreign employment (hereinafter referred to as ‘Internal Data’).

<sup>5</sup> Migrant workers with citizenship of EU countries and European Economic Area countries possess the same legal status as Czech nationals in the labour market, whereas third-country workers are eligible to work only (i) with respect to the situation in local/regional labour markets, and (ii) after undergoing an administrative procedure by applying for an Employee Card, a Blue Card, or for an Employment Permit, prior to entering the territory of the Czech Republic (Ministry of the Interior of the Czech Republic, 2018).

<sup>6</sup> Information such as ‘place of birth’ is included in the census data, but such data do not allow either an examination of the development of an education-occupation mismatch over time, or applying a longitudinal approach.

<sup>7</sup> Due to the nature of the statistical data, it was not possible to perform the analyses at geographical levels lower than the district level.

<sup>8</sup> Such models control for spatial autocorrelation, which is an inevitable part of the analysis of the spatial organization of the phenomena (Spurná, 2008).

Categories of Czech Labour Office		ISCED Classification		Classification used in this article	
Level	Title	Level	Title	Level	Title
A	No formal education	ISCED 0	Pre-primary education	1	No education
B	Incomplete primary	ISCED 1	Primary education	2	Basic education
C	Basic, practical school			3	
D	Lower secondary	ISCED 2	Lower secondary education	4	Secondary education without GCSE
E	Lower secondary vocational			5	
H	Secondary vocational with a certificate			6	
J	Secondary or secondary vocational without GCSE <sup>9</sup> or certificate			7	
K	Complete secondary education			8	
L	Complete secondary with school leaving exam (technical)	ISCED 3	Upper secondary education	9	Secondary education with GCSE
M	Complete education with GCSE	ISCED 4	Post-secondary non-tertiary education	10	
N	Higher technical	ISCED 5	Short-cycle tertiary education	11	Tertiary education
P	Higher technical (conservatory)			12	
R	Bachelor's degree	ISCED 6	Bachelor's or equivalent level	13	
T	Master's degree	ISCED 7	Master's or equivalent level	14	
V	Doctoral degree	ISCED 8	Doctoral or equivalent level	15	

Tab. 1: Comparison of classifications of education (Note: The educational levels 1–15 in column 5 refer to levels A–V in column 1). Source: UNESCO 2012, internal data

The availability of individual data allows for a more detailed insight into the level of mismatch, or more specifically, the waste of qualification as a difference between the educational attainment (highest education) and the level of education required by certain occupations or job positions (i.e. mismatch = [attained education – required education]). For this purpose, levels of education were transferred into a numerical scale, 1–15 (1 = No education, and 15 = Doctoral degree, see Tab. 1). The extent of mismatch can then be measured at the level of individual migrants as a relative distance between two levels of education in the scale. The resulting values indicate the following:

- Positive values (> 0) indicate that the level of attained education of a migrant worker is higher than the level of education required by a certain occupation, and thus represent an “over-educated” worker;
- (= 0): the level of attained education of a migrant workers corresponds to the level of education required by a certain job position (i.e. “well-matched” relationship); and
- Negative values (< 0) indicate that the level of attained education of a migrant worker is lower than the level of education required by a certain occupation; the migrant worker is thus “under-educated”.

The distance for each migrant worker can consequently be aggregated into average values per skill intensity of a certain job position (ISCO), educational level (ISCED), or a region.

The levels of education classified by ISCED can consequently be referred to a more “applied” classification of level of skills connected with certain job positions. The International Standard Classification of Occupations

(ISCO) is an international classification, and a tool for organising jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job (International Labour Organization, 2010). Based on the work of Leontiyeva (2012), the ISCO classification can be divided into three major groups of occupations according to skill level, each with a respective required general level of education, taking into account all of the shortcomings that are associated with this simplified transformation (for further details, see Leontiyeva, 2012).

The character of economic activities is assessed through the sectors of performance in which both Czech and foreign workers are active. For this purpose, the internationally compatible approach of the Statistical Classification of Economic Activities (NACE) (Eurostat, 2008) was fully adopted.

#### 4.2.2 Longitudinal approach

The individual data on the economic activities of migrant workers allows us to assess their different trajectories in the labour market over time, from 2009 to 2016 in our particular case. In this study, we focus on tertiary educated Ukrainian workers. According to the data, from the pool of an estimated 2,100 tertiary educated Ukrainian workers in 2009 to more than 5,000 in 2016, there were 847 individuals active in the Czech labour market throughout the entire period, and this represents a convenient sample of our inquiry.

When assessing the possible trajectories, we follow a visual design, as well as the following typology of paths of labour market (non-)incorporation of skilled migrants at the individual level by Liversage (2009):

<sup>9</sup> GCSE refers to General Certificate of Secondary Education, a school-leaving exam/A-level examination (Leontiyeva, 2012; Czech Statistical Office, 2016a).

- Path of re-entry: A migrant enters into his/her former profession;
- Path of ascent: A migrant enters into lower-level work and moves to higher-level occupations over time;
- Path of re-education: A migrant enters higher-level work after obtaining a new level of education in a host country;
- Path of re-migration: A migrant leaves host country for the country of origin or for another immigrant destination; and
- Path of marginalisation: A migrant remains in unemployment or in low-level positions.

We are fully aware that this typology does not provide a comprehensive picture of the trajectories that migrants may undertake in the host country labour markets, as it was derived from a qualitative study focused on a limited number of selected migrant workers. For this reason, the typology is not capable of reflecting, for example, the position of a migrant within their life-cycle (Rakovcová, 2017), or the different ethnic affiliations of migrant workers and how these workers interact in broader social and economic contexts, resulting, for example, in implicit discriminatory practices (and their progress over time) towards particular ethnic/citizenship groups. As a result, the typology does not include, for example, a possible path where a migrant worker enters the labour market in a profession reflecting their qualifications, eventually moves downwards or becomes unemployed, and then starts again in low-level positions.

#### 4.2.3 Macro-level approach

In order to identify determinants of the mismatch of tertiary educated migrant workers of both Ukrainians and the total number of tertiary educated migrant workers at the district level (i.e. the dependent variables), correlation and multiple regression analysis is performed, at the level of 76 Czech districts<sup>10</sup> (NUTS 4 level), by using SPSS Statistics 24.0 software. As there is a variety of potential determinants that can have an impact on educational mismatch, the selection of the appropriate independent variables was carried out on the basis of the following criteria:

- Inclusion criterion: possible social, economic, demographic as well as geographical determinants/variables describing the nature of districts, and aggregate migrant workers' characteristics. Some of them have been used in previous regression analyses with a similar focus (e.g. Schováňková, 2013; Nowotny, 2016);
- First exclusion criterion: high level of correlation (i.e. the value of the Pearson correlation coefficient is  $> 0.751$  or  $< -0.751$ ) between two variables, leading to exclusion of redundant variables. The resulting set of nineteen independent variables including their description is presented in Table 2. The first group of variables describes the basic aggregate migrant characteristics – age, gender, and length of stay. The economic environment in Czech districts is described by variables focusing on progressive and qualitative aspects, such as value-added production or investment. Other sets of variables bring together selected characteristics of the population in districts in terms of

their citizenship structure and the structure of foreign employment. Labour markets in districts are characterised by their employment structure according to basic economic sectors, and by foreign employment through employment agencies. Geographical and migratory characteristics are represented by variables describing a district's place within the regional hierarchy, horizontal position (how peripheral or exposed districts are) in the Czech Republic, as well as their migratory attractiveness; and

- Second exclusion criterion: the level of correlation (measured by the Pearson coefficient) between a dependent and an independent variable being within the interval of 0.200 and  $-0.200$ . In this way, only variables where two-dimensional correlation analysis indicated a significant relationship and unambiguous trend were included.

As a result, each dependent variable acquired its own set of possible explanatory variables (eight for overall mismatch and ten for Ukrainian mismatch – many of which were relevant for both dependent variables). The relevance of the variables was then tested in a multiple regression analysis. Specifically, we adopted a “stepwise” regression analysis: at each step of the procedure, a variable is considered for addition to, or subtraction from, the set of explanatory (independent) variables.

## 5. Results: Educational attainment and the skill-intensity of migrant workers' jobs

What is the educational structure of the migrant workers in the Czech Republic? Unfortunately, data on immigrants' education in general is very rare and not well explored (Leontiyeva, 2012). Based on the internal data of MLSA concerning educational attainment<sup>11</sup> in 2016, however, from the total number of approximately 380,000 migrant workers in job positions in the Czech Republic, the highest share (36%) is taken by lower secondary education workers (i.e. secondary education without GCSE). Migrant workers with basic education represent almost one third of all foreign employees in the Czech labour market. Tertiary educated foreign workers formed 18% of foreign employees (see Fig. 1).

When looking at the development of migrant educational structure over time, the overall trend towards lower levels of education has been noticeable since 2011, with a constant increase in the percentage of workers with basic education and a decreasing percentage of workers with higher levels of education. On the contrary, the development of the educational structure was the opposite from 2009 to 2011, mainly due to the consequences of the implementation of restrictive migration measures<sup>12</sup> put in force in response to the economic recession caused by the global financial crisis. It is thus apparent that the impact of the economic recession had a greater impact on semi-skilled and unskilled migrant workers. The decreasing trend in the educational quality of migrant workers since 2011 has been the opposite to the trends in Czech employment.

<sup>10</sup> The district of Mladá Boleslav was excluded from the list of regions, due to outlier values in Business Expenditure on Research and Development and Value-added.

<sup>11</sup> Unfortunately, no data are available indicating the thematic focus of the education of foreign workers.

<sup>12</sup> For example, these measures were the temporary interruption of issuing visas to citizens from selected important source countries (Mongolia, Ukraine, Moldova, Vietnam and Thailand). Consequently, the issue of visas and residence permits has been maintained at limited numbers. Another measure was the introduction of the project of “Voluntary returns”, with the aim of assisting foreign workers who had lost their jobs, to return to their home countries (Drbohlav et al., 2010).

			Descriptive statistics	
DEPENDENT VARIABLES			Mean	St. Dev.
Level of mismatch of tertiary educated migrant workers (at the district level (N = 76) in the Czech Republic)			2.63	1.25
Level of mismatch of tertiary educated Ukrainian workers at the district level (N = 76) in the Czech Republic			4.32	2.08
INDEPENDENT VARIABLES				
Variable	Description	Year	Mean	St. Dev.
<i>Migrants' characteristics</i>				
Age**	Average age of migrant workers at 31.12.2016	2016	41.75	2.01
Sex	Share of male Ukrainian workers of total number of Ukrainian workers	2016	0.67	0.07
Length of stay*	Average number of years of economic activity of migrant workers in the Czech labour market	2016	2.88	0.80
<i>Economic environment</i>				
Number of entrepreneurs**	Number of entrepreneurs per population	2016	0.08	0.01
Value-added	Value-added in selected industries per employment in selected industries	2013	706.6	116.0
Business Expenditure on Research and Development	Business expenditures on research and development per population	2014	2.15	2.38
Foreign direct investment	Two-year average of foreign direct investment (inflow of capital + reinvestment of earnings + inflow of other capital) per population	2014/2015	0.12	0.15
<i>Population structure</i>				
Foreign citizens*	Share of foreign citizens per population	2016	0.03	0.02
Ukrainians* **	Share of Ukrainians on foreign citizens	2016	0.20	0.09
Foreign workers* **	Share of foreign workers on total employment	2016/2011	0.06	0.05
Ukrainian workers	Share of Ukrainian workers on total foreign employment	2016	0.13	0.06
<i>Labour market characteristics</i>				
Tertiary education	Share of tertiary educated population	2011	0.10	0.08
Agency employment* **	Share of foreign employment through agencies (NACE 78) on total foreign employment	2016	0.09	0.08
Share of agriculture**	Share of employment in agriculture on total employment	2011	0.04	0.02
Share of construction industry*	Share of employment in construction industry on total employment	2011	0.07	0.01
Unemployment rate* **	Share of registered unemployed individuals on economically active population	2016	5.24	1.88
<i>Geographical and migratory characteristics</i>				
Geographical position**	Average commute time (vehicular and train transport combined) from a district's capital to all other district capitals, based on ArcGIS Network Analyst approach	2016	2.56	0.44
Migration effectiveness* **	Share of migration turnover on net migration (both national and international migratory movements included)	2016	0.01	0.11
Urbanisation**	Share of inhabitants living in cities on total population in a region	2016	0.63	0.15

Tab. 2: Complete set of variables for the stepwise regression analysis

(Notes: The number of tertiary educated migrant workers at 31.12.2016 in the Czech Republic was 66,212. The number of tertiary educated Ukrainian migrant workers was 5,067 by the same date in the Czech Republic; \*Variables entering the regression model for the first dependent variable, i.e. Level of mismatch of tertiary educated migrant workers at the district level; \*\*Variables entering the regression model for the second dependent variable, i.e. Level of mismatch of tertiary educated Ukrainian workers at the district level)

Sources: Internal data; CNB, 2015; Czech Statistical Office, 2016b; Czech Statistical Office, 2017a; Czech Statistical Office, 2017b; Czech Statistical Office, 2018; Ženka, Pavlík and Slach, 2017; Marada, 2018



When it comes to Ukrainian workers, only 10% of the total population in 2016 (53,942) possess tertiary education. Ukrainians make up the highest share of workers with basic education (49.5%).

Considering the educational structure of migrant workers, how did their educational structure transform into vertical occupational distribution? When compared with the figures of overall Czech employment in 2016, migrant workers tend to cluster more in the lower strata of the labour market (Fig. 2). Primarily due to their less favourable educational structure, migrant workers are over-represented especially in elementary occupations (with over 30%, compared to 5.5% for Czech employment), and in plant and machine operators and assembly jobs (19% vs. 13.7%). The share of skilled jobs (ISCO categories 1–3 marked in variations of green) is indicated as 22% of the jobs performed by migrant workers, compared to nearly 38% carried out by Czech workers. These differences are further accentuated in the case of Ukrainian workers.

During the selected period, the share of professions from the lower rungs taken by foreign migrant workers increased, while the share of skilled occupations decreased. In the case of Ukrainians, the development has not been

that straightforward. With an overall decrease in absolute numbers, the share of Ukrainian workers in elementary occupations has declined. A slight increase in the share of jobs with low skill intensity can, however, be observed among Ukrainian workers since 2015.

### 5.1 Is there a mismatch?

According to the relation between attained education and the skill intensity of the occupation, we consider employment of tertiary educated workers in skilled professions (ISCO 1–3) to be a ‘fair’ education-occupation match. The data reveal that this fair match was achieved by almost 80% of tertiary educated migrant workers in the Czech Republic in 2016 (see Fig. 3), with professionals as the predominant class of employment. With the increasing number of tertiary educated migrant workers in the Czech labour market from 2009, however, we detect a consistent increase in the percentage of tertiary educated migrant workers facing an educational mismatch.

The fair education-occupation match is achieved by approximately 53% of tertiary educated Ukrainian workers (Fig. 4). We can, therefore, state that tertiary educated Ukrainian workers face a higher educational mismatch in

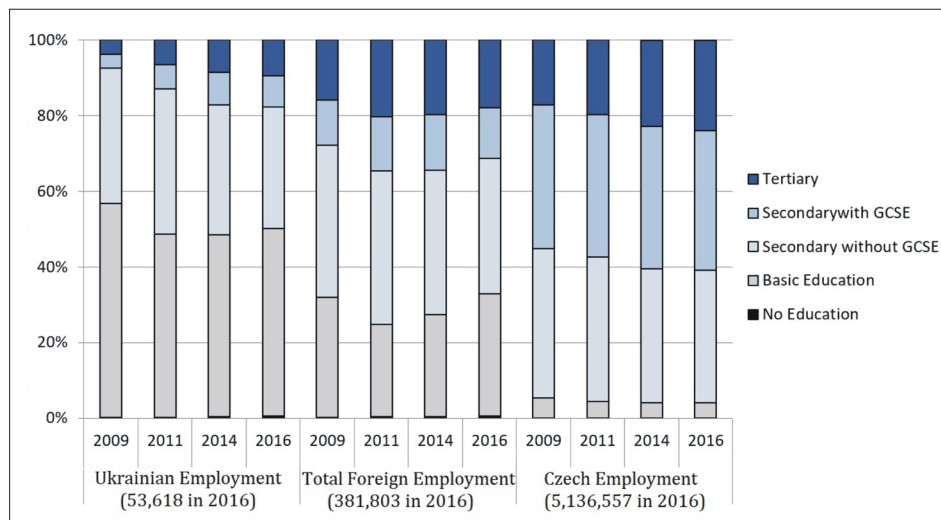


Fig. 1: Development of the educational structure of foreign and Czech employment (2009–2016; The proportions are at 31<sup>st</sup> December of the respective year). Sources: Internal data; Czech Statistical Office (2017b)

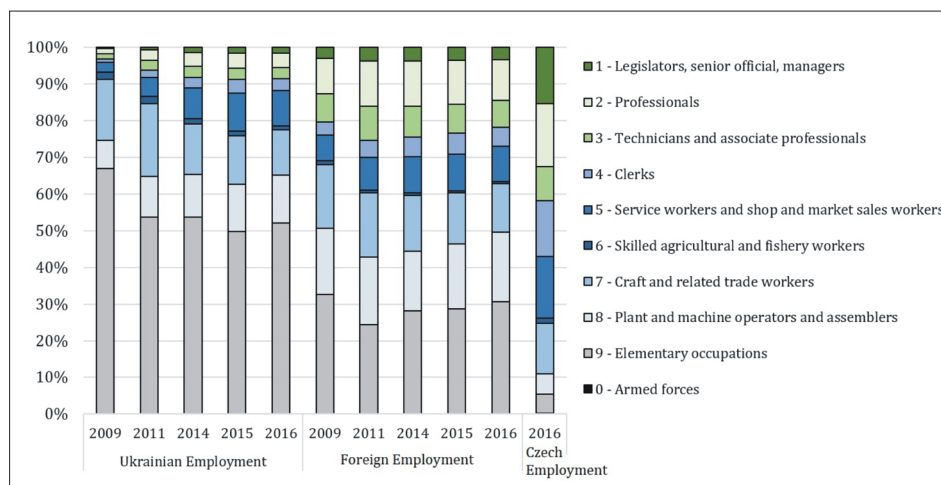


Fig. 2: Development of the occupational status of migrant workers in the Czech Republic (2009–2016; The proportions are at 31<sup>st</sup> December of the respective year) Sources: Internal data; authors' calculations; Czech Statistical Office (2017c)

the Czech labour market when compared to the data for total foreign employment, with a substantial share of employment in elementary (ISCO 9), and service and shop professions (ISCO 5). Moreover, the share of fairly matched tertiary educated Ukrainian workers has been declining since 2011.

When combining the structure of employment of tertiary educated migrant workers across industries, with the skill-intensity of the jobs they perform, we are able to detect several sectors of economic activity in which the waste of their educational attainment is highest in both absolute and relative terms (see Fig. 5).

Nevertheless, at first the figure shows that the dominant sector of employment for tertiary educated migrant workers is in the information and communication industry (J). In this industry, the level of de-skilling is rather low as it consists mainly of skilled jobs. This holds true also in the other main industries of employment of tertiary educated migrant workers, specifically education (P), health and social work (Q), and in professional, scientific and technical activities (M).

Additionally, there are other skill-intensive sectors in which a majority of tertiary educated migrant workers are employed in skilled positions. Nevertheless, the absolute

numbers of these workers are considerably lower. This is the case of migrants employed in the electricity, gas, steam, and air conditioning supply sectors (D), the financial and insurance sectors (K), or public administration and defence (O). Conversely, this Figure depicts industries in which the probability for tertiary migrant workers to become over-educated is relatively higher, producing the highest level of waste of human capital. This is the case in the manufacturing industry (C), sales activities (G) and especially administrative and support services (N). These industries are also important occupational destinations for tertiary migrant workers.

When considering the development of de-skilling within individual industries, the most noticeable aspect is the gradually increasing level of de-skilling in the industries in which the tertiary educated workers are employed most frequently. This holds true especially for administrative and support service activities (N), sales activities (G) and manufacturing industry (C). In these industries, the rate of increase of the de-skilling is most obvious.

When assessing the level of educational de-skilling among tertiary educated Ukrainian workers across industries (Fig. 6), one can note a higher share of semi-skilled and

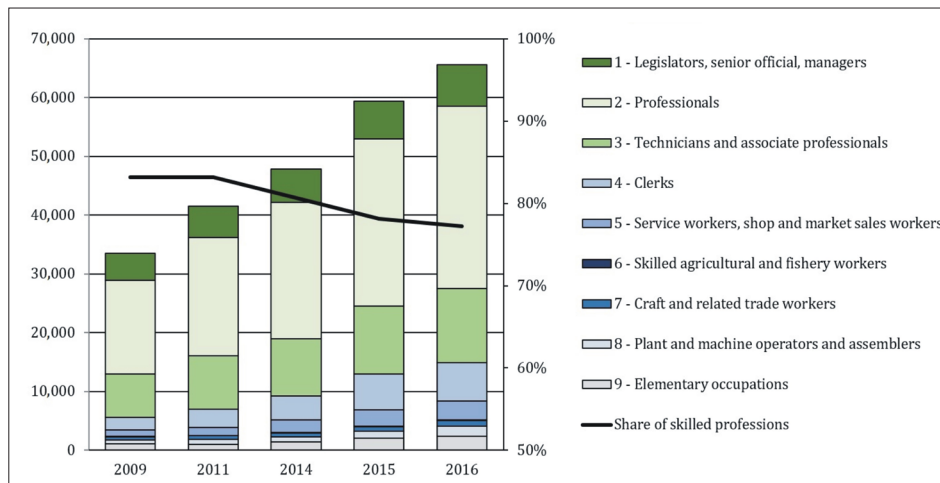


Fig. 3: Development of the skill-intensity of jobs performed by the tertiary educated migrant workers in the Czech Republic (2009–2016; The figures are at 31<sup>st</sup> December of the respective year)  
Sources: Internal data; authors' calculations

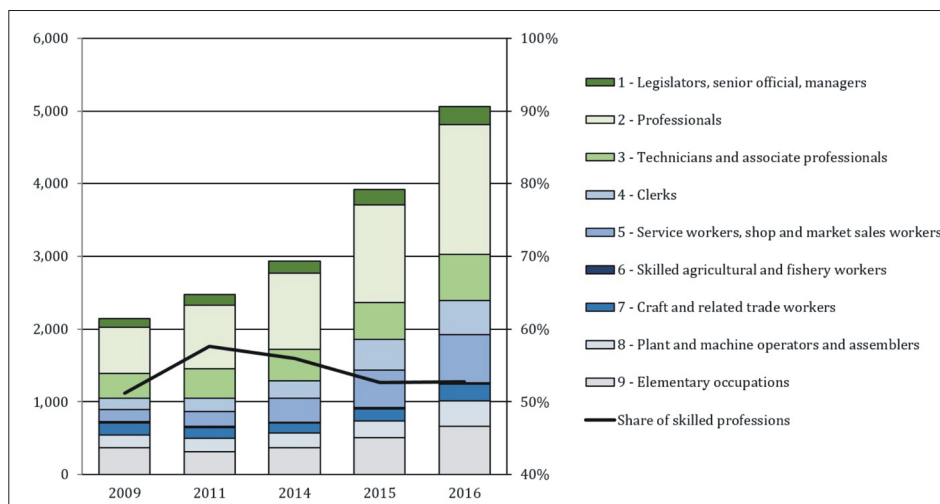
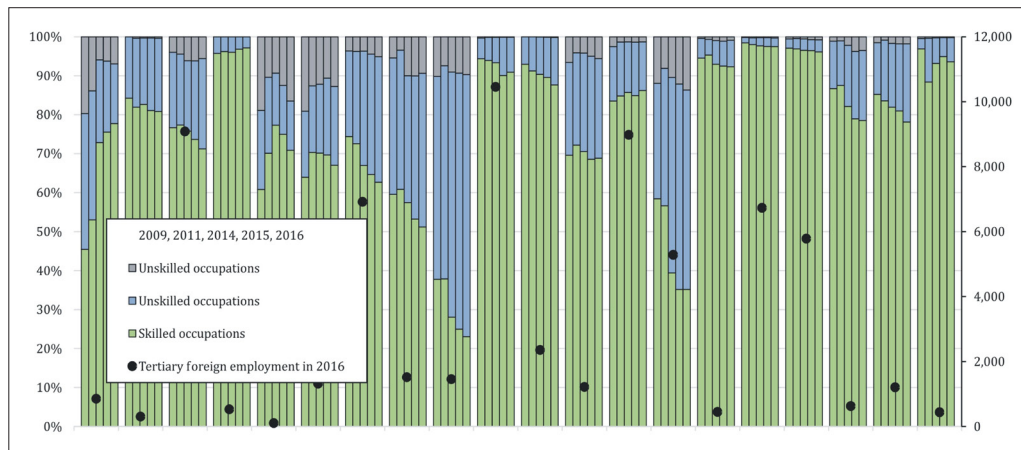
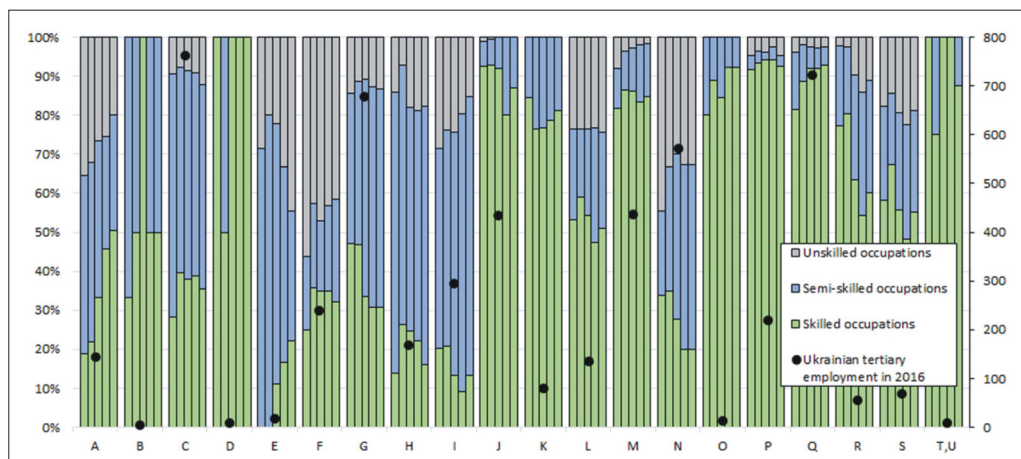


Fig. 4: Development of the skill-intensity of jobs performed by the tertiary educated Ukrainian workers in the Czech Republic (2009–2016; The figures are at 31<sup>st</sup> December of the respective year)  
Sources: Internal data; authors' calculations



*Fig. 5: Development of the skill-intensity of occupations of tertiary educated migrant workers in the Czech Republic (2009–2016; The data are at 31<sup>st</sup> December of the respective year). Sources: Internal data; authors' calculations*  
*Legend: A – Agriculture, forestry and fishing; B – Mining and quarrying; C – Manufacturing; D – Electricity, gas, steam and air conditioning supply; E – Water supply, sewerage, waste management; F – Construction; G – Wholesale and retail trade; repair of motor vehicles; H – Transportation and storage; I – Accommodation and food service activities; J – Information and communication; K – Financial and insurance activities; L – Real estate activities; M – Professional, scientific and technical activities; N – Administrative and support service activities; O – Public administration and defence; P – Education; Q – Human health and social work activities; R – Arts, entertainment and recreation; S – Other service activities; T – Activities of households as employers; U – Activities of extraterritorial organisations.*



*Fig. 6: Development of the skill-intensity of occupations of tertiary educated Ukrainian workers in the Czech Republic (2009–2016; The figures are at 31<sup>st</sup> December of the respective year). Sources: Internal data; authors' calculations*

unskilled positions compared to the general picture of foreign employment. The most frequent industries of employment for tertiary educated Ukrainians are the manufacturing industry (C) and health and social work activities (Q).

While the latter offers occupations matched to the level of acquired education by 90%, in the manufacturing industry the level of de-skilling is considerably higher (by about 65%), similar to other major areas of employment, sales activities (G), administrative and support service activities (N), as well as accommodation and food service activities (I), where the level of mismatch is considerable.

### 5.2 Longitudinal analysis

An important approach to assess the integration of foreign migrant workers (and tertiary educated Ukrainian workers in particular) into the Czech labour market is to analyse their individual progress (or trajectories) over time. Based on the individual data on foreign employment, 847 tertiary educated migrant workers were active in the Czech

labour market throughout the entire period. As indicated above, this pool of 847 tertiary educated Ukrainian workers made up 39.4% of all such educated Ukrainians in 2009, and 16.7% of those in 2016. Their trajectories in the Czech labour market from 2009 to 2016 is presented in Figure 7.

From Figure 7, we note first that the examined pool of tertiary educated Ukrainian workers who managed to find a fair match vis-a-vis their educational attainment is similar to the overall figures for the total number of tertiary educated Ukrainian workers (i.e. about 55%).

Second, the rather extreme stability of the skill intensity of job occupations performed by tertiary educated Ukrainian workers throughout time is apparent. Only 10% have moved across the different vertical rungs of the labour market, predominantly in an upward direction. As we can observe, the semi-skilled and unskilled job positions at ISCO levels 5–9 (and also ISCO level 3) have gradually decreased their position on the employment ladder throughout the time period (with the exception

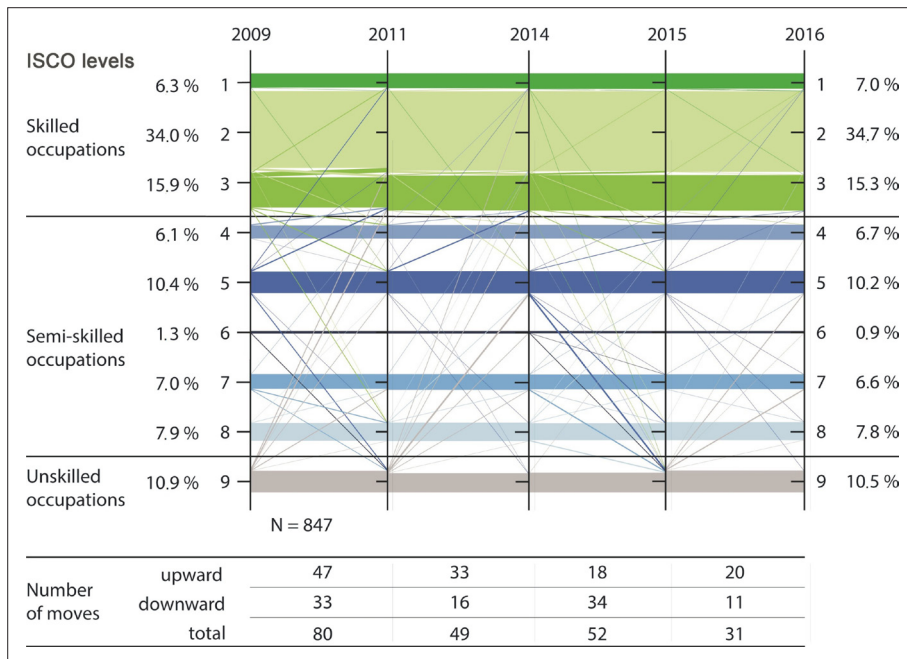


Fig. 7: Employment paths of tertiary educated Ukrainian workers in the Czech Republic (2009–2016)

Sources: internal data; authors' calculations

of ISCO level 4). Third, a decrease in the level of vertical mobility during the period can be noticed. The higher level of vertical mobility between 2009 and 2011 is assumed to be caused by higher dynamics in the labour market during the period of the global economic crisis, and it seems that the job structure of the migrant workers gradually consolidates over time.

Within the context of limited mobility between the job positions according to the skill level, the data further reveal that mobility also seems to be limited within each skill level, both in the upward and downward directions. The share of the most frequent job positions according to more detailed skill level, as well as industry, remains stable in each of the categories. Moreover, the affiliation to certain job positions seems to have a significant gender aspect. For example, female workers are heavily over-represented in clerk positions (some 70%, e.g. office assistants), services and shop sales positions (80%), but also in blue collar positions in the food and electronic industries (70%). Male workers form a significant majority in the top category (ISCO 1) as administrative, commercial, retail and service managers (67%), and also in positions of metal and machinery workers in the automotive industry and food processing (ISCO 7, 70%).

Looking at the overall picture, however, no significant progression in the labour market for over-educated Ukrainian workers takes place. This Figure provides convincing evidence that for tertiary educated Ukrainians, the position at which they enter into the Czech labour market is crucial, since their probability to gradually move up into occupations that would more suitably reflect their educational attainment is limited. This also means that when entering into skilled positions (ISCO level 1–3) from the beginning, it is likely that the migrant workers will keep these positions over time.

### 5.3 Macro-analytical perspectives: An explanation of educational mismatch at the regional level

The above descriptive analysis of educational mismatch and the resulting de-skilling of tertiary educated migrant workers, was based on an assessment of their educational attainment vis-à-vis occupations (defined by their skill-intensity, required level of education and industry), in which they are employed in the Czech Republic. Employment in certain industries seems to be one of the main factors that determines the level of risk of being over-educated for tertiary educated migrant workers. Nevertheless, does this assumption also work when assessing the level of mismatch at a higher geographical (district) levels, as presented in Figures 8 and 9? Alternatively, is the level of educational mismatch of tertiary educated migrant workers at the district level significantly influenced by other selected possible determinants, such as their demographic and social characteristics or other structural factors?

In order to reveal other possible determinants of the educational mismatch experienced by tertiary educated migrant workers, a multiple regression analysis was carried out with the level of mismatch being spatially distributed across the territory of the Czech Republic at the district level.

The stepwise procedure revealed that spatial educational mismatch is indeed a complex issue and that the employment of a single (quantitative) method, such as multiple regression analysis, only provides partial explanation. In our case (as shown in Table 3 below<sup>13</sup>), the variance in the dependent variable(s) is accounted for by the independent variables used in the model at the district level by some 32% (in case of total foreign employment) and by 41% in the case of tertiary Ukrainian employment<sup>14</sup>.

<sup>13</sup> The table presents the most significant variables included using the STEPWISE method

<sup>14</sup> In addition to the STEPWISE method, we also used the ENTER method, in which all independent variables enter the equation simultaneously. In that case, the coefficients of determination reached 0.531 for mismatch of tertiary educated migrant workers in total, and 0.542 for mismatch of tertiary educated Ukrainian workers.



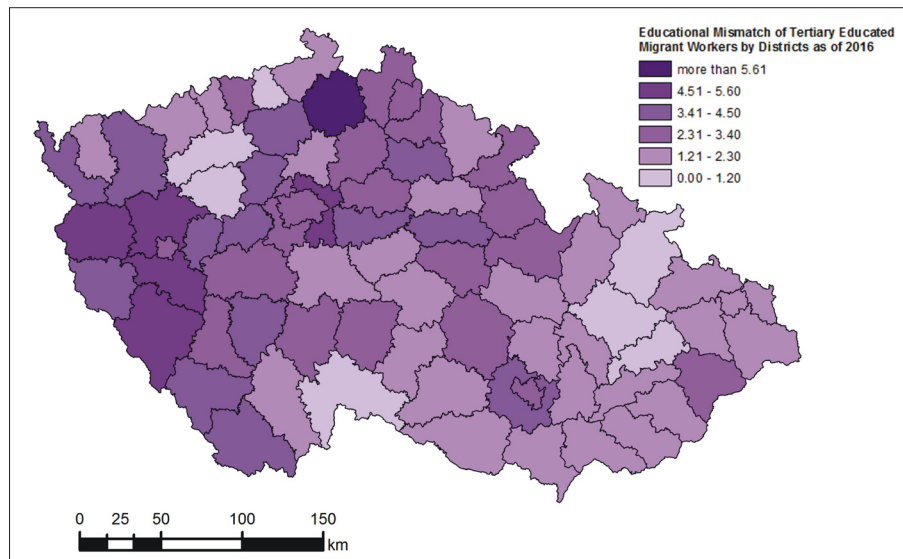


Fig. 8: Educational mismatch of tertiary educated migrant workers by Czech districts (2016)  
Sources: internal data; authors' calculations

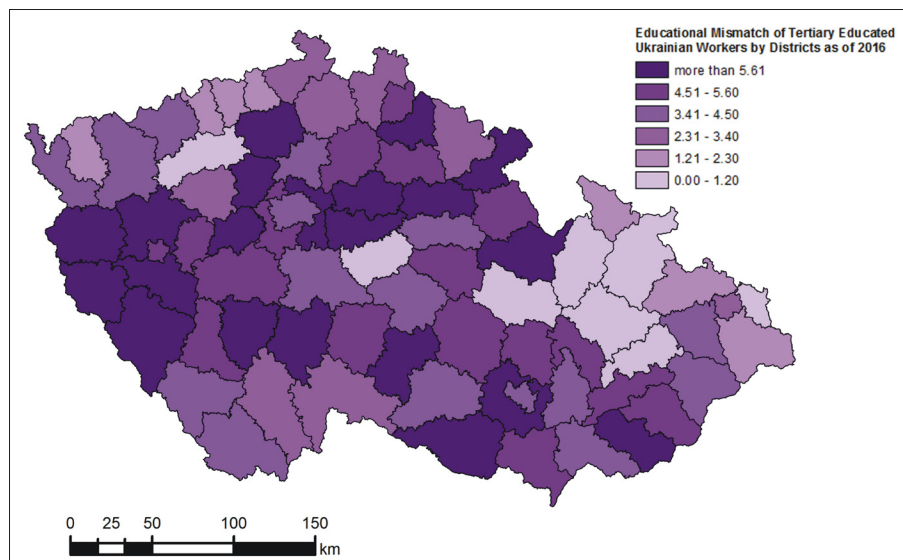


Fig. 9: Educational mismatch of tertiary educated Ukrainian workers by Czech districts (2016)  
Sources: internal data; authors' calculations

The method also indicated that from the range of variables, there is a limited number of those that can significantly contribute to an explanation of the regional distribution of the mismatch.

When summarising the results, the model revealed that the level of mismatch is determined mostly by a mix of characteristics related to the labour market environment (unemployment rate and agency employment), population structure (share of foreign workers) and migratory characteristics (migration effectiveness). The most important factor seems to be the rate of unemployment, which proved to be statistically significant for both dependent variables. Importantly, neither the sectors of economic activity nor the nature of the economic environment (share of entrepreneurs, business expenditures on research and development, or foreign direct investment), nor the position of districts in a vertical regional hierarchy, proved to be significant predictors in the given models.

In comparison to the findings of previous research (e.g. Kahanec et al., 2017), the rate of unemployment in the Czech Republic seems to influence the rate of mismatch at the district level in a different way – the greater the level of unemployment, the lower the level of mismatch. We thus suggest that a low level of unemployment may be an indication of the economic standing or “well-being” of a district, attracting both Czech and foreign labour, as indicated by the share of foreign employment and migration effectiveness, and contributing to an increased saturation of the labour markets. In these districts, tertiary educated migrants face tighter competition and as a corollary, there are only a certain amount of jobs for qualified foreign workers that consequently take jobs in the secondary labour market<sup>15</sup> with limited future career prospects. As a result, this leads to higher levels of over-education.

On the contrary, the “poorer, high-unemployment areas” are characterised by low instances of foreign employment.

<sup>15</sup> This concerns especially workers from third-countries outside the EU, due to their uneven conditions to enter into the labour market, as discussed above in Section 3.1

Models	Dependent variable 1: Mismatch of tertiary educated foreign employment		Dependent variable 2: Mismatch of tertiary educated Ukrainian workers			
	1	2	1	2	3	4
R2	0.230	0.322	0.276	0.336	0.375	0.409
Std. Error	1.109	1.048	1.795	1.731	1.691	1.655
Independent Variables	Standardised Beta Coefficients (Std. Error)					
Age					0.200*** (0.098)	0.221** (0.096)
Foreign workers	0.480* (2.542)	0.355* (2.597)				
Agency employment						0.191*** (2.533)
Unemployment rate		-0.328* (0.070)	-0.525* (0.110)	-0.374* (0.125)	-0.338* (0.124)	-0.295** (0.123)
Migration effectiveness				0.288** (2.072)	0.295** (2.024)	0.287** (1.984)

Tab. 3: Results of the multiple regression analysis using the stepwise method (Note: \* Sig. 0.000; \*\* Sig. 0.01; \*\*\* Sig. 0.05). Source: authors' calculations

In these districts, tertiary educated migrant workers seem to utilise their educational potential more easily and may obtain a job corresponding to their educational attainment (contributing to diminishing the mismatch). This may be due to a lower level of competition among qualified labour in the labour market caused by lower numbers of not only foreign workers, but possibly by shortages of qualified domestic labour, which tend to move to the more progressive districts.

A more specific model focusing on Ukrainian workers brings more variables into play. It appears that the mismatch increases with growing migratory stability (measured via migration effectiveness) and the role of agencies, such as employment intermediaries. Moreover, average age has a significant impact as well. The higher the average age of the group of Ukrainian workers in a district, the higher the risk of them being over-educated.

The explanations for the higher rate of mismatch in districts in the case of qualified Ukrainians may be due to several factors. The first is the already-mentioned uneven position of Ukrainians (as representatives of third country citizens) in the Czech labour market, diminishing their ability to compete with Czech as well as other EU qualified workers. The second factor may be the incompatibility of the Ukrainian and Czech economies in terms of industrial structure and its international competitiveness. As the Ukrainian economy and its educational system lags behind, qualified Ukrainian workers may often lack the necessary skills to succeed in the Czech labour market: this disadvantage may be further exacerbated by insufficient skill transfers across borders.

Third, as the character of Ukrainian migrant workers' economic migration is circular to some extent (e.g. Drbohlav, 2015), their primary motivation is to earn a sufficient amount of money in the short run rather than to pursue a professional career in the long term. This is also true for qualified workers. The relatively easier access to jobs in the secondary labour market (vis-à-vis qualified

jobs) may thus be more convenient. This explanation stems from the employment of tertiary educated Ukrainians through employment agencies as a significant variable. These agencies provide only temporary job opportunities, with limited prospects for future career paths toward more qualified positions.

As a result, and in addition to already-established citizenship-based segments or niches of employment in the Czech labour market with the relevant compatriots' support through ethnic networks (Valenta and Drbohlav, 2018), a considerably higher number of tertiary educated Ukrainians is channelled to their "typical" segments, predominantly in the secondary labour market, with variations at the district level.

## 6. Discussion and conclusions

In this article, we have addressed the issue of an education-occupation mismatch by providing empirical evidence on the level of mismatch of skilled migrant workers to the Czech labour market, with special emphasis on Ukrainian workers. By using a descriptive longitudinal approach, we aimed at providing a general picture of the temporal trajectories taken by Ukrainian migrants, and by means of a quantitative analysis to identify possible determinants of the level of mismatch of tertiary educated migrant workers at the regional level (using Czech districts).

The main findings spring from our conceptual and empirical analysis and are closely related to our three premises defined at the beginning of our paper. Based on individual (internal) data, we revealed firstly that the mismatch between the migrant employees' attained (tertiary) and required education in their occupations in the Czech labour market does exist, both at the general level of foreign employment, and in the case of Ukrainian workers. The mismatch is encountered by 21% of tertiary educated foreign migrant workers, and more specifically, by 45% of tertiary educated Ukrainian workers. The level

of mismatch in the case of Ukrainians has been gradually increasing over time (see Figs. 3 and 4), due especially to tertiary educated newcomers into the Czech labour market (since 2009)<sup>16</sup>.

Second, the progression of tertiary educated Ukrainian workers in the Czech labour market over time (2009–2016) faced limited vertical mobility, with a slight progression to more skilled occupations, reflecting their educational attainment to a greater extent. The point of entry into the Czech labour market thus seems to be the most significant factor for tertiary educated Ukrainian workers in determining their future career in the Czech Republic – once they enter semi-skilled or unskilled occupations, they tend to follow this path of professional marginalisation to a large extent (even when the environment in which they operated was exceptionally dynamic). Only 10% of our research sample (skilled migrants) moved up or down the rungs of the labour market. Moreover, the share of vertically mobile workers seems to have decreased over time (see Fig. 7). The revealed stability is further supported by the two-dimensional correlation analysis, where the relationship between both the total population of tertiary educated migrant workers and the length of stay, and the specific tertiary educated Ukrainian workers and their length of stay, did not prove to be significant<sup>17</sup>.

Linking these findings with the framework of Liversage's (2009) typology of migrants' progression trajectories, we can conclude that tertiary educated Ukrainian workers facing education-occupation mismatch in the Czech labour market, chiefly follow the path of marginalisation, remaining largely in semi-skilled and unskilled occupations. In relation to relevant theories and concepts, our results did not confirm the expected outcome that foreign migrants' positions (in our case of highly educated migrant workers) gradually begin to match their original educational level over time (Chiswick and Miller, 2009).

Third, when trying to explain the determinants of the mismatch at the district level, it seems that numerous factors are present. At the district level, a higher number of qualified domestic and foreign workers create a higher level of competition in economically progressive districts' labour markets (even if a broad range of qualified job opportunities is expected). As a result, a relatively higher share of tertiary educated migrant workers ends up over-educated in professions they find predominantly in the secondary (or ethnic) labour market segments. Conversely, in poorer, high unemployment districts, the lower levels of mismatch may be caused by the lower competition of domestic and foreign qualified labour. As the overall data on the mismatch represent a varied mosaic of backgrounds, as well as social and economic strategies of different citizenship groups in the Czech labour market, more valuable explanations therefore need to be identified at the level of an individual citizenship group, in our case Ukrainians.

The mismatch of tertiary educated Ukrainians follows a similar pattern, in juxtaposition to the rate of unemployment, as the economic progressivity of a district was indicated by positive values of migratory effectiveness, including both internal and international migrants. Moreover, the mismatch increases with the average age

of Ukrainian workers in a district. This pattern fits into the general observation on which the technological change theory is based: more recent graduates are considered to be more educated and flexible when compared to those who attended the same schools at an earlier time.

The more general factors that are perceived in the background range from particular motives and integration strategies of qualified Ukrainians in the Czech labour market, their disadvantaged position in regard to the incompatibility of both the Czech and Ukrainian economies, and their legal position in the Czech labour market. Also, the prevailing character of foreign employment in the Czech Republic, in terms of the existence of different ethnic niches predominantly in the secondary labour market maintained partly by ethnic networks, contributes to the overall higher levels of educational mismatch of qualified Ukrainians.

## 7. Recommendations and prospects for a future research agenda

The education-occupation mismatch of tertiary educated migrant workers is one of the important issues of international migration from the perspective of the international development nexus and labour force dynamics. We perceive our current inquiry as one of the cornerstones in the gradual development of macro-level empirical evidence in the given field in the Czech Republic.

Although we have worked with a unique set of statistical data that has never been used before in Czech research, we noticed that when attempting to capture the overall picture of the nature of the education-occupation mismatch in the Czech Republic, the inevitable process of generalisation reduces the number of particularities. The overall data on tertiary educated migrant workers represent a varied mosaic of different backgrounds, as well as social and economic strategies of different citizenship groups along with their processes of integration into the Czech society and economy. In order to reveal more specific patterns and factors behind the mismatch – and to verify our suggestions for comparative qualitative analyses regarding educational attainment – as well as the citizenship of a higher number of particular groups of foreign workers, further research needs to be carried out. Also, the mismatch in the regional dimension of differentiation should be considered at greater length.

In addition, we would highly appreciate undertakings in similar research, especially in the East Central European context, in order to achieve relevant comparisons. Research on the impact of the mismatch (and in general, on emigration of highly educated migrants) on the economic, social and cultural environments in sending countries would be equally significant. In this vein, more research is required since reduced mismatch can lead not only to “successful integration” and settlement in the destination country, but also to the potential return of migrant workers or to the increase in volume of their financial and social remittances, thus ‘enriching’ the sending countries.

Nevertheless, when considering the growing need for qualified labour in the context of growing competitiveness and innovation performance, our research revealed a considerable policy gap in the Czech Republic. Next to the

<sup>16</sup> The stability of the pool of tertiary educated Ukrainians and the growing mismatch of tertiary educated Ukrainians brings us to the conclusion that the decrease of the mismatch is caused by the new tertiary educated entrants into the Czech labour market.

<sup>17</sup> The demonstrated results are:  $r = 0.041$ , and respectively,  $r = -0.096$ : non-significant correlations.



goal of attracting qualified labour from abroad, it is therefore our principal recommendation to valorise the educational and qualification potential of qualified migrant workers already present in the Czech labour market. We perceive that this extension of the efforts would, at the same time, lead to their higher efficacy. As the qualified migrant workers are already in the Czech labour market, there is no need to employ the current extensive immigration procedure. At the same time, a considerable amount of energy and time does not need to be spent on efforts to integrate the workers, as they are already at least partially integrated.

The potential policies to better utilise the present educational potential of migrants in the Czech labour market also need to be based on results of the above-proposed lines for further research in the field of migration. In addition, tailored inputs from research in region-sensitive labour market structures and needs, as well as from the assessment of capacities of the educational system, need to be included in order to further fine-tune the policies so that they address the issues of enhancing the international competitiveness and innovation performance of the Czech economy properly and more efficiently.

## References:

- ALEKSYNSKA, M., TRITAH, A. (2013): Occupation-Education Mismatch of Immigrant Workers in Europe: Context and Policies. *Economics of Education Review* 36: 229–244. DOI: 10.1016/j.econedurev.2013.06.001
- ANDA, D., NORDMAN, C. J. (2017): Education Mismatch and Return Migration in Egypt and Tunisia [online]. [cit. 1.5.2018]. *Space, Population, Society* 2017(2). Available at: <http://journals.openedition.org/eps/7110>
- ARBEIT, C. A., WARREN, J. R. (2013): Labor market penalties for foreign degrees among college educated immigrants. *Social Science Research* 42(3): 852–871. DOI: 10.1016/j.ssresearch.2013.01.001
- AURE, M. (2013): Highly skilled dependent migrants entering the labour market: Gender and place in skill transfer. *Geoforum* 45: 275–284. DOI: 10.1016/j.geoforum.2012.11.015
- BATALOVA, J., FIX, M. (2018): Tapping the Talents of Highly Skilled Immigrants in the United States: Takeaways from Experts Summit. Migration Policy Institute, Washington, D.C. Available at: <https://www.migrationpolicy.org/research/tapping-talents-highly-skilled-immigrants-united-states-takeaways-experts-summit>
- BENDER, K. A., ROCHE, K. (2013): Educational mismatch and self-employment. *Economics of Education Review* 2013(34): 85–95.
- BUSSI, M., PARELIUSSEN, J. (2017): Back to Basics – Literacy Proficiency, Immigration and Labour Market Outcomes in Sweden. *Social Policy & Administration* 51(4): 676–696.
- CANGIANO, A. (2014): Migration Policies and Migrant Employment Outcomes. *Comparative Migration Studies* 2(4): 417–443. DOI: 10.5117/CMS2014.4.CANG
- CERNA, L. (2016): The crisis as an opportunity for change? High-skilled immigration policies across Europe. *Journal of Ethnic and Migration Studies* 42(10): 1610–1630. DOI 10.1080/1369183X.2016.1162355
- CHEVALIER, A. (2003): Measuring over-education. *Economica* 70(279): 509–531. DOI: 10.1111/1468-0335.t01-1-00296
- CHISWICK, B., MILLER, P. (2009): The international transferability of immigrants' human capital. *Economics of Education Review* 28(2): 162–169.
- CHORT, I. (2017): Migrant Network and Immigrants' Occupational Mismatch. *Journal of Development Studies* 53(11): 1806–1821. DOI: 10.1080/00220388.2016.1219344
- CNB (2015): Foreign direct investment – annual reports [online]. [cit. 23.2.2018]. Czech National Bank Available at: [https://www.cnb.cz/en/statistics/bop\\_stat/bop\\_publications/pzi\\_books/index.html](https://www.cnb.cz/en/statistics/bop_stat/bop_publications/pzi_books/index.html)
- COLLIER, P. (2013): *Exodus: How Migration is Changing Our World*. Oxford University Press.
- CWERNER, S. B. (2001): The Times of Migration. *Journal of Ethnic and Migration Studies* Vol. 27(1): 7–36.
- CZECH STATISTICAL OFFICE (2016a): Klasifikace vzdělávání (CZ-ISCED 2011) [online]. [cit. 1.10.2018]. Czech Statistical Office Available at: [https://www.czso.cz/csu/czso/klasifikace\\_vzdelani\\_cz\\_isced\\_2011](https://www.czso.cz/csu/czso/klasifikace_vzdelani_cz_isced_2011)
- CZECH STATISTICAL OFFICE (2016b): Ukazatele výzkumu a vývoje – 2016. [cit. 27.2.2018]. Czech Statistical Office Internal data.
- CZECH STATISTICAL OFFICE (2017a): Malý lexikon obcí České republiky – 2017 [online]. [cit. 7.3.2018]. Czech Statistical Office Available at: <https://www.czso.cz/csu/czso/maly-lexikon-obci-ceske-republiky-2017>
- CZECH STATISTICAL OFFICE (2017b): Registr ekonomických subjektů. [cit. 1.3.2018]. Internal individual data.
- CZECH STATISTICAL OFFICE (2017c): Statistická ročenka České republiky: 10. Trh práce [online]. [cit. 18.12.2017]. Czech Statistical Office Available at: <https://www.czso.cz/csu/czso/10-trh-prace-ae9awbmrqq>
- CZECH STATISTICAL OFFICE (2018): Veřejná databáze [online]. [cit. 10.2.2018]. Czech Statistical Office Available at: <https://vdb.czso.cz/vdbvo2/faces/cs/index.jsf?page=statistiky>
- DOCQUIER, F., MARFOUK, A., ÖZDEN, C., PARSONS, C. (2013): Geographic, Gender and Skill Structure of International Migration. Available at: [http://mpra.ub.uni-muenchen.de/47917/1/MPRA\\_paper\\_47917.pdf](http://mpra.ub.uni-muenchen.de/47917/1/MPRA_paper_47917.pdf)
- DOCQUIER, F., SEKKAT, K. (2006): The brain drain: what do we know? Working Paper No. 31, Agence Française de Développement.
- DRBOHLAV, D. (2002): Migratory Trends in the Czech Republic: Divergence or Convergence vis-a-vis the Developed World? *Migracijske i etnicke teme*, 18(2–3): 167–176.
- DRBOHLAV, D. et al. (2010). *Migrace a (i)migranti v Česku. Kdo jsme, odkud přicházíme, kam jdeme?* Prague, Sociologické nakladatelství.
- DRBOHLAV, D. (2011): Imigrace a integrace cizinců v Česku: Několik zastavení na cestě země v její migrační proměně z Davida na téměř Goliáše. *Geografie* 116(4): 401–421.
- DRBOHLAV, D. (2012): Patterns of Immigration in the Czech Republic, Hungary and Poland; A Comparative Perspective. In: Okolski, M. [ed.]: *European Immigrations; Trends, Structures and Policy Implications* (pp. 179–209). Amsterdam, Amsterdam University Press (IMISCOE Research).

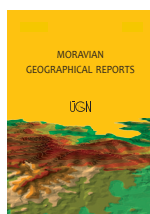


- DRBOHLAV, D. [ed.] (2015): *Ukrajinská pracovní migrace*. Karolinum, Praha.
- DRBOHLAV, D., BAILEY, A., LUPTÁK, M., ČERMÁKOVÁ, D. (2017): Migrant values and social remittances across the contemporary migration-development nexus: the case of Moldovans in Czechia. *Geografie* 122(4): 526–553.
- DRBOHLAV, D., JAROSZEWICZ, M. [eds.] (2016): *Ukrainian Migration in Times of Crisis: Forced and Labour Mobility*. Prague, Charles University, Faculty of Science.
- DRBOHLAV, D., LACHMANOVÁ-MEDOVÁ, L. (2009): Country Report Czech Republic [online]. [cit. 5.1.2018]. Research paper Available at: <http://www.prominstat.eu/drupal/node/139>
- DRBOHLAV, D., VALENTA, O. (2014a): Building an Integration System: Policies to Support Immigrants' Progression in the Czech Labor Market [online]. [cit. 11.12.2017]. Research paper, Migration Policy Institute Available at: <https://www.migrationpolicy.org/sites/default/files/publications/CzechEmpl-Policy.pdf>
- DRBOHLAV, D., VALENTA, O. (2014b): Czechia: the main immigration country in the V4. In: Eröss, A., Karácsonyi, D. [eds.]: *Discovering migration between Visegrad countries and Eastern Partners* (pp. 41–71). Budapest, HAC RCAES Geographical Institute.
- EUROSTAT (2008): NACE Rev. 2: Statistical classification of economic activities in the European Community [online]. [cit. 17.11.2017]. Luxembourg, Office for Official Publications of the European Communities. Available at: <http://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.PDF/dd5443f5-b886-40e4-920d-9df03590ff91?version=1.0>
- FAIST, T. (2010): The Crucial Meso-level. In: Martiniello, M., Rath, J. [eds.]: *Selected Studies in International Migration and Immigrant Incorporation* (pp. 59–90). Amsterdam, Amsterdam University Press.
- GARRIDO, M. R., CODÓC, E. (2017): Deskillling and delanguaging African migrants in Barcelona: pathways of labour market incorporation and the value of 'global' English. *Globalisation, Societies and Education* 15(1): 29–49. DOI 10.1080/14767724.2014.944757
- GÓRNY, A. (2017): Eastwards EU enlargements and migration transition in Central and Eastern Europe. *Geografie*, 122(4): 476–499.
- GREEN, F., ZHU, Y. (2010): Overqualification, job dissatisfaction, and increasing dispersion in the returns to graduate education. *Oxford Economic Paper* 62(4): 740–763. DOI 10.1093/oenp/gpq002
- GROOT, W., MAASEN VAN DEN BRINK, H. (2000): Overeducation in the labor market: A meta-analysis. *Economics of Education Review* 19(2): 149–158. DOI 10.1016/S0272-7757(99)00057-6
- GROSS, D. M., SCHMITT, N. (2010): Low- and High-Skilled Migration Flows: Free Mobility versus other Determinants. *Applied Economics* 44(1): 1–20.
- GUPTA, T. D., MAN, G. (2014): Class Borders: Chinese and South Asian Canadian Professional Women Navigating the Labor Market. *Asian and Pacific Migration Journal* 23(1): 55–83.
- HAMPL, M. (2010): Reality, society and geographical/environmental organization: searching for an integrated order. Prague, Charles University in Prague, Faculty of Science, Department of Social Geography and Regional Development.
- HARVEY, W. S., GROUTSIS, D., VAN DEN BROEK, D. (2018): Intermediaries and destination reputations: explaining flows of skilled migration. *Journal of Ethnic and Migration Studies* 44(4): 644–662. DOI: 10.1080/1369183X.2017.1315518
- HO, C., ALCORSO, C. (2004): Migrants and Employment: Challenging the success story. *Journal of Sociology* 40(3): 237–259. DOI: 10.1177/1440783304045721
- IGUCHI, Y. (2012): What Role Do Low-Skilled Migrants Play in the Japanese Labor Markets? *American Behavioral Scientist* 56(8): 1029–1057. DOI: 10.1177/0002764212441785
- INTERNATIONAL LABOUR ORGANIZATION (2010): ISCO – International Standard Classification of Occupations [online]. [cit. 4.1.2018]. International Labour Organization Available at: <http://www.ilo.org/public/english/bureau/stat/isco/>
- KAHANEK, M., EICHORST, W., COLUSSI, T., GUZI, M., LICHTER, A., NIKOLOVA, M., SOMMER, E. (2017): *People to Jobs, Jobs to People: Global Mobility and Labor Migration*. IZA Research Report No. 74, Bonn.
- KOUTNÁ, M. (2016): *Prékvalifikovanost: Skutečný nebo umělý problém?* Thesis. Prague, Charles University, Faculty of Social Sciences, Institute of Sociological Studies.
- KUPTSCH, C. (2013): Skills and migration. In: *The Encyclopedia of Global Human Migration*. Blackwell Publishing Ltd. DOI: 10.1002/9781444351071.wbeghm486
- LAGANA, F. (2011): Blocked mobility or unemployment risk? Labour market transitions of natives and immigrants in Switzerland. *International Journal of Comparative Sociology*, 52(4): 327–349.
- LEONTIYEVA, Y. (2012). *Brains versus Brawn: Comparison of the Educational and Occupational Status of non-EU Labour Migrants in the Czech Republic*. Thesis. Prague, Charles University, Faculty of Social Sciences, Institute of Sociological Studies.
- LI, I. W. (2013): *Overeducation in the Australian Graduate Labour Market.* Thesis. Curtin University, School of Economic and Finance, Perth, Australia. Available at: [https://espace.curtin.edu.au/bitstream/handle/20.500.11937/1066/191524\\_Li.Ian2013.pdf?sequence=2&isAllowed=y](https://espace.curtin.edu.au/bitstream/handle/20.500.11937/1066/191524_Li.Ian2013.pdf?sequence=2&isAllowed=y)
- LIVERSAGE, A. (2009): Finding a Path: Investigating the Labour Market Trajectories of High-Skilled Immigrants in Denmark. *Journal of Ethnic and Migration Studies*, 35(2): 203–226. DOI: 10.1080/13691830802586195
- MAN, G. (2004): Gender, work and migration: Deskillling Chinese immigrant women in Canada. *Women's Studies International Forum* 27(2004): 135–148.
- MARADA, M. (2018): Internal materials based on based on calculations in ArcGIS Network Analyst. Prague, Charles University, Faculty of Science, Department of Social Geography and Regional Development.
- MASSEY, D. S., ARANGO, J., HUGO, G., KOUAOUCI, A., PELLEGRINO, A., TAYLOR, J. E. (1993): Theories of International Migration: A Review and Appraisal. *Population and Development Review* 19(3): 431–466.

- MATTOO, A., NEAGU, I. C., ÖZDEN, C. (2008): Brain waste? Educated immigrants in the US labor market. *Journal of Development Economics*, 87(2): 255–269.
- MCDONALD, J. T., VALENZUELA, M. R. (2017): How Does Skills Mismatch Affect Remittances? A Study of Filipino Migrant Workers. *Contemporary Economic Policy* 35(1): 216–231. DOI 10.1111/coep.12167
- MUNSHI, K. (2003): Networks in the Modern Economy: Mexican Migrants in the U.S. Labor Market. *The Quarterly Journal of Economics* 118(2): 549–599.
- MUSTERD, S., SLEUTJES, B., BOTERMAN, W. R., BONTJE, M., ROUWENDAL, J. (2016): Stated residential preferences of highly skilled international migrants. *Skills and Cities* (95): 145–169.
- NESS, I. (2013): Hospitality workers and migration [online]. [cit. 14.2.2018]. *The Encyclopedia of Global Human Migration*. DOI 10.1002/9781444351071.wbeghm274
- NIJKAMP, P., POOT, J., SAHIN, M. [eds.] (2012): *Migration Impact Assessment*. Edward Elgar Publishing.
- NOWOTNY, K. (2016): Are Overqualified Migrants Self-Selected? Evidence from Central and Eastern European Countries. *Journal of Human Capital* 10(3): 303–346. DOI 10.1086/687415
- PECORARO, M. (2011): Gender, Brain Waste and Job-Education Mismatch among Migrant Workers in Switzerland. *International Migration Paper No. 111*.
- PLÖGER, J., BECKER, A. (2015): Social Networks and Local Incorporation—Grounding High-skilled Migrants in Two German Cities. *Journal of Ethnic and Migration Studies* 41(10): 1517–1535. DOI: 10.1080/1369183X.2015.1015407
- RAGHURAM, P., KOFMAN, E. (2004): Out of Asia: Skilling, re-skilling and deskilling of female migrants. *Women's Studies International Forum* 27(2004): 95–100.
- RAKOVCOVÁ, D. (2017): Migration plans of the international PhD students. *Geografie* 122(1): 45–63.
- ROZUMEK, M. (2012): Neregistrovaní migrantů a zaměstnání. Paper presented at the conference *The Future of Labour Migration in the Czech Republic 20.3.2012*. Prague, Caritas Czech Republic.
- RYE, J. F., ANDRZEJEWSKA, J. (2010): The structural disempowerment of Eastern European migrant farm workers in Norwegian agriculture. *Journal of Rural Studies* 26(2010): 41–51.
- SAXENIAN, A.-L. (2006): *The New Argonauts: Regional Advantage in a Global Economy*. Harvard University Press, Cambridge.
- SCHOVÁNKOVÁ, S. (2013): Determinants of the Spatial Distribution of Foreign Employees on Different Skill Job Positions: The Case of the Czech Republic. *Danube: Law, Economics and Social Issues Review* 4(2): 115–139. Warsaw, De Gruyter Open. DOI: 10.2478/danb-2013-0006
- SERT, D. S. (2016): From skill translation to devaluation: the de-qualification of migrants in Turkey. *New Perspectives on Turkey*, 2016(54): 97–117. DOI: 10.1017/npt.2016.9
- SPIELVOGEL, G., MEGHNAGI, M. (2018): The contribution of migration to the dynamics of the labour force in OECD countries: 2005–2015. *OECD Social, Employment and Migration Working Papers*, No. 203, OECD Publishing, Paris. DOI 10.1787/a301bef8-en
- SPOONLEY, P. (2006): *A Contemporary Political Economy of Labour Migration in New Zealand*. *Tijdschrift voor Economische en Sociale Geografie* 97(1): 17–25. DOI: 10.1111/j.1467-9663.2006.00492.x
- SPURNÁ, P. (2008): Prostorová autokorelace – vřudypřítomný jev při analýze prostorových dat? *Sociologický časopis* 44(4): 767–787.
- SUBEDI, R. P., ROSENBERG, M. W. (2016): High-skilled immigrants—low-skilled jobs: Challenging everyday health. *The Canadian Geographer* 60(1): 56–68. DOI: 10.1111/cag.12237
- TREVENA, P. (2013): Why do highly educated migrants go for low-skilled jobs? A case study of Polish graduates working in London. In: Glorius, B., Grabowska-Lusinska, I., Kuvik, A. [eds.]: *Mobility in Transition: Migration Patterns after EU Enlargement* (pp. 170–191). Amsterdam, Amsterdam University.
- TRLIFAJOVÁ, L. (2015): Cizinci ztraceni v počtech? Metodika práce s daty o cizincích ve veřejně dostupných databázích [online]. Research paper. Prague, Multicultural Centre Prague. Available at: [https://aa.ecn.cz/img\\_upload/224c0704b7b7746e8a07df9a8b20c098/metodika-prace-s-daty-o-cizincich-ve-verejne-dostupnych-databazich.pdf](https://aa.ecn.cz/img_upload/224c0704b7b7746e8a07df9a8b20c098/metodika-prace-s-daty-o-cizincich-ve-verejne-dostupnych-databazich.pdf)
- UNESCO (2017): *International Standard Classification of Education ISCED 2011* [online]. [cit. 8.1.2018]. UNESCO Institute for Statistics Available at: <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf>
- VALENTA, O. (2015): (Ne)využití lidského kapitálu Ukrajinců v Česku. In: Drbohlav, D. [ed.]: *Ukrajinská pracovní migrace v Česku: Migrace – Remitence – (Rozvoj)* (pp. 161–182). Praha, Karolinum.
- VALENTA, O., DRBOHLAV, D. (2018): Míra (ne)využití vzdělanostního potenciálu zahraničních pracovníků v Česku. *Fórum sociální politiky* 12(2): 2–9.
- VAVREČKOVÁ, J., BAŠTÝŘ, I., MICHALIČKA, L., DRBOHLAV, D., MUSIL, J. (2008): Riziko možného odlivu kvalifikovaných odborníků z České republiky do zahraničí. Final project report 13 019/04 DP2. Prague, Research Institute for Labour and Social Affairs.
- VOGEL, R. D. (2013): Marxist theories of migration [online]. [cit. 14.2.2018] *The Encyclopedia of Global Human Migration*. DOI: 10.1002/9781444351071.wbeghm354
- WEBB, S. (2015): The feminisation of migration and the migrants VET policy neglects: the case of skilled women secondary migrants in Australia. *Journal of Vocational Education & Training* 67(1): 26–46. DOI: 10.1080/13636820.2014.922117

**Please cite this article as:**

VALENTA, O., DRBOHLAV, D. (2018): Longitudinal and spatial perspectives on the mismatch of tertiary educated migrant workers in the Czech labour market: The case of Ukrainians. *Moravian Geographical Reports*, 26(4): 255–272. Doi: 10.2478/mgr-2018-0021.



# Spatial patterns of the variability of native residents in a transitional society: The case of the Czech Republic

Miloslav ŠERÝ<sup>a\*</sup>

## Abstract

Currently, the native residents of a country are an important social phenomenon. Although extensive mobility challenges the bonds between places and their inhabitants, biographies of native residents are less often based in several spatial contexts because they are born and raised in a specific place and live there for their entire lives. This absence of residential mobility has important consequences for the ways native residents relate to their 'home places' and how they build local attachments. Using data from the Czech Republic, the main objective of this paper is to explore and analyse recent developments in the structure of native residents. The objects of analysis are the municipalities of the Czech Republic, and aggregate census data are used for the purpose of analysis. Spatial and non-spatial approaches to the analysis showed significant changes in the structure of native residents, revealing statistically significant spatial patterns. In general, the residents of Czech municipalities demonstrate levels of co-residence or 'mixing' in a significant way in recent years. Thus, further research into matters such as spatial belonging, attachment and identity should also take into account the influence of mobility.

**Keywords:** native residents, mobility, transitional period, spatial patterns, local belonging, Czech Republic

**Article history:** Received 20 April 2017, Accepted 11 November 2018, Published 31 December 2018

## 1. Introduction

Extensive mobility is an important process in the contemporary world. A high degree of mobility takes place on all spatial scales and has numerous consequences (Adey, 2010). One crucial consequence is that mobility challenges the relations and links between places and the people who inhabit them (Paasi, 2002). The effects of mobility on these relations and links have been broadly discussed by scholars from various social science disciplines. Geographers have attempted to contribute to the knowledge about the bonds between people and places and about the developing substance of these bonds in an era of high mobility and globalisation.

For instance, Creswell (2002, 2006) explicates the concept of sedentarism, which is challenged in a mobile world. The concept is understood as locating bonded and authentic places, regions or nations, as a fundamental basis of human identity and experience. Sedentarism treats as 'normal': stability, meaning and place, and treats as abnormal distance, change and placelessness (Sheller and Urry, 2006, p. 208). Vainikka (2015) focused on reflexivity, freedom in the late modern society to express cultural affiliations, and a need to create self-identity. He investigates how people with

different worldviews use regions in their identity narratives. Tomaney (2012) seeks to advance the current understanding of the nature of place, the local and regionality with the concept of parochialism as a mode of dwelling. Tomaney's (2015) also focused on local belonging. This author searched for the nature of the phenomenon and one of his crucial conclusions is that local belonging still matters to the majority of people. Similarly, Antonsich (2010) attempted to provide a precise conceptualisation of belonging, and sees the importance of belonging in an era of transnational migration.

Yet, the concepts of native residents are something which are almost impossible to find in recent discussions, despite the fact that they are important social phenomena in each population as they are characterised by long-term residence in a given spatial entity. Biographies of native residents are less often based on several spatial contexts because they are born and bred in a specific place and dwell in this place for their entire lives. According to Kuldová (2005), a prerequisite for gaining consciousness of belonging to a particular area is long-term stay. Similarly, Gustafson (2001) understands both the long-term persistence in a given place and awareness of this persistence as crucial for the process through which people use a specific space to

<sup>a</sup> Department of Geography, Faculty of Science, Palacký University Olomouc, Czech Republic (\*corresponding author: M. Šerý, e-mail: [serymilos@gmail.com](mailto:serymilos@gmail.com))



construct their own identity. Thus, it is evident that the way native residents use living space in the process of identity formation is specific.

Despite the importance of the native residents examined here, it is possible to state that they have not yet been given adequate attention both in the context of post-communist countries of Europe or in an international context. At least in the case of the post-communist countries of Europe, which, in the second half of the 20<sup>th</sup> century faced the direct influence of the former Soviet Union, this can be a surprising finding. These countries, after the disintegration of the local totalitarian structures and the collapse of the Soviet Union, went through a transition process which is associated, *inter alia*, with several socio-spatial changes.

The Czech Republic is undoubtedly one of those countries (Dostál and Hampl, 2004). At the end of the 1980s, the socialist regime collapsed, which resulted in a process of extensive economic, political, and cultural changes, collectively denoted as the transition of the society. This transition has received considerable attention in scientific research. Yet, one misses a comprehensive attempt to assess the transition of the cultural aspects of the society, with a couple of exceptions (see: Hampl, Dostál and Drbohlav, 2007; Kučerová, 2009).

As confirmed by previous research (Blažek and Csank, 2007), Czech society during the transitional period is characterised by a deepening of differences. These differences assume both vertical and horizontal forms. It can be assumed that similar processes may also occur in the case of native residents. Moreover, there has been a significant increase in mobility in the Czech Republic since the end of the 1980s. Initial assumptions, however, cannot omit the socio-spatial changes after the Second World War. This refers to the transfer of the German population, mainly from the border regions, and the resettlement of these emptied regions with a wave of immigrants (see Gerlach, 2010). The assumption is that the consequences of this process, which in the affected regions completely disrupted the former structure of native residents, will appear in the course of the transition of Czech society.

Using data from the Czech Republic, the main objectives of this paper are to explore and analyse recent developments in the structure of native residents. With regard to the data used (see below), the transitional period from 1991 to 2011 will be assessed. The following research questions will be addressed:

- RQ1: What are the general trends that can be identified in the variability of the structure of native residents over the transitional era?;
- RQ2: What spatial patterns (dispersion, regularity, clustering) can be found in the structure of native residents and how has this pattern developed during the transitional period?; and
- RQ3: Are there local pockets of instability in the structure of native residents and how have they evolved over time? In other words, are there local clusters of individual types of spatial associations in the spatial pattern of the structures being evaluated?

Any successful fulfilment of the objectives by analysing the data from the Czech Republic will also contribute to the recognition concerning mobility of the population in a country undergoing a post-totalitarian transition of society. In general terms, the article seeks to contribute to discussions about the nature of place, ‘the local’ and

‘regionality’, as recent debate, according to Tomaney (2012), does not offer a satisfactory account of local identification, attachment, and belonging.

## 2. Theoretical departures: Conceptualising native residents

Each individual is a native person. Everyone is born in some part of a space and has a place of origin, more precisely a place of birth. The place is then seen as the birthplace of that person, who is formally linked with their birthplace throughout their life by being denoted as its native person. This is true even if that person does not live in their birthplace, has not built a relationship to it, and does not use it to construct their own identity or participate in the process of the production of the identity of that place. In this case, any additional factual connection of that person to their birthplace ends at the time of birth. In this sense, it is a concept of a native person which is based purely on being born in a particular place.

Another concept of a native person differs from the first in that it contains a certain added quality, by which is meant the aspect of permanence. A native person is conceived of as an individual who is not only born in a particular place, but remains there throughout their life. A native person thus represents an extreme form of the length of a stay in a particular place. Hence, we can classify this native person as a native resident. For this person, the birthplace is then a specific place because there is a permanent reproduction and transformation of the individual's everyday experience of this place. This person also attributes different meanings to this place on a long-term basis and constantly perceives its landscape (Riley, 1992), as well as other physical attributes. In general, according to Tuan (1975), these processes enable this person to create an identity in relationship to this place. The longer duration of these processes in the case of native residents, in comparison with other individuals, necessarily generates a different sense of place (Hay, 1998a) and a different nature of identity with a place.

In modern societies, in many cases, the latter concept of a native person is difficult to apply. People are usually born in hospitals, which in many cases are elsewhere than in the place of their further residence. The length of this residence may then be equal to the length of one's life. For this reason, the aspect of permanence introduced in the previous paragraph may begin to apply, including its consequences. The third concept of a native person reflects the aspect of permanently being in a certain place, although the actual birthplace is located in another place. Here, native person is applied not to the birthplace, but to the place where a person spends her/his entire life. In the frame of this third concept, a native person can also be classified as a native resident.

Methodologically, this paper is based on the second and third concepts of native person: the permanence of being in a certain place is emphasised at the expense of the birthplace, which is also the approach to native person portrayed by the Czech Statistical Office (see CZSO, 2014). The ‘statistical’ native resident recorded in the Czech statistics (see Section 3 on methodology and data, below) may be identified with the second and third concepts of native person. Hence, in the following text, the author will strictly use the term native resident instead of the term native person.

Native residents have “no” experience with residential mobility, which is understood here as moving from one municipality to another, not as moving within one



municipality. Municipalities are specific identity spaces. In the Czech context, they could be understood as sources of sedentarism, which means that identities are built on stability and around the local environment. On the other hand, municipalities have their own histories and it is also possible to identify municipal borders and institutions, as well, as symbols (Šifta and Chromý, 2017). All of these factors also contribute to identity constructions (Paasi, 1986).

Note that the above-mentioned absence of residential mobility has important consequences concerning how native residents are bonded to their 'home places' and how they build local attachments, since little or no mobility fosters local bonds and local community life (Fried, 2000). Tomaney (2012) sees the formation of local attachments as a complex process and the long-term persistence in a place. According to Kučerová-Kuldová (2008), it is understood as one of the important conditions for the development of an individual's attachment to a particular spatial entity. The process is based on diverse, long-term, and, at times, contradictory influences. These could, according to Paasi (2003), comprise ideas of nature, landscape, the built environment, culture/ethnicity, dialects, economic development, periphery or centre relations, marginalisation, stereotypic images of a people/community (us and them), actual or invented histories, utopias and diverging arguments on the identification of people. In the case of native residents, such processes are less affected by their experiences with different places because they lack residential mobility.

In his contributions, Paasi (2002, p. 144) assumes that living together in the same region or place and social circumstances for a long time, will cause individuals to develop certain dispositions or roots, and these individuals will be provided with adopting attitudes and communicating or certain structures of expectations. Hence, the number of inhabitants of a region born in that region, influence their regional identities. Golledge and Stimson (1997) also discuss the effects of length of residence. They indicate that the importance of the relationship between the length of a stay in a given location, the amount of experience related to that place, and the nature of the perception of that place contribute to identity. Moreover, Gustafson (2009) indicated in his study a negative relationship between residential mobility and local and regional belonging. His conclusions coincide with the research of Hay (1998b), suggesting that local belonging becomes stronger over time and frequent residential mobility makes it difficult to develop a strong sense of local belonging (Fried, 2000; Hay, 1998b). Further, Feng, Breitung and Zhu (2014) similarly identify mobility as a process which has a great impact on people's concepts of identity and belonging. As noted by Chromý and Janů (2003), people not only form a belonging to a place, but also to a group of people who inhabit this place. Theodori (2004) argues that the length of the stay in a given place affects the development of community attachment, and this can be understood as social participation and integration into the community (McCool and Martin, 1994). Furthermore, social contacts, including family members, partners, friends and others, can become essential in the process of homemaking (Feng and Breitung, 2018).

The consequences of a long-term residence in a particular place can continue after moving from that place. Specifically, if a native resident of one place moves to another place, they do not have to accept the new identity of a new place of residence. This was confirmed by Cassidy and McGrath (2015), who showed how young people who grew up

in farms continue to assert rural identities even when they build a life in urban areas away from their home place and local community.

Based on the above research findings, native residents can be assumed as playing an important role in the development of places and regions. For instance, Tomaney (2012) writes about parochialism, suggesting it as a mode of dwelling. He understands a parochial outlook as one that values the local, its culture and solidarities, as a moral starting point and locus of ecological concern and a site for the development of virtues including commitment, fidelity, civility and nurture. Yet, it cannot be stated a priori that the majority of native residents in a population of a given municipality positively contributes to the development of the municipality (Kučerová, 2009). We should also be aware of negative aspects such as marginalisation and locking in. Successful development depends on the willingness of inhabitants to participate in development, their civic engagement and their associated activities. As Semian and Chromý (2014, pp. 268–269) show, demonstrating uncritical patriotism as well as emphasising and celebrating the characteristics of a given spatial entity, instead of finding ways to use them in developing process, can play a role as a barrier. These authors also mention the reproduction of stereotypes and preconceptions which similarly may negatively affect the cooperation among actors within and outside the region. The same effect can occur on the scale of municipalities.

Like other population structures, the structure of native residents is not rigid in time or space. In general, the development of population structures in space and time can be determined by various cultural, economic, and political factors, with an emphasis on the role of the mechanisms of power in this process (Elden, 2007). The Czech Republic and other post-socialist states of Central Europe experienced a number of political factors in the latter half of the 20<sup>th</sup> century, and two of them are considered to have been essential. The first is from the period after the end of World War II, when massive spatial mobility took place in the context of the reorganisation of space by the political regime of the time, especially in border regions. The second can be observed at the turn of the 1980s and 1990s, when the political system was transformed from a totalitarian one (restriction of mobility) to a capitalist one (liberalisation of mobility).

### 3. Remarks on methodology and data sources

The research questions defined above are treated by the application of selected statistical methods for analysing aggregated data. The particular methods related to specific research questions are as follows:

- RQ 1: non-spatial approach represented by methods (plot box, histogram) for analysis of general trends in the development of the structure of native residents; interpretation of cartograms;
- RQ 2: a spatial approach to the analysis of the development of the variability of the structure of native residents represented by the method of global spatial autocorrelation. Using this method, an attempt will be made to identify the evolution of the spatial clustering of similar values in the structure of native residents; and
- RQ 3: a spatial approach to the analysis of the development of variability in the structure of native residents as represented by the local spatial autocorrelation method.

The methodological basis is chosen with regard to the character of the main objectives of the paper and the considerable number of research objects we decide to include in the analysis itself. In total, there are 6,251 spatial units; 6,246 of them are municipalities in the Czech Republic and the remaining five cases are so-called military training areas<sup>1</sup>.

The data used in the analysis are taken from the Czech Statistical Office (CZSO) (Růžková et al., 1995; Škrabal et al., 2005, 2013), obtained in Censuses of people, houses, and flats. These censuses were carried out three times: in 1991, 2001 and 2011. In 1991, for the first time in the period after the Second World War, the census forms included a question that took into account native residents. The question asked about the municipality of birth, which was meant as the official residence of the respondent's mother at the time of the respondent's birth (CZSO, 2014). If this municipality of birth was the same as the respondent's municipality of the official residence at the time of the census, that respondent was considered to be a native resident of the municipality.

From the previous paragraph, it is obvious that the data used in the research includes a certain dual quality. First, of course, it provides information about the permanence of a respondent's stay in the municipality, which is considered to equate with native resident, and also transmits some information about the spatial mobility of the population. Both of these qualities obviously correlate. Therefore, if these data are analysed, it can be interpreted in two ways: with respect to spatial stability but also with regard to spatial mobility.

It is evident that the information stored in the data described above is largely artificial. Thus, it is necessary to be aware of methodological limitations of the data. First, it is necessary to realise that the data do not identify individuals who live in a given municipality for a substantial part of their lives, so-called autochthons. They do not live in the given municipality for their whole life, but their stay there also shows the character of permanence. These may be persons who moved to the municipality with their parents in early childhood and then remained there for the rest of their lives.

Second, it is necessary to consider native residents who may spend a larger part of their life, e.g. for job purposes, outside the municipality, to which they may at some stage

return. Hence, these persons can have experience with residential mobility. Unfortunately, their actual number is impossible to determine from the data used.

Third, it is necessary to take into account that the analysis was conducted in all three years for the population with official residence<sup>2</sup> because of the possible mutual comparison. The number of persons with official residence in the given municipality (residence in the municipality in which the person is officially registered) in the Czech Republic often differs from the number of persons with usual (factual) residence in that municipality (Šanda, 2015). Structuring native residents according to their usual residence would definitely take more account of their actual situation.

Fourth, it is necessary to consider the unknown category. It is a part of the population comprising of persons who did not answer the question concerning a municipality of birth. This category tends to distort reality, with the degree of distortion increasing proportionally with the number of inhabitants in the unknown category. It should be noted that the data used does not represent 100% of the Czech population in all three years. In addition, the size of the unknown category varies in individual years: see Table 1.

The above-discussed methodological limitations of the data must be taken into account when interpreting the results of the analysis. Despite these limitations, the data used are the most appropriate for the purpose of recognising developments in the structure of native residents in the period of transition. Regarding the main objective of the paper, the use of these data is necessary since there are no alternative data that could be used.

As mentioned earlier, the data collection took place through censuses conducted during the transitional period. The data collection was carried out by the CZSO, from which the data were taken. The data provide information about the selected objects of the research, i.e. the municipalities. One problem is the subsequent management of the data, as the structure matched the administrative divisions valid at the time of the censuses. The data representing each year vary considerably as the administrative structure of the Czech Republic underwent significant development in the period after 1989. With regard to mutual comparability, a common database was established for the datasets in the years 1991, 2001 and 2011 (see Tab. 1).

	Absolute numbers			Relative frequencies (%)		
Year	1991	2001	2011	1991	2001	2011
Total population	10,302,215	10,230,060	10,436,560	100	100	100
Unknown	253,923	199,516	35,154	2.46	1.95	0.34
<b>Number of municipalities</b>						
Year	1991	2001	2011			
	5,768	6,258	6,251			

Tab. 1: The number and proportion of the population with unidentified persons; and number of municipalities in each census (note: the data refer to the population by official residence)

Sources: CZSO, 2014; Růžková et al., 1995; Škrabal et al., 2005, 2013. author's calculations

<sup>1</sup> Military training area is a defined part of the territory of a state designated for national defence and armed forces training. Like a municipality, a military training area constitutes a territorial administrative unit, but it does not have self-governing status.

<sup>2</sup> The final results of the censuses 1991 and 2001 were structured in accordance with the official municipality of residence, but in 2011, the final results were structured according to usual municipality of residence. Hence, preliminary data structured according to usual municipality of residence in our analysis for 2011 have been used.

For this database, the administrative structure of the Czech Republic effective in 2011, is used. All three datasets were transformed to this database, which ensured the possibility of mutual comparison. In the above-mentioned transformation, the basic settlement units (BSU) are used. The BSU are statistical and technical spatial units defining territories of the same function. It is the second smallest spatial unit to which the CZSO allocates data collected during its censuses since 1970. The BSU usually allow internal differentiation of municipalities and this principle is utilised in the process of creating a common database.

The data transformed to the common database is analysed using standard and spatial statistical techniques. For the purposes of answering the first research question, the data analysis that is applied uses statistical indicators such as frequencies, standard deviations and quantile indicators. These indicators are used to create box plots that demonstrate the dynamics of changes in the structure of the native residents at the scale of municipalities, as well as to create a common histogram of frequencies. In addition, the cartograms depicting the dynamics of changes and the spatial distribution of them are drawn.

With respect to the remaining research questions, some of the spatial methods of analysing the variability of the phenomenon being evaluated are used. The advantage of this group of methods is that they respect the spatial information inherent in the data (Netrřová and Nosek, 2017). In this paper, selected methods of spatial autocorrelation are applied. Using these methods, we are able to determine the spatial variability and spatial pattern of the phenomena under observation by evaluating the degree of clustering of this phenomenon in space. We account for the rate of clustering at two spatial levels: global and local.

Tests for global clustering are used to investigate whether there is clustering throughout the area under study. By analysing the data on this level, it is possible to

evaluate whether the spatial variability of native residents has a dispersive, regular or clustered spatial pattern. The rate of global clustering is calculated using Moran's I statistic (Moran, 1950). This method is one of the oldest indicators that detect global clustering. It detects whether nearby spatial units have similar or dissimilar attributes overall, that is positive or negative spatial autocorrelation respectively. As Wang (2014) suggests, it is also important to identify cluster locations or local clusters, even when a global clustering test reveals the presence of overall clustering in the area under study, as there may be some places exhibiting local clusters. For this reason, Anselin (1995) suggested the so-called Local Indicator of Spatial Autocorrelation (LISA) to capture local pockets of instability or local clusters. By applying this method, four variants of statistically significant spatial associations can be identified.

#### 4. Results

The development of native residential structure in the period from 1991 to 2011 in the municipalities of the Czech Republic is shown in Figure 1. The box plot depicts the basic statistical distribution of the proportion of native residents in the population of individual municipalities.

This box plot reveals several aspects of change. First, during the period 1991–2011, there was a gradual decrease in the proportion of native residents in those municipalities with the highest proportion of native residents in the population (fourth interval). We can observe a continuous drop in the maximum values in the municipalities, as well as a continuous drop in the values of the third quartile, which defines the bottom limit of this group of municipalities. The width of the fourth interval first stagnates and then increases, which also indicates a decrease in the proportion of native residents in this group of municipalities, accelerated in the second phase.

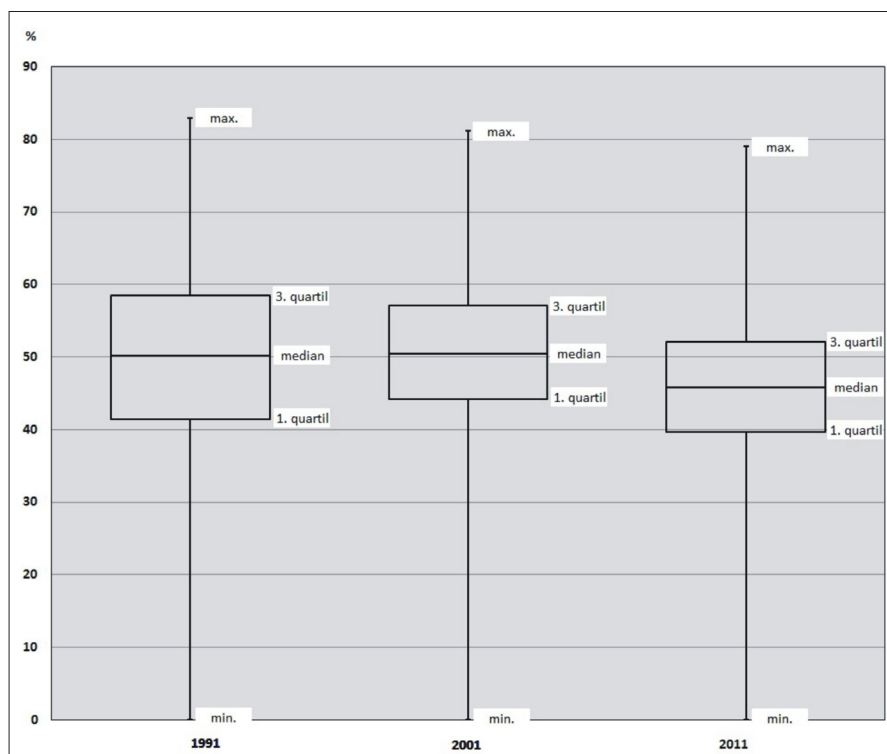


Fig. 1: The proportion of native residents in the population of municipalities of the Czech Republic, 1991–2011  
Sources: Růžková et al., 1995; Škrabal et al., 2005, 2013; author's calculations

On the contrary, different processes occur in the first interval of those municipalities with the lowest proportion of native residents in the population. In the case of such municipalities, the proportion of native residents first grows and then begins to drop slightly. At the same time, an increase and then a decrease in the width of the first interval are evident. In this interval, we mostly have municipalities of varying sizes with a break in the continuity of socio-historical developments that occurred after the end of the Second World War. The autochthonous German population was mostly displaced and the authorities attempted to fill the vacated space with massive resettlement. The consequences of these processes were still visible in 1991, when for instance a zero proportion of native residents was found in six municipalities. In this first interval, we can gradually find municipalities that were not affected by the processes outlined above. These municipalities are located around the capital city Prague and regional centres that, during the transitional period, began to experience strong residential suburbanisation processes.

The group of municipalities which are located in the second and third interval between the first and third quartiles represents one half of the municipalities that were analysed. We can observe a continuous reduction of the width of these intervals. The median value is almost identical in 1991 and 2001, but in 2011, its value is considerably lower. If we consider the above-mentioned developments in the first and fourth intervals, we can conclude that there is an equalisation of the proportion of

Year	1991	2001	2011
Median	50.2	50.5	44.2
Standard deviation	13.0	10.0	9.9

Tab. 2: Mean values and standard deviation of the proportion of native residents in the population of Czech municipalities, 1991–2011

Sources: Růžková et al., 1995; Škrabal et al., 2005, 2013; author's calculations

native residents in the population of the municipalities. The equalisation of values is associated in the second phase with a significant decrease in the proportion of native residents in the populations of municipalities comprising the second and third intervals. It seems that the transitional processes not only contributed to a reduction of the proportions of native residents in the population of these municipalities, but also an equalisation of these proportions.

In general, we can state that there is a prevalent equalisation of the proportions of native residents at the municipal level. It is evident from Figure 1 and this thesis is also confirmed by the decreasing values of the standard deviations in different years: see Table 2. The median values (Tab. 2) reveal that for the first two points in time, native residents dominated in a majority of municipalities, while by 2011 the immigrant population prevailed in more than one half of the municipalities.

The intensity of the changes in the proportions of the native residents in the population of the municipalities is shown in Figure 2. An attempt was made to identify the differences in the two sub-periods (1991–2001 and 2001–2011). We can observe the frequency of the municipalities to be analysed within each category shown in intervals, which demonstrates the extent of the difference between the proportions of native residents in the populations of municipalities that occurred during the two decades. The width of the interval is the same, i.e. 5 pp.

The dynamics of change were differed greatly between the two periods. In the first decade, the proportion of native residents increased in 54% of the municipalities (3,403). In the second decade, we witness the opposite trend, as an increase in the proportion of native residents in the population of the municipalities occurs only in 13% of the municipalities (807). In the period 1991–2001, the highest number of municipalities can be found in the category of moderate growth (0.1 to 5.0 pp), but an only slightly lower number is associated with the category of a slight decline (–5.0 to 0.0 pp). Therefore, we can observe two opposite development trends. The second decade differs as the highest

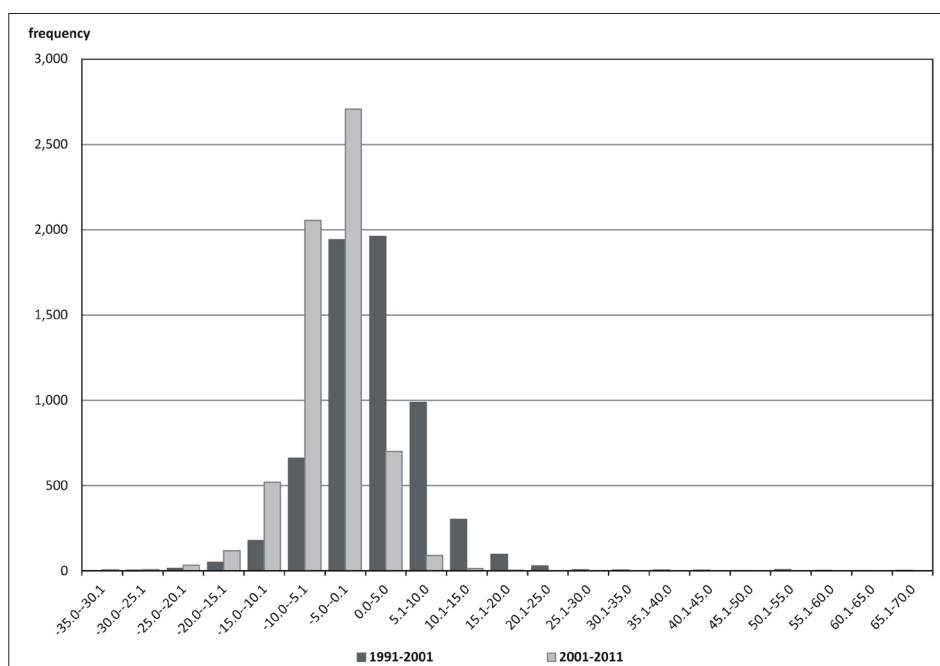


Fig. 2: Differences in the representation of native residents in Czech municipal populations for the inter-census periods 1991–2001 and 2001–2011. Sources: Růžková et al., 1995; Škrabal et al., 2005, 2013; authors' calculations



number (4,762; 76%) of the municipalities is associated with a decline in two categories (interval  $\{-5.0$  to  $0.0\}$  and the most plentifully represented interval  $\{-10.0$  to  $-5.1\}$ ). In the second period, an increase in the proportion of native residents of more than 10 pp only appears in less than 1% of the municipalities (17), while in the preceding period, it was more than 7% of the municipalities (456). In contrast, we can observe a decrease in the proportion of native residents of more than 10 pp in almost 11% of the municipalities (681), whereas in the previous period it was 4% of the municipalities (245). Generally, the upward trends in the development of the proportion of native residents in the population of individual municipalities causes a rather significant levelling of these values in the first decade. In the second decade, this levelling continues to be less intense. For this decade, the predominant reduction of the number of native residents in individual municipalities is considerable.

The development of regional differences in the structure of native residents in the Czech Republic is represented in Figure 3. The first map (1991–2001) depicts a dichotomy between the majority of borderland municipalities and the interior of the Czech Republic. The former municipalities are located in the border regions where German populations were found until the period after the Second World War. The eastern borderlands of the Czech Republic, in comparison with the rest of the border regions, differ and the patterns of development are closer to those in the interior. This is, of course, due to the absence of a German population and the preserved continuity of socio-historical development. In most inland municipalities, the development of the proportion of native residents in the municipalities oscillates around zero (0.0). In general, there is no significant increase in the proportion of native residents in the populations of the municipalities. Conversely, in the immediate hinterlands of some regional

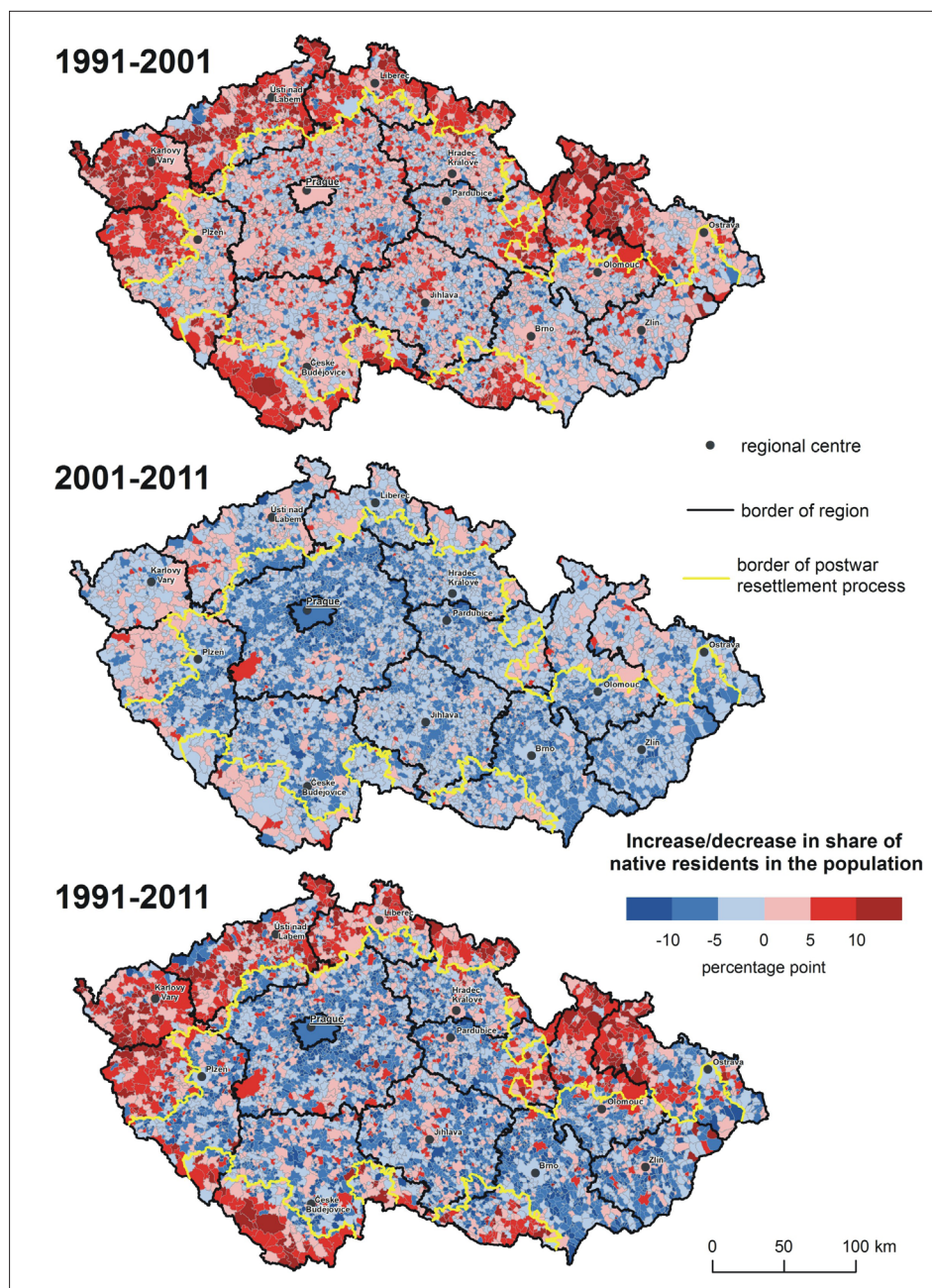


Fig. 3: The spatial distribution of changes in the proportions of native residents in the municipalities of the Czech Republic in the transitional period. Sources: Růžková et al., 1995; Škrabal et al., 2005, 2013; author's calculations

centres and particularly in the hinterland of Prague, we can identify municipalities with a significant decline in the proportion of native residents. This may have been caused by emerging residential suburbanisation process.

In the second decadal period, the above-discussed dichotomy is not nearly as pronounced. In the resettled borderlands, one still finds a majority of municipalities with an increase in the proportion of native residents, but far fewer than in the previous decade. In some borderland municipalities that can be described as tourism destinations, the decline in the proportion of native residents is more significant. In inland municipalities and borderland municipalities without new settlements, a drop in the proportion of native residents prevails. The highest levels of decline are mainly located in Prague and its immediate hinterland, likely due to increasing labour migration, as well as an intensified process of suburbanisation in its hinterland. The latter probably has its greatest effect on the hinterlands of regional centres, where there is also a relatively significant decline in the number of native residents. This second map also indicates that a significant decrease in the number of native residents began to occur in peripheral municipalities close to the boundaries of the regions. The decline in these municipalities has somewhat different reasons: in our opinion it is particularly caused by a negative difference between natality and mortality and negative net migration.

The third map (1991–2011) synthetically shows developments throughout the entire transitional period. Most notably, this map shows the above-mentioned dichotomy of the resettled borderland and the rest of the country. The development of the structure of native residents in the transitional period obviously differs in these geographic locations. The map also depicts that, in general, there is a decrease in the proportion of native residents in the Prague metropolitan area and in the suburbanised hinterlands of regional centres. It is also possible to assert a drop in the proportions of native residents in rural municipalities with a peripheral character situated near regional boundaries experiencing depopulation. In those rural municipalities with the highest percentage of native residents situated in traditional cultural and historical regions (Moravian Wallachia, Moravian Slovakia) at the eastern borderland, the proportion of native residents also decreases.

Given the general description of the patterns of change in native residents, above, we now can proceed to analyse the spatial variability of native residents and its development. A common method of measuring the spatial association rate, Moran's I (Moran, 1950), was used for this purpose. This method gives us information about the spatial pattern of the phenomenon being evaluated. Moran's I represents a global approach because it evaluates the analysed territory as a whole and ignores any spatial instability or local clusters. The results of this method are shown in Table 3.

Moran's I values indicate that the spatial pattern of the structure being evaluated tends to the clustering of spatial units with similar values. In the neighbourhood of municipalities with a high proportion of native residents in the population, there is a concentration of municipalities with similarly high proportions. Similarly, this also applies in the case of municipalities with a low proportion of native residents, which also neighbour municipalities with similarly low proportions. Based on a slight increase in the resulting values in the years under review, we can speak of a very modest evolution of the spatial pattern towards

more intensive clustering. This conclusion is also supported by analysis of the resulting Z-score values (Tab. 3). The Moran's I values can also be interpreted using hypothesis testing: establish the null hypothesis that there is no spatial autocorrelation of the proportion of native residents in the population of municipalities. The Z-scores in Table 3 indicate that the null hypothesis (level of significance = 0.01) must be rejected, as a statistically significant spatial autocorrelation within the structure being evaluated occurs in all years under evaluation. There is less than 1% likelihood that this clustered pattern could be the result of random chance. During the period under review there is also a very slight intensification of the spatial autocorrelation.

The local approach to the assessment of spatial autocorrelation considers the neighbouring effect (Anselin, 1995). Anselin's Local Indicators of Spatial Association (LISA) is a method that has the ability to determine deviations for each spatial unit in the area of interest from the global average of that territory. A further advantage is its ability to identify individual categories of spatial associations and identify spatial clusters of similar values within the area being studied. As a result, the internal spatial variability of the structure under consideration can be examined in a statistically significant way.

For our purposes, LISA was applied to all three years under review and the existence of five categories of spatial association was proven. The quantitative range of individual categories in individual years is shown in Table 3.

The spatial distribution of each category from the LISA analysis is shown in Figure 4. The first category is a high-high cluster. The municipalities in this category have an above-average proportion of native residents and the municipalities in their neighbourhood also show above-average proportions of native residents. The number of municipalities falling into this category stagnated during the transitional period. Within the entire period, this category is represented mostly by municipalities from the eastern part of the country. These municipalities are located in traditional Moravian regions (Moravian Wallachia, Moravian Slovakia) and in traditional Silesian regions (Hlučín region, Jablunkov region). This category is also

<b>Global spatial analysis</b>			
	1991	2001	2011
Moran's I	0.335	0.352	0.384
Z score	223.9	235.0	256.4
critical value	2.58	2.58	2.58
level of significance	0.01	0.01	0.01
<b>Local spatial analysis</b>			
Type of spatial association	Frequency of municipalities		
	1991	2001	2011
high-high cluster	1,654	1,646	1,695
high-low cluster	113	147	175
low-high cluster	247	247	266
low-low cluster	1,256	1,399	1,547
not significant	2,981	2,812	2,568

Tab. 3: Results of the analysis of spatial variability in the structure of native residents in the Czech Republic between 1991 and 2011

Sources: CZSO, 2014; Růžková et al., 1995; Škrabal et al., 2005, 2013. author's calculations



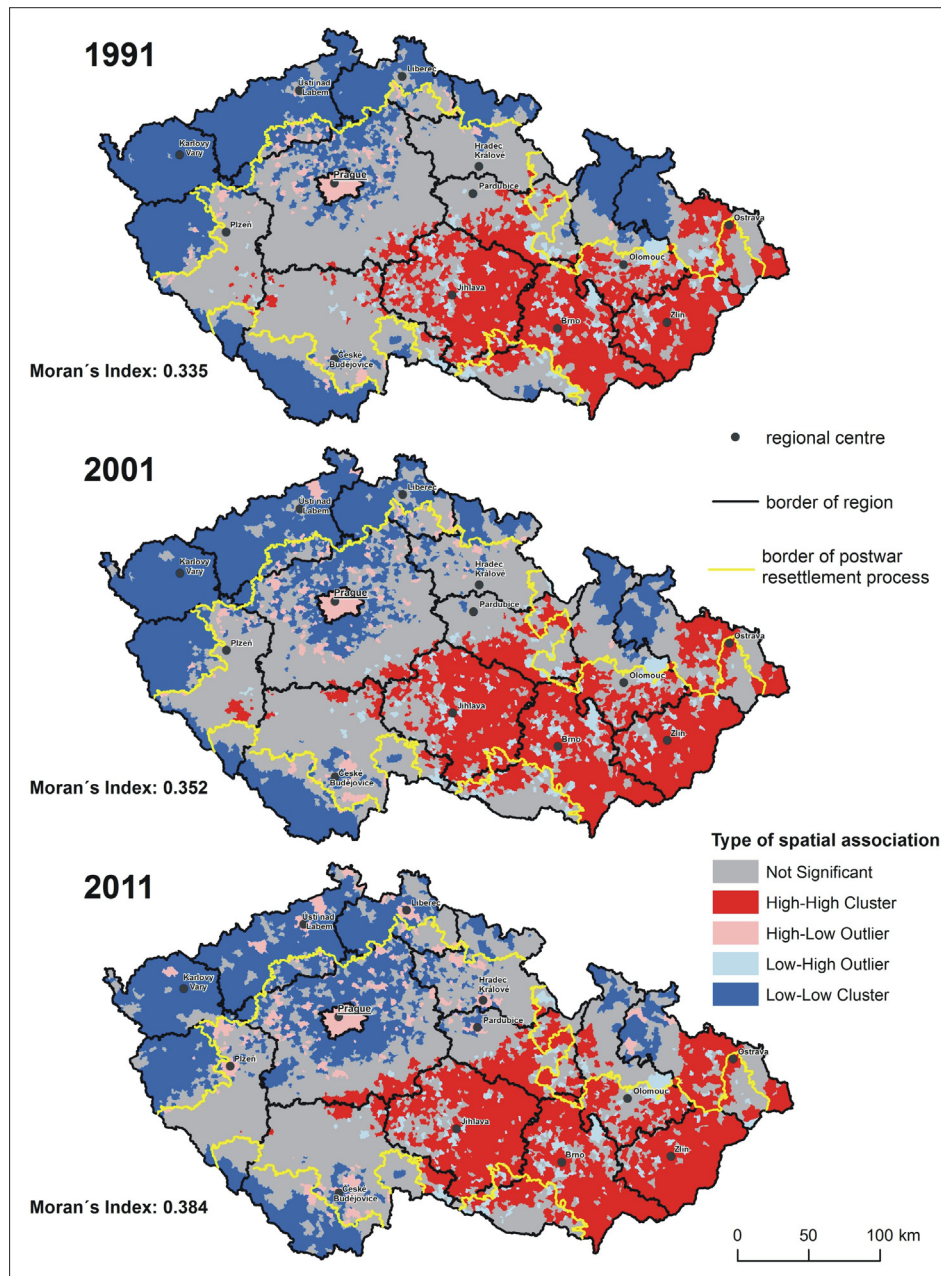


Fig. 4: Spatial patterns of native residents' structure in the Czech Republic in 1991, 2001, and 2011  
Sources: CZSO, 2014; Růžková et al., 1995; Škrabal et al., 2005, 2013. author's calculations

bound to the Moravian, i.e. eastern, part of the Vysočina Region. The spatial evolution of the category is very low. The most pronounced trend in this context is the gradual integration of some municipalities of the inner periphery (municipalities along the border of the Central Bohemian Region with the South Bohemian Region and the Vysočina Region), as well as municipalities that underwent a post-war exchange of inhabitants (the Zábřeh region and the so-called Hřebeč island – see Slovákova and Šerý, 2016).

The low-low category comprises municipalities with a below-average proportion of native residents that neighbour municipalities which also show below-average proportions of native residents. A gradual even increase in the number of municipalities belonging to this category is found. This category is mainly present in the northern, western and southern border regions of Bohemia, in the west of the Czech part of Silesia and in the northwest of Moravia. Their common denominator is the experience

of socio-historical discontinuity in the post-World War II period. During the transitional period, a change in the spatial layout of the cluster appears. There is a gradual perforation of the category in the above-mentioned regions, which is especially evident in the west of the Czech part of Silesia and in the northwest of Moravia. On the other hand, the cluster is growing rapidly as a result of developments in the hinterland of Prague.

The high-low category is the last numerous one. The municipalities comprising this cluster show above-average proportion of native residents, but they neighbour municipalities which have a below-average proportion of native residents. The number of municipalities in this category has increased slightly during the transitional period. Also, the municipalities in this category are most often located along the border defining the post-war settlement, especially in the region of northern and western Bohemia. In addition, this type of cluster is located in the metropolitan area of

Prague, and, during the transitional period, it is gradually extended by regional centres located in Bohemia, with the exception of Karlovy Vary. These facts can be connected to the on-going process of residential suburbanisation in the hinterland of Prague and these regional centres.

The low-high category includes municipalities with a proportion of native residents which is below the general average. These municipalities neighbour municipalities where the proportion of native residents is above-average. The size of this category rarely changes during the transitional era. The spatial stability of this cluster is mainly in Brno, where it can be linked to socialist industrialisation and contemporary residential suburbanisation. Furthermore, the cluster is stable in some municipalities in the western part of the Vysočina Region and around Jihlava.

The remaining municipalities do not belong to any of the above-mentioned categories, as no statistically significant spatial autocorrelation has been demonstrated. Generally, it can be concluded that the analysis shows a very sharp west-east dichotomy in terms of the proportion of native residents in the population of municipalities. Although there is a slight development of the clusters' spatial deployment, the dichotomy demonstrates a continuing stability during the transformation period.

## 5. Discussion and conclusions

The three research questions posed in the introduction are answered below.

With regard to the first research question, the non-spatial dimension of the structure of native residents is primarily connected with three important observations: (i) for the different developments in the two decades that are analysed, the continuous levelling of the proportion of native residents in the population of municipalities, and the gradual decrease in the values of these proportions, has been recorded; (ii) for the spatial dimension or variability of the structure of native residents, a spatial pattern that shows statistically significant clustering tendencies has been found. The clustered spatial pattern is stable during the transitional period and the degree of clustering shows a slightly increasing tendency; (iii) for the question concerning the spatial variability of the structure of native residents, the analysis shows a very sharp west-east dichotomy in the structure of native residents. This dichotomy is stable throughout the whole transitional period and the individual clusters only changed to a limited extent in time (in particular a shift of the low-low category from the border to the metropolitan area). The spatial differences in terms of the western part (Bohemia) / eastern part (Moravia and Silesia) suggested by Kučerová (2009) for native residents, seems to be demonstrated at this time. The findings also correspond with the more general conclusions of Blažek and Csank (2007) and with the regional division proposed by Chromý, Kučerová and Kučera (2009).

The analysis of the data from 1991, 2001 and 2011 shows that the mixing or co-residential status of the residents of Czech municipalities has increased significantly. In the most intensive way, the process has occurred in the metropolitan area of Prague and in the suburbanised hinterlands of regional centres. Based on these observations, it is possible to conclude that local belongings and the narratives of local and other spatial identities based on having roots in an area, as well as people's concepts of "home" (Feng, Breitung and Zhu, 2014), have been challenged by ever-increasing spatial

mobility. Inhabitants have more heterogeneous spatial backgrounds and the personal histories and processes of identification have become diversified (Paasi, 2002). Czech transitional society coincides with contemporary societies characterised by Antonsich (2010) by the co-presence of a plurality of forms of belonging. These forms are differently imbricated in space and variously constituted in relation to the permeability of their identity boundaries.

One other conclusion of note is that the mixing of the residents as mentioned in the previous paragraphs also influences scales of identification. According to Tomaney (2015) and Pollini (2007), the scales of identification to which we belong may be multiplying and changing. Gustafson (2013) adds that heightened rates of mobility may alter the scale at which one expresses belonging. Similar arguments are provided by Feng and Breitung (2018), who studied the ability of high mobility to modify our understanding of home and, specifically, its scales. On the other hand, little or no mobility may limit the opportunities for participation and identification in larger communities (Fried, 2000). In a transitional era, such factors may have concerned the inhabitants of the more traditional Eastern parts of the Czech Republic compared to those inhabiting the Western parts. In general, it is necessary not to omit the influences of mobility when we want to assess any problems of spatial belongings, attachments or identities in current Czech society.

The findings from this research have policy relevance. The assessment of the proportion of native residents and the development of their variability and spatial patterns seems to be of importance. The author argues that central institutions should keep collecting data regarding native residents. Despite the limitations of longitudinal municipal data, as broadly discussed in the methodological part of this paper, the data are worthwhile for dealing with issues such as spatial belonging, identification, 'sedentarism', etc. The proposal is to structure data on native residents based on their usual place of residence. Such data would definitely provide a more realistic account of the situation.

Local belonging can have individual and collective dimensions (Tomaney, 2015). The longitudinal municipal data used for the purposes of this research provide spatial information concerning the entire transitional society. Unfortunately, the analysis of the data is not able to explain specifically the individual dimension of local belonging and its spatial scales. Understanding this individual dimension and its spatial scales, among either native residents or non-native residents, would require different data and methodologies. Another open question concerns the mutual relationship between native residents and social capital. Do native residents support the building of strong social capital for local development? Last but not least, research on local belonging within municipalities which have experienced the most intensive mixture of native residents and non-native residents would be desirable.

## Acknowledgements

*The author is grateful to acknowledge the support received from the students' grant project titled "Regions and cities: analysis of development and transformation" funded by the Palacký University Internal Grant Agency (IGA\_PrF\_2018\_018). I would also like to thank two anonymous referees for their thoughtful comments regarding this manuscript.*



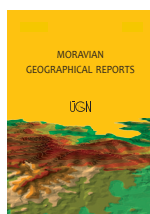
## References:

- ADEY, P. (2010): *Mobility*. London and New York, Routledge.
- ANSELIN, L. (1995): Local Indicators of Spatial Association – LISA. *Geographical Analysis*, 27(2): 94–115.
- ANTONSICH, M. (2010): Searching for Belonging – An Analytical Framework. *Geography Compass*, 4(6): 644–659.
- BLAŽEK, J., CSANK, P. (2007): The West-East gradient and regional development: the case of the Czech Republic. *Acta Universitatis Carolinae Geographica*, 40(1–2): 89–108.
- CASSIDY, A., MCGRATH, B. (2015): Farm, place and identity construction among Irish farm youth who migrate. *Journal of Rural Studies*, 37: 20–28.
- CHROMÝ, P., JANŮ, H. (2003): Regional identity, activation of territorial communities and the potential of the development peripheral regions. *Acta Universitatis Carolinae-Geographica*, 38: 105–117.
- CHROMÝ, P., KUČEROVÁ, S., KUČERA, Z. (2009): Regional identity, contemporary and historical regions and the issue of relict borders – the case of Czechia. *Regions and Regionalism*, 9(2): 9–19.
- CRESSWELL, T. (2002): Introduction: theorizing place. In: Verstraet, G., Cresswell, T. [eds.]: *Mobilizing Place, Placing Mobility* (pp. 11–32). Amsterdam, Rodopi.
- CRESSWELL, T. (2006): *On the move: mobility in the modern Western world*. London, New York, Routledge.
- CZSO (2014): *Obyvatelstvo České republiky podle místa narození*. Prague, CZSO.
- HAMPL, M., DOSTÁL, P., DRBOHLAV, D. (2007): Social and cultural geography in the Czech Republic: under pressures of globalization and post-totalitarian transformation. *Social & Cultural Geography*, 8(3): 475–493.
- DOSTÁL, P., HAMPL, M. (2004): Geography of post-communist transformation and general cycle of regional development: experiences of the Czech Republic in a global context. *European Spatial Research and Policy*, 11(1): 7–29.
- ELDEN, S. (2007): There is a politics of space because space is political. *Radical Philosophy Review* 10: 101–116.
- FENG, D., BREITUNG, W. (2018): What makes you feel at home? Constructing senses of home in two border cities. *Population, Space and Place*, 24(3). DOI: 10.1002/psp.2116.
- FENG, D., BREITUNG, W., ZHU, H. (2014): Creating and defending concepts of home in suburban Guangzhou. *Eurasian Geography and Economics*, 55(4): 381–403.
- FRIED, M. (2000): Continuities and discontinuities of place. *Journal of Environmental Psychology*, 20: 193–205.
- GERLACH, D. (2010): Beyond Expulsion. The Emergence of “Unwanted Elements” in the Postwar Czech Borderlands, 1945–1950. *East European Politics and Societies*, 24(2): 269–293.
- GOLLEDGE, R. G., STIMSON, R. J. (1997): *Spatial behavior: a geographic perspective*. New York, The Guilford Press.
- GUSTAFSON, P. (2001): Meanings of place: everyday experience and theoretical conceptualizations. *Journal of Environmental Psychology*, 21(1): 5–16.
- GUSTAFSON, P. (2009): Mobility and territorial belonging. *Environment and behavior*, 41(4): 490–508.
- GUSTAFSON, P. (2013): Place attachment in the age of mobility. In: Manzo, L. C., Devine-Wright, P. [eds.]: *Place attachment: Advances in Theory, Methods and Applications*. London, Routledge.
- HAY, R. (1998a): A rooted sense of place in cross-cultural perspective. *The Canadian Geographer*, 42(3): 245–266.
- HAY, R. (1998b). Sense of place in developmental context. *Journal of Environmental Psychology*, 18: 5–29.
- KUČEROVÁ-KULDOVÁ, S. (2008). Contribution to the study of regional identity reproduction process – the case of the Czech resettled borderland. In: Szabó, P., Hédl, R. [eds.]: *Human nature: studies in historical ecology and environmental history* (pp. 86–97). Průhonice, Institute of Botany of the ASCR.
- KUČEROVÁ, S. (2009): Rodáci a rodáctví. In: Heřmanová, E., Chromý, P. [eds.]: *Kulturní regiony a geografie kultury* (pp. 100–108). Prague, ASPI.
- KULDOVÁ, S. (2005): Příspěvek ke kulturněgeografickému výzkumu: možnosti hodnocení kulturních aspektů pomocí statistických metod. *Geografie – Sborník ČGS*, 110(4): 44–58.
- MCCOOL, S. F., MARTIN, S. R. (1994): Community Attachment and Attitudes Toward Tourism Development. *Journal of Travel Research*, 33: 29–34.
- MORAN, P. A. P. (1950): Notes on continuous stochastic phenomena. *Biometrika*, 37: 17–23.
- NETRDOVÁ, P., NOSEK, V. (2017): Exploring variability and geographical patterns of population characteristics: regional and spatial perspective. *Moravian Geographical Reports*, 25(2): 85–94.
- PAASI, A. (1986): The institutionalization of regions: a theoretical framework for understanding the emergence of regions and the constitution of regional identity. *Fennia*, 164(1): 105–146.
- PAASI, A. (2002): Bounded spaces in the mobile world: deconstructing “regional identity”. *Tijdschrift voor Economische en Sociale Geografie*, 93(2): 137–148.
- PAASI, A. (2003): Region and place: regional identity in question. *Progress in Human Geography*, 27(4): 475–485.
- POLLINI, G. (2007): Elements of theory of place attachment and socio-territorial belonging. *International Review of Sociology*, 15(3): 497–515.
- RILEY, R. B. (1992): Attachment to the ordinary landscape. In: Altman, I., Low, S. [eds.]: *Place attachment* (pp. 13–35). New York, Plenum Press.
- RŮŽKOVÁ, J. et al. (1995): *Sčítání lidu, domů a bytů 1991: pramenné dílo*. Prague, CZSO.
- ŠANDA, R. (2015): Obvyklý a trvalý pobyt ve sčítání lidu 2011. *Demografie*, 57(2): 113–126.
- SEMIAN, M., CHROMÝ, P. (2014): Regional identity as driver or barrier in regional development. *Norsk Geografisk Tidsskrift*, 68(5): 263–270.
- SHELLER, M., URRY, J. (2006): The new mobilities paradigm. *Environment and Planning A*, 38: 207–226.
- ŠIFTA, M., CHROMÝ, P. (2017): The importance of symbols in the region formation proces. *Norsk Geografisk Tidsskrift*, 71(2): 98–113.
- ŠKRABAL, J. et al. (2005): *Sčítání lidu, domů a bytů 2001: pramenné dílo*. Prague, CZSO.

- ŠKRABAL, J. et al. (2013): Sčítání lidu, domů a bytů 2011: pramenné dílo. Prague, CZSO.
- SLOVÁKOVÁ, P., ŠERÝ, M. (2016): Narrative interviews in research on post-war socio-historical processes as formative factors of the regional identity of the population. Case study of the Svitavy region (Czech Republic). *Hungarian Geographical Bulletin*, 65(1): 27–42.
- THEODORY, G. L. (2004): Exploring the Association between Length of Residence and Community Attachment: A Research Note. *Southern Rural Sociology*, 20: 107–122.
- TOMANEY, J. (2012): Parochialism – a defence. *Progress in Human Geography*, 37(5): 658–672.
- TOMANEY, J. (2015): Region and place II: Belonging. *Progress in Human Geography*, 39(4): 507–516.
- TUAN, Y. F. (1975): Place: an experiential perspective. *The Geographical Review*, 65(2): 151–165.
- VAINIKKA, J. T. (2015): Reflexive identity narratives and regional legacies. *Tijdschrift voor Economische en Sociale Geografie*, 106(5): 521–535.
- WANG, F. (2014): *Quantitative Methods and Socio-Economic Applications in GIS*. Boca Raton, CRC Press.

**Please cite this article as:**

ŠERÝ, M. (2018): Spatial patterns of the variability of native residents in a transitional society: The case of the Czech Republic. *Moravian Geographical Reports*, 26(4): 273–284. Doi: 10.2478/mgr-2018-0022.



# The preferences of residents and tourists for cultural and architectural heritage in a rural landscape: The case of Zlatna Greda, Croatia

Dina STOBER<sup>a\*</sup>, Ivana BRKANIĆ<sup>a</sup>, Lucija LONČAR<sup>a</sup>

## Abstract

Rural areas of the Republic of Croatia are experiencing abandonment, which is especially intensive in the eastern part of the country. This paper aims to provide insights into places with specific spatial and functional characteristics, pustara settlements, within the rural landscape of the Baranja region, presenting their cultural and architectural heritage that needs comprehensive protection and conversion. The redevelopment potential, as well as the negative significance of abandonment of these sites, indicates the need for identifying the characteristics of these settlements: the tangible value of its built facilities and open spaces, its movable cultural heritage, as well as its intangible values. The main objectives were to determine desirable tangible and intangible pustara values by investigating place attachment among former pustara residents, and to provide information on domestic tourists' preferences in visiting these settlements. The results indicate a common preference among former pustara residents and tourists for its architectural heritage: e.g. its settlement as a spatial unit and its parks. Additionally, tourists expressed preferences for recreational and entertainment facilities. Common interests, as well as highly expressed needs among former inhabitants and tourists, present the basis for establishing new functions and redevelopment plans.

**Keywords:** cultural and architectural heritage, pustara settlement, place attachment, tourist motivation, adaptive reuse, Baranja rural landscape, Croatia

**Article history:** Received 29 March 2018, Accepted 11 September 2018, Published 31 December 2018

## 1. Introduction

The state of small settlements in predominantly agricultural landscapes represents an important issue of the sustainability of the landscape. Recent international documents have emphasised the maintenance of viability and vitality in rural settlements (EU Action for Smart Villages, 2017; Cork Declaration, 2016).

In the research arena, the dynamics of the occurrence and disappearance of the functions of rural areas were monitored through regional-level studies, and the results revealed two trends. Rural areas that are more resilient, more adaptive and where changes in the economy of the village do not result in drastic modifications and the disappearance of the villages, reflect diversification of functions, population growth, the phenomenon of second homes, and the urban-rural weekly rhythm dynamics. In this scenario, urban people in their free time seek contact with the natural landscape, traditional culture and a healthier life. On the other hand, a continuous decrease in activity and in the number of people shows a negative trend resulting in disappearing settlements, the

aging of the population, a decline in social networks, changes in the supply and services of the village, as well as a decline in the physical structure (Lasanta et al., 2017; Lasanta, Nadal-Romero and Arnáez, 2015). Land abandonment represents one of the major land-use changes in Europe since the turn of the 19<sup>th</sup> century, mostly in extreme geographic environments (such as mountains and semi-arid areas), and more recently in agricultural landscapes as well (Alcantara et al., 2013; Lasanta et al., 2017; Lasanta, Nadal-Romero and Arnáez, 2015; Pedroli, Antrop and Pinto Correia, 2013).

Among Eastern European countries, Pointereau et al. (2008) have pointed out that farmland abandonment is especially due to the impact of historical changes and economic factors, claiming that the transition to free-market economies is the main driver of farmland abandonment. Pedroli, Antrop and Pinto Correia (2013) also claim that the two main drivers for landscape change are the market policy agenda and the sustainability policy agenda. According to a recent global economic analysis, Croatia is a high-income country with a “steady growth momentum” (WBG, 2017)

<sup>a</sup> Department for Architecture and Urban Planning, Faculty of Civil Engineering and Architecture Osijek, Josip Juraj Strossmayer University of Osijek, Croatia (\*corresponding author: D. Stober, e-mail: [dstober@gfos.hr](mailto:dstober@gfos.hr))

and belongs to the group of countries that rely on external funding. Declining rural populations in Croatia have been a continuing trend from the late 1990s, while the degree of urbanisation shows a positive trend (Eurostat, 2016). Our study area is situated in this national socio-economic and environmental context, in the eastern part of the country.

Croatia signed and adopted the European Landscape Convention (ELC, Council of Europe, 2000) in 2003, which defines landscape as an area perceived by people, whose character is the result of the action and interaction of natural and/or human factors (Article 1a). This broad concept of landscape embraces not only the natural elements but also the people (Philips, 2015). The question is: What do we perceive in landscapes and what can we “read” from interactions with it? As Greider and Garkovich (1994) elaborate, landscapes are symbolic environments that extend beyond aesthetics and scenery, localities in which we inscribe our beliefs and values and then again define ourselves with regard to place and space. The phenomenon of perceiving landscape differently has already been presented in several studies on perceiving the rural environment as wilderness and nature (Buijs, 2009; Buijs et al., 2012). The cultural construct of natural elements and the landscape reveals the need for assessing landscape perception with regard to local history, different stakeholders, groups and interests.

Therefore, the present study will interpret nature and natural elements as open space within the dichotomy of human-made space that tourists tend to visit during a vacation for bonding with nature. The term “rural landscape” mainly referring to landscape as defined in ELC, will be used in terms of visual perception, taking in the notion that most Europeans perceive landscape as containing a human or cultural element (Council of Europe, 2000). As seen in the study by Jacobsen and Tommervik (2016), there can be two reasons for essential tourist activities: sightseeing; and an intention to study the values and motives attached to the physical assets of the abandoned settlement or landscape.

The focus of this research is on the potential benefits of tourism for specific settlements in the eastern part of Croatia, *pustara settlements* that are gradually being abandoned. A *pustara settlement* is a planned agricultural settlement, built at the turn of the 19<sup>th</sup> century, and situated in Osijek-Baranja County in the eastern part of Croatia. These settlements differ from traditional Slavonian villages in terms of their spatial organisation, the appearance of the built environment, infrastructure and the existing facilities. The nearly 50 families that lived in the *pustara settlement* had better living conditions than those in

traditional villages (Bošnjak, Stober and Brkanić, 2015). Settlements contained administrative buildings, residential buildings for workers, public and industrial buildings, and, according to plans, areas for recreation and green infrastructure organised mostly across an orthogonal street line (see Figs. 1a and 1b). The network of *pustara settlements* was interconnected by a narrow-gauge railway. These settlements form a significant physical element in the rural landscape, and they carry great architectural, spatial, historical and cultural values. The population that holds the culture and memory of the settlements has since long located away from the settlements, but retains their memory by organising and gathering in informal associations. The overall negative trend is a common feature of every *pustara settlement*. If measures are not taken for their protection and re-use, they will disappear.

Such redevelopment potential, as well as the negative significance of abandonment of *pustaras*, indicates the need for identifying the characteristics of these settlements: the value of built facilities and open spaces (immovable cultural heritage); movable cultural heritage; and intangible cultural heritage (Act on the Protection and Preservation of Cultural Heritage, 2017). Using investigations of place attachment among former *pustara* residents, the objective of this research is to determine preferences for the type of heritage rooted in the social, cultural and environmental attributes of these communities, so that elements of the tangible and intangible heritage of the settlement can be identified and protected. A second objective of this project is to provide information on tourists’ reasons for visiting a *pustara settlement*, as well as their motivations and preferences for travelling: such information can lead to the planning of diverse services for tourists at these sites.

Our research questions were as follows:

- i. Can place attachment among former *pustara* residents be identified?
- ii. Are there any *pustara* constitutive characteristics and parts that can be identified to be of common interest to former inhabitants and tourists? And
- iii. What kind of tourist motivations can be found among tourists visiting a *pustara settlement*?

The results of two empirical studies are presented here. The first one was conducted with former residents gathered by a non-governmental organisation to speak about their memories of *pustara settlements*; and the second one was conducted with tourists in the Zlatna Greda, an example of a revitalised *pustara settlement* in Baranja, Croatia. The main

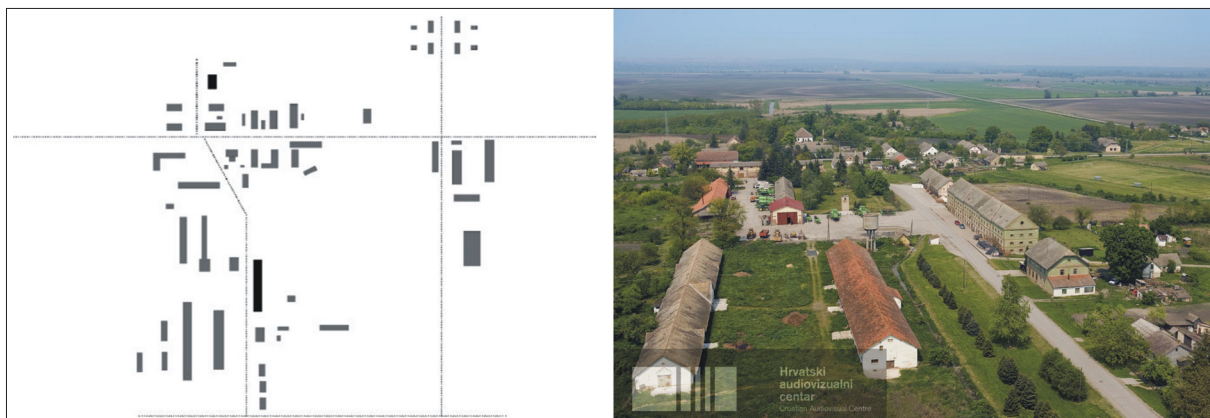


Fig. 1: Scheme of the *pustara Mirkovac* (a) and an aerial view of the *pustara Mirkovac* (b)  
Sources: a) authors’ drawing; b) HAVC Filming in Croatia



focus is on the former residents' and visitors' perceptions and preferences for a *pustara settlement's* constitutive elements and its formerly identified values (Bošnjak, Brkanić and Stober, 2015). The study aims to highlight the importance of research on different stakeholders' preferences, which can influence the future development of the place and consequently its space representation, its landscape.

## 2. Theoretical background

### 2.1 Place attachment

The term “place attachment” is a concept in environmental psychology that generally explores links between people and places. According to Giuliani (2003), an affective bond with places was first mentioned by Fried in 1963. The scope of research on this topic has been explored by numerous scientists from different fields (e.g. Altman and Low, 1992; García-Martín, Plieninger and Bieling, 2018; Giuliani, 2003; Gross and Brown, 2008; Huber and Arnberger, 2015; Lu, Lin and Yeh, 2018; Manzo and Perkins, 2006; Prayag and Del Chiappa, 2016; Ramkissoon, Smith and Weiler, 2013; Scannell and Gifford, 2010; Stefaniak, Bilewicz and Lewicka, 2017), and hence it can be defined as highly interdisciplinary. Altman and Low (1992) conducted a study in which they established different research frames rooted in different disciplines. They also considered attachment to a variety of places (e.g. homes, neighbourhoods, plazas, landscapes) and at all life stages (e.g. childhood, middle years and later years). Manzo and Perkins (2006) stated that negative emotions could provide a good understanding of place attachment. Further, Scannell and Gifford (2010) defined place attachment as a three-dimensional person–process–place framework to be used in theoretical and practical domains.

On the contrary, Lu, Lin and Yeh (2018) categorised the characteristics of place attachment under three other dimensions: personal context, community context and environment context. In addition, our literature review has shown two important factors describing the term “place attachment”: place dependence and place identity (Gross and Brown, 2008; Huber and Arnberger, 2015; Prayag and Ryan, 2012; Ramkissoon, Smith and Weiler, 2013). According to Prayag and Ryan (2012) and Ramkissoon, Smith and Weiler (2013), for example, place identity has the strongest impact on the term place attachment. Lu, Lin and Yeh (2018) found that personal context is the best criterion for place attachment. In contrast, García-Martín, Plieninger and Bieling (2018) learned that place attachment is linked to a desire to participate in making decisions about the local landscape. Within the last two decades, there has been an increasing number of studies on place attachment, with many of them using questionnaires to collect data and produce new knowledge (García-Martín, Plieninger and Bieling, 2018; Huber and Arnberger, 2015; Lu, Lin and Yeh, 2018; Prayag and Ryan, 2012; Stefaniak, Bilewicz and Lewicka, 2017). Over the last few years, there has also been an increase in research on place attachment related to tourism (Gross and Brown, 2008; Lu, Lin and Yeh, 2018; Prayag and Del Chiappa, 2016; Prayag and Ryan, 2012; Ram, Björk and Weidenfeld, 2016; Ramkissoon, Smith and Weiler, 2013; Yuksel, Yuksel and Bilim, 2010). Moreover, they (e.g. Gross and Brown, 2008; Prayag and Del Chiappa, 2016; Yuksel, Yuksel and Bilim, 2010) have used structural equation modelling to analyse data collected from questionnaires, which is the same approach used in research on place attachment.

The link between the term “place attachment” and time was researched over the last decade in studies such as Hernandez et al. (2007), Smaldone (2006), Smaldone, Harris and Sanyal (2005), which investigated the correlation between time and place attachment in the context of time spent in a specific place. These studies confirmed that people who stayed longer in a certain place or had made several visits to the same place, are more attached to the place. Hernandez et al. (2007) found that place attachment evolves before place identity. The life stages of involved stakeholders are also connected to place attachment (Smaldone, 2006); that is, every period in people's lives can be associated with a particular place. In research by Kyle, Mowen and Tarrant (2004), it was suggested that adding energy to a place by performing hard labour or intense activities in the place, forms stronger bonds between people and places. The main wellhead of data and understanding of place attachment in the context of time were questionnaires, followed by statistical analysis (Hernandez et al., 2007; Smaldone, 2006; Smaldone, Harris and Sanyal, 2005).

### 2.2 Tourist motivation and heritage

Information on tourist travelling preferences, especially reasons for travelling and desirable destinations, may be useful when predicting the tourist potential of a specific location. During the first two decades of the twenty-first century, tourist motivation was widely studied in general by Antón, Camarero and Laguna-García (2014), Farmaki (2012), Lee (2015) and Pratminingsih, Rudatin and Rimenta (2014). Poria, Butler and Airey (2004) and Poria, Reichel and Biran (2006) studied tourist motivation with regard to heritage. Antón, Camarero and Laguna-García (2014) and Pratminingsih, Rudatin and Rimenta (2014) examined the effects of previous experiences and influences of destination image and motivation on tourists' revisit intention, correlated with satisfaction. Lee (2015) obtained results about tourist motivation in closed spaces, specifically in an old railway station converted into a restaurant. This study, also based on questionnaires and descriptive statistical analysis, showed that nostalgia was the key link between personal emotions and memorable experiences. Farmaki (2012) examined rural tourist motivation to further enhance understanding of rural tourism by utilising unstructured interviews.

In addition, Farmaki (2012) divided tourists into three groups: (i) purpose of travel, (ii) interests and (iii) the level of interaction with the rural environment, and discovered that no tourists, whether domestic or foreign, visited a rural area for its authenticity or traditionalism. Instead, the main reason for visiting a rural area was to interact with nature or wilderness, or for its “rural idyll” (Buijs, 2009). Poria, Butler and Airey (2003, 2004) and Poria, Reichel and Biran (2006) investigated tourist motivation with regard to heritage sites. Their studies were based on statistical analysis using data collected from surveys. The first study (Poria, Butler and Airey, 2003) showed that motivation, behaviour and perception are all factors connected to the development of the image of the site. In other words, people with emotional links to a site will revisit the site. In their next study, Poria, Butler and Airey (2004) investigated the reasons for tourist intentions to visit places with heritage attributes. The reasons were divided into three groups on the basis of motivation: (i) heritage experience; (ii) learning history; and (iii) recreational experience. They found that tourists' perceptions of a heritage place's characteristics are more important than the actual characteristics of the site. They also found that tourists like to learn about their own heritage. In

a following study, Poria, Reichel and Biran (2006) discovered an interconnection among tourists, heritage and visiting sites. They split tourist motivation according to specifics into three groups: (i) willingness to feel connected to the history presented; (ii) willingness to learn; and (iii) motivation not linked to the historic attributes of the destination. People show more interest in a visiting a site if they can recognise the site as being a part of their own heritage.

The literature on landscape perceptions among tourists shows two models based on preference for prototypes and preference for differences (Fyhri et al., 2009). This aspect is fundamental to the case study of *pustara settlements* as they present a unique spatial representation. The aim of this study is to explore the main preferences of former residents and to attempt to link expressed values with the physical representation of the settlement.

### 3. Study area

#### 3.1 The regional context of the *pustara settlements*

Baranja is a geographical territory in eastern Croatia that covers an area of 30,000 hectares. The area lies between the river bodies of the Danube and the Drava River. It is

characterised by lowland, and land use is predominantly agriculture (48% of the total area). The area is a part of the Danube-Drava-Mura UNESCO biosphere reserve as well as the Balkan Green Belt<sup>1</sup> and NATURA 2000<sup>2</sup>. Some 40,262 residents (CBS, 2017) are distributed in one town and eight small municipalities. Demo-geographic changes in the Baranja rural area have become intense over time, and these were attributed to the border position of the region, its multi-ethnic population, its macro location and the geographic phenomena of the Danube and the Drava that change this space with their water bodies.

Presently, the Baranja area has experienced intensive polarisation of the space around the infrastructure corridor in the north-south direction. Locations in traffic-friendly places over time became the centres of an increasingly strong exchange of goods and services and places of major and numerous functions. Almost half of the total population of Osijek Baranja County (40.52%) is concentrated in the central part of geographic “triangle,” along with the main road and the railway infrastructure (CBS, 2017; see Fig. 2). The rest of the “triangle” has experienced “sociodemographic depression” (Lončar-Vicković and Stober, 2010; Šašlin, 2005). The *pustara settlements* are found in the remaining area.

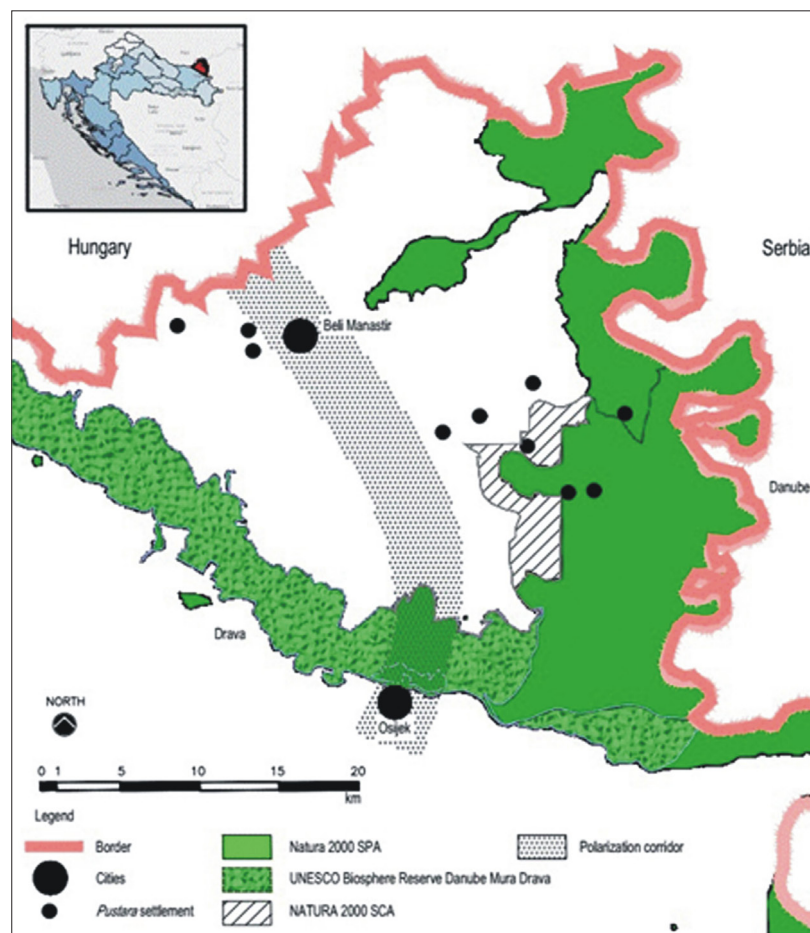


Fig. 2: Map of Baranja Region in Eastern Croatia (top left) with the *Pustara Settlements Network*  
Source: *Map Guide of The Osijek Baranja County*, authors' adaptation

<sup>1</sup> The Balkan Green Belt is the southern part of the European Green Belt that includes nature conservation activities in the territories from northern Europe to the Black Sea in the south. This is also the area of the former Iron Curtain, which forms a corridor of habitats for an exceptional diversity of species, ancient forests and swamps, traditionally cultivated landscapes, wild mountain ranges and riverscapes (EURONATUR, 2018) ([www.euronatur.org](http://www.euronatur.org), last accessed June 14, 2018).

<sup>2</sup> NATURA 2000 is the ecological network of protected areas in the EU and the largest coordinated network of conservation areas in the world (MZOIP, 2018). (<http://www.mzoip.hr/hr/priroda/ekoloska-mreza-natura-2000.html>, last accessed June 14, 2018).



### 3.2 Case study: Zlatna Greda

Zlatna Greda is located close to the eastern Croatia-Serbia border near the Danube River. According to the last census 2011 (CBS, 2017), only five people permanently live in Zlatna Greda, which represents one of some 70 locations specified as *pustara settlements*. A good revitalisation practice can be seen in the new usage of the administrative building in Zlatna Greda, used by the Eco Centre. The building has been restored following the orders of the conservation service led by the Ministry of Culture of Croatia, suitably converted and equipped so that it represents a potential core for the future restoration and revitalisation of the entire complex. The area of the whole *pustara settlement* (see Fig. 3a) was declared a protected cultural good of the Republic of Croatia in 2011. An association for protecting nature and the environment – “Green Osijek” – has, since 2003, developed programs in Zlatna Greda for preserving natural resources and the traditions of the Middle Danube area. They organise educational visits to nature parks according to the principles of eco-tourism. Activities are centralised in the completely revitalised administrative building: the House in Nature Zlatna Greda.

The ground floor of the old administrative building has been reconstructed to house a restaurant as well as a conference hall, while the loft of the building contains accommodation facilities. In the park surrounding the building, there is an adrenaline park and a children's playground (see Fig. 3b). The re-purposed administrative building is a healthy core for future renewal and revitalisation of the entire complex.

In the year 2016, Zlatna Greda had approximately 6,000 tourists. Up to September 2017, there were 2,800 tourists who were registered for any one of the activities (staying overnight, using the adrenaline park, as guests in the restaurants, etc.) and 4,000 tourists that only used the open spaces: walkers, cyclists, etc. (Dinko Pešić, Eco Centre Zlatna Greda, personal communication, September 5, 2017).

## 4. Methods

Previous research has highlighted the need for preservation of the material testimonies of *pustara settlements*, as well as the intangible heritage left behind by former residents (e.g. Bošnjak, Stober and Brkanić, 2015). Detailed interviews also pointed to a strong collective memory connected to the past social life in the settlement. In this paper, we discuss place attachment to *pustara settlements* among former residents, in order to argue for the preservation of these settlements and to identify valuable elements of the location

to be preserved in the development plans. Place attachment is a measure of the psychological bonds that people form with places (Huber and Arnberger, 2015; Kaltenborn, 1998; Kyle, Mowen and Tarrant, 2004; Williams and Vaske, 2003). Tourist motivation is defined as the reason to visit an in situ representation of heritage sites with a distinctive perception of it (Poria, Butler and Airey, 2004). Tourist motivation is used as a tool for determining tourist preferences in visiting *pustara settlements* and those *pustara* characteristics that appeal to them. These data can serve as input information when selecting suitable tourist services for these spaces.

The data collected for the project and the analytical procedures used, can be summarised as follows: categorical data are represented by absolute and relative frequencies; for numerical data, the median and the interquartile range are used; the normality of distributions of numeric variables was tested using the Shapiro-Wilk test; differences between numeric variables of the two independent groups were tested using the Mann-Whitney U test, and among three and more groups using the Kruskal-Wallis test. All p values are two-sided, with level of significance set at  $\alpha = 0.05$ . For statistical analysis, the statistical program MedCalc Statistical Software version 14.12.0 (MedCalc Software bvba, Ostend, Belgium; <http://www.medcalc.org>; 2014) was used.

### 4.1 Data collection

Research was conducted using two studies:

1. among former *pustara* residents, and
2. among *pustara* tourists.

The first study included two non-governmental groups: “*Pustara roots*” (in Croatian: *Korijeni pustare*) and “*Pustara residents*” (in Croatian: *Pustaraši*), established in 2012 and 2013 ( $n = 57$  respondents). A questionnaire survey was carried out using a network link that was available on the social network of the non-governmental groups from March 2015 to August 2016. The small number of respondents can be explained by the fact that the respondents present a specific group with narrow interests. The second study was conducted on site in Zlatna Greda, from June 2016 to June 2017. Structured questionnaires were used and distributed in printed form by hand to *pustara* tourists ( $n = 124$  respondents).

### 4.2 Questionnaire survey

Two different questionnaires in the Croatian language were provided, one for former *pustara* residents and the other for *pustara* visitors. The first questionnaire asked former



Fig. 3: a) Aerial view of Zlatna Greda, b) Photograph of the administration building with the adrenaline park  
Sources: a) HAVC Filming in Croatia; b) Eco Centre Zlatna Greda, with permission

*pustara* residents for socio-demographic data, as well as information related to their life spent in the *pustara* (when, how long, working or not, etc.). Additionally, questions were asked about their preferences for the heritage type linked to *pustara*, and place attachment. Place attachment was measured by 13 items that revealed place identity, place dependence and family legacy identity (according to Kil et al., 2012; Williams and Vaske, 2003): responses were scored on a five-point Likert scale, where 1 represented “Strongly disagree” and 5 represented “Strongly agree.” Open questions on associations with the *pustara*, as well as additional comments provided the basis for a qualitative analysis on memory holdings rooted in the social, cultural, and environmental attributes of their former community.

The second questionnaire was based on previous research about the links among tourists, heritage and reasons for visiting heritage sites. Tourist motivation was measured by 17 items for three sub-dimensions: heritage/emotional experience; recreational experience; and cultural/educational experience (according to Poria, Butler and Airey, 2004). Responses were coded on a five-point Likert scale where 1 represented “Strongly disagree” and 5 represented “Strongly agree.” Open-ended questions provided qualitative data on tourists’ knowledge about the *pustara* and their preferences about the interests of the *pustara settlement*. The questionnaire asked for socio-demographic data as well.

#### 4.2.1 Sample 1 – Pustara settlements residents

The gender and age distributions of the sample showed that 57% of the respondents were female and about 61% of respondents were 45 years and older (Tab. 1). Almost 90% of respondents had lived in the *pustara settlement*, although only 28.1% of them were born there. Over one half of the respondents (51%) had spent only their childhood in the

Variable		N	%
Gender	Male	24	42.9
	Female	32	57.1
	Total	56	
Age	Less than 45	22	38.6
	45 and more	35	61.4
	Total	57	
Continues to live in <i>pustara</i>	Yes	6	10.5
	No	51	89.5
	Total	57	
Time spent at <i>pustara</i>	< 5 years	2	4.1
	5–10 years	8	16.3
	11–15 years	9	18.4
	> 15 years	30	61.2
	Total	49	
Life period spent in <i>pustara</i>	Childhood	25	51.0
	Childhood and adulthood	6	12.2
	Only adulthood	18	36.8
	Total	49	
Worked in <i>pustara</i>	Yes	30	54.5
	No	25	45.5
	Total	55	

Tab. 1: Characteristics of respondents (former residents – survey 1). Source: authors’ survey

*pustara settlement* (under 18 years of age), while more than 36% of them lived there only as an adult. Only one tenth of respondents spent a major part of their life in the *pustara settlement* (their childhood and most part of their adult life) and 55% of all respondents worked in the *pustara*. More than half of them lived in the *pustara settlement* for more than 15 years while only one tenth of respondents continued to live there.

#### 4.2.2 Sample 2 – Visitors to Zlatna Greda *pustara settlement*

The tourist group sample contained a relatively equal gender distribution, as 55% of the respondents were female. About 79% of respondents were younger than 45 years (see Tab. 2). The sample contains predominantly domestic residents: four of five respondents live in Osijek-Baranja County. There were four foreign tourists whose responses were retained in the sample because they are citizens of the Republic of Serbia, and they live a short distance from the *pustara settlements*; in a way, the *pustara settlements* are also a part of their heritage. Most of the respondents (90.2%) came to the *pustara settlement* for a purpose, but only 63.5% of them had previous information on *pustara settlements*. Among those respondents who did not have any previous knowledge about the *pustara*, 73.8% of them live in nearby areas.

## 5. Results

### 5.1 Place attachment and heritage preferences

All former residents (n = 57) showed a rather high level of attachment toward the *pustara settlement* (Tab. 3) and three factors were confirmed based on previous research (place identity: Cronbach  $\alpha$  = 0.986; place dependence: Cronbach  $\alpha$  = 0.714; family legacy identity: Cronbach  $\alpha$  = 0.940).

Variable		N	%
Gender	Male	55	45.1
	Female	67	54.9
	Total	122	
Age	less than 25	19	15.5
	25 - 34 years	45	36.6
	35 - 44 years	34	27.6
	45 - 54 years	9	7.3
	55 - 64 years	10	8.1
	65 and more	6	4.9
	Total	123	
Place of residence	Osijek Baranja County	88	80.0
	Croatia	18	16.4
	Europe	4	3.6
	Total	110	
Pustara was a trip destination	Yes	110	90.2
	No	12	9.8
	Total	122	
Knowledge of <i>pustara</i>	Yes	73	63.5
	No	42	36.5
	Total	115	

Tab. 2: Characteristics of respondents (tourists – survey 2) Source: authors’ survey



Place attachment item	Mean	SD	Median IQR
<i>Pustara settlement</i> is special to me.	4.26	1.395	5 (4–5)
I feel that the <i>pustara settlement</i> is a part of me.	4.14	1.493	5 (4–5)
I am very attached to the <i>pustara settlement</i> .	4.05	1.444	5 (4–5)
<i>Pustara settlement</i> holds a lot of meaning for me.	4.04	1.488	5 (4–5)
I identify strongly with the <i>pustara settlement</i> .	3.96	1.488	5 (3–5)
No other place can be compared with the <i>pustara settlement</i> .	3.95	1.274	4 (3–5)
<i>Pustara settlement</i> is the best place to be in.	3.70	1.401	4 (3–5)
<i>Pustara settlement</i> is the best place for doing what I like.	3.65	1.408	4 (3–5)
I prefer spending time in <i>pustara</i> to spending time at any other place.	3.44	1.363	4 (3–5)
<i>Pustara settlement</i> is a special place for my family.	4.18	1.351	5 (4–5)
Many important family memories are tied to the <i>pustara settlement</i> .	4.30	1.239	5 (4–5)
My family's history is strongly tied to the <i>pustara settlement</i> .	4.14	1.246	5 (4–5)
<i>Pustara settlement</i> contributes to the character of my family.	4.04	1.267	5 (4.5–5)

Tab. 3: Descriptive statistics: Mean and median for place attachment items (response scale: 1 = “Strongly disagree” and 5 = “Strongly agree”; [n = 57]). Source: authors' survey

Statistically, a significant difference was confirmed only for one association, factor dependence on the *pustara* and working in the *pustara* (Mann–Whitney U test  $p < 0.01$ ). The group of respondents that worked in the *pustara* expressed higher responses for items related to the dimension of dependence linked to *pustara*, while others rated items with scores closer to the median. Some other expected relations were confirmed as significant, although without statistical significance. Male respondents rated all place attachment items higher than did female respondents, and more years of living spent in the *pustara* was a predictor for higher ratings for all items (Tab. 4).

These results demonstrate the overall strong place attachment of former residents and the strongest median ratings for the sub-dimension of family legacy identity (Tab. 4).

### 5.2 Former residents' preferences related to *pustara* heritage

The analysis of the former residents' preferences related to *pustara* heritage showed that 45 (79%) respondents expressed the need for protecting the entire settlement. The need for the protection of landscape elements within the settlement was confirmed by 19 (33%) respondents (see Fig. 4). Results of the survey highlight the need for research on not only documents and letters by 44 (77%) and photographs and films by 41 (72%) respondents, but also on other tangible heritage. Regarding intangible heritage, 47 (82.5%) respondents emphasised the need for protection of customs, rituals, and ceremonies, 44 (77.2%) oral traditions and stories, and 30 (52.6%) knowledge and

skills. All respondents considered the need to establish a museum related to *pustara settlements*: 46 (80.7%) of them chose the *pustara settlement* as the ideal location for the museum, while only 6 (10.5%) considered the City of Osijek as a better option.

### 5.3 Tourists' travel preferences

To determine the target group of *pustara* tourists, a comparison of travel preferences was made between Croatian residents and *pustara* visitors. Croatian residents prefer travels that include visits to relatives and friends (35.6%), vacation at the seaside (21.1%), and city breaks, excursions, culture, and entertainment (13.1%). On the other hand, among the listed options, *pustara* visitors chose mostly city breaks, excursions, culture, and entertainment (17.0%), followed by vacation at the seaside (15.7%), gastronomy and enology (14.9%), and recreational activities (13.3%) (see Fig. 5). When compared to results from a representative sample, this study sample differed greatly. *Pustara* visitors expressed their reasons for travelling as being mostly related to sports and recreational activities, events, festivals and gastronomy and enology, than the average. The most obvious difference is in the reason visit to relatives or friends, which was rather low among *pustara* visitors and quite high for the representative Croatian sample.

### 5.4 Tourist motivation in visiting *pustara* settlement

To address the research problem, it was necessary to investigate the relationship between tourists' general motivation for travel and motivation for visiting the *pustara*

Sub-dimensions of place attachment	Median (IQR)				Total	P*
	Number of years of living in the <i>pustara</i> settlement					
	< 5	5–10	11–15	> 15		
Place identity	3.9 (2.9–3.9)	4 (2–5)	5 (4.4–5)	5 (4.6–5)	5 (4–5)	0.20
Place dependence	3.2 (2.3–3.5)	3.3 (2.5–4.1)	3.8 (3–4.2)	4.1 (3.2–4.3)	3.8 (3.1–4.2)	0.33
Family legacy identity	4 (2.8–4.1)	4.3 (3.6–5)	4.3 (3.7–5)	4.9 (4–5)	4.5 (3.8–5)	0.56

Tab. 4: Median rates for sub-dimensions related to the number of years of living in the *pustara* (\* Kruskal–Wallis test) Source: authors' survey

settlement. The results of the research on motivation to travel provided insights into the group of tourists that generally travel and seek excursions, culture, entertainment, and sports and recreational activities.

The mean ratings for motivation items presented the following results: most of the respondents came to Zlatna Greda because they wanted to spend the day outdoors, have fun, and relax, and very few came incidentally. They did not visit the location because (a) it was a part of their heritage, (b) they felt that the *pustara settlement* had to be visited, or (c) the entry was free. The motivation to visit because of ‘the historic story of the settlement’ was also low; however, the motivation was high in wanting to know more about the place and the character of the area (see Tab. 5). Among the respondents, 63.5% of them had prior information about the *pustara settlement*, while the rest of

them did not know anything about the settlement before their visit. The respondents showed the highest motivation for the dimension of recreational experience and lowest for heritage/emotional experience, as all three dimensions listed here were confirmed according to previous research (heritage/emotional experience: Cronbach  $\alpha = 0.884$ ; cultural/educational experience: Cronbach Alpha  $\alpha = 0.856$ ; recreational experience: Cronbach Alpha  $\alpha = 0.448$ ).

Respondent age, level of former information on *pustara settlements* and the intention to visit *pustara* were variables that showed differences between groups. Items for the heritage / emotional experience (Kruskal-Wallis test,  $p = 0.01$ ), as well as for cultural / educational

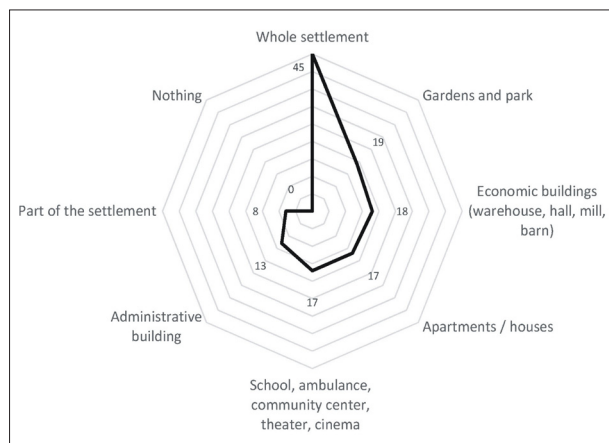


Fig. 4: Former *pustara* residents’ attitudes toward *pustara* heritage (Survey question: What kind of *pustara*’s immovable cultural heritage should be protected? Select up to three responses) Source: authors’ survey

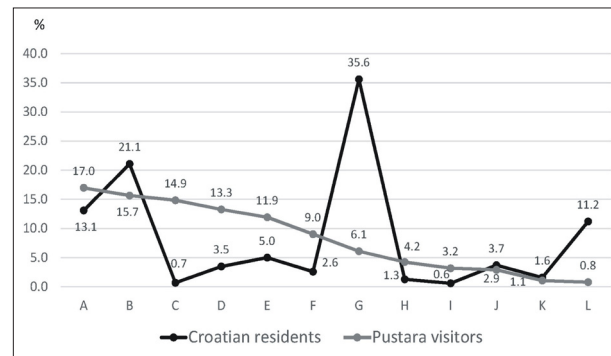


Fig. 5: Comparison of the reasons for travelling between Croatian citizens and *pustara* settlement visitors A – city breaks, excursions, culture, entertainment; B – vacation by the sea; C – gastronomy and enology; D –recreational activities; E – events and festivals; F – sport activities; G – visiting relatives and friends; H – education, seminars (unprofessional); I – shopping; J – "wellness" and health programs; K – religions reasons; L – others Sources: Project TADS 2013 (The Institute for Tourism) and authors’ adaptation

Place attachment item	Mean	SD	Median IQR
Feel a sense of belonging to the <i>pustara settlement</i>	2.50	1.370	3 (1–3)
Part of your heritage	2.06	1.264	1.5 (1–3)
Feel emotionally involved	2.76	1.358	3 (1.25–4)
Experience former rural spaces	3.69	1.199	4 (3–5)
Obligation to visit the <i>pustara settlement</i>	2.36	1.252	2 (1–3)
Feel it is important to visit the <i>pustara settlement</i>	2.75	1.247	3 (2–3)
Feel that one must visit the <i>pustara settlement</i>	3.14	1.264	2 (2–4)
Appeal of its rural characteristics	3.52	1.265	4 (3–5)
It is a famous regional site that one must visit at least once in a life	3.72	1.322	4 (3–5)
Learn about the <i>pustara settlement</i>	3.62	1.298	4 (3–5)
The <i>pustara settlement</i> ’s historic background	3.05	1.447	3 (2–4)
The natural environment of the <i>pustara settlement</i>	3.56	1.315	4 (3–5)
Spend a day outdoors	4.80	0.459	5 (5–5)
On the way to another site	1.88	1.247	1 (1–3)
No entrance fee	2.98	1.522	3 (1–4)
For some entertainment	4.46	0.769	5 (4–5)
For relaxation	4.69	0.558	5 (4–5)

Tab. 5 Descriptive statistics: Mean and median for tourist motivation items (response scale: 1 = “Strongly disagree” and 5 = “Strongly agree”). [n = 124] Source: authors’ survey

experience (Kruskal–Wallis test,  $p = 0.008$ ), were ranked higher among respondents aged 65 and older; while the same group expressed significantly lower ratings for recreational experience (Kruskal–Wallis test,  $p = 0.003$ ). Respondents who had previous knowledge about the term *pustara* evaluated heritage/emotional experience (Mann–Whitney U test,  $p = 0.02$ ) with higher scores, as well as for the cultural/educational experience (Mann–Whitney U test,  $p = 0.01$ ), compared to those who had no previous information on *pustara settlement*. Those respondents who came to Zlatna Greda for a specific purpose significantly differed by expressing lower grades for motivation linked to the recreational experience, compared to those who accidentally visited the site (Mann–Whitney U test,  $p = 0.001$ ).

### 5.5 Pustara visitors' preferences related to pustara's heritage

To identify parts of *pustara* heritage that are most interesting for visitors, we asked the latter to rate selected *pustara* features and contents from 1 to 8, where 8 represented “Most interesting” and 1 “Least interesting.” Visitors responded as follows. The most interesting heritage content of the *pustara* is the whole settlement, gardens and park, followed by customs, rituals, and ceremonies. Craftsmen tools, agricultural, industrial and everyday tools and machines are the least interesting feature. Tourists also stated that they would like to find out more about the *pustara settlements*: about their genesis, development, history, traditions, culture and economic potential. Regarding the question about the need for the establishment of *pustara* museums, 79.8% of the respondents answered positively, but only 57.6% of them felt that the museum should be on one of the *pustara settlements* (Fig. 6).

## 6. Discussion

The purpose of the research was not to test new approaches to “memory studies” or tourist motivation, but rather to define dominant narratives in a settlement with specific functions, and physical evidence with the help of existing approaches. *Pustara settlements* are special man-made physical and social constructions in the Baranja region, created from the second half of the 19<sup>th</sup> century. Legacies are still strongly present in the place and in the memories of former residents. Our main questions were about former *pustara* residents' preferences about heritage types, the strength of their place attachment

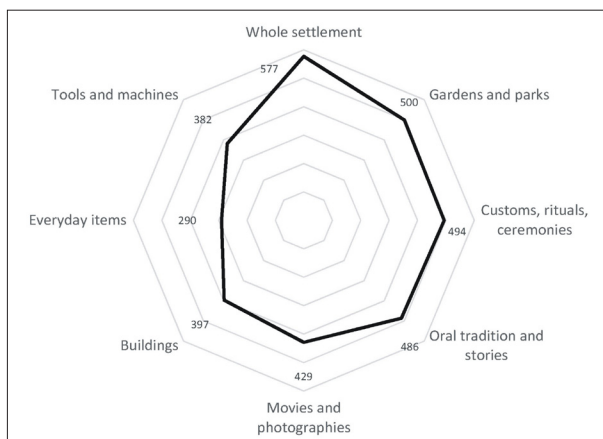


Fig. 6: Pustara visitors' preferences related to pustara heritage. Source: authors' survey

to the *pustara settlement*, the differences between the reasons for travelling among Croatian tourists in general and tourists who visit *pustara settlement*, tourist motivations for visiting the *pustara settlement*, and whether these settlements have potential in terms of heritage.

Past research on place attachment, starting with Altman and Low (1992), identified various sub-dimensions of place attachment, with place identity and place dependence as the strongest. Kil et al. (2012) added the sub-dimension of family legacy identity, and we added it to our research project. The specific functional and spatial settings of the *pustara settlement* as well as social relations with it, produced strong place attachment among respondents as measured by items according to Kil et al. (2012) and Williams and Vaske (2003). The results indicated that family legacy identity was the strongest sub-dimension in place attachment among former residents, highlighting the special set of social relations that existed.

Results of statistical analysis confirmed the previous findings of Hernandez et al. (2007), Kyle, Mowen and Tarrant (2004) and Smaldone (2006), according to whom age and time spent in the location make a difference. Residents who have spent most of their lives in a *pustara settlement* have stronger place attachment, a result that is comparable to Hernandez et al. (2007) and Smaldone (2006). Also, there are similarities with the research of Kyle, Mowen and Tarrant (2004), in which it was shown that activity or energy spent in the place makes a difference. The respondents who worked in the *pustara settlement* showed higher scores for place attachment.

While researching place attachment of former *pustara* residents, we also explored their opinions on heritage. The former residents were chosen as a target group for the time they spent in the *pustara settlement* and for their knowledge about the area. The survey questions included all three categories of heritage according to the Act on the Protection of Cultural Property (in Croatian: Zakon o zaštiti i očuvanju kulturnih dobara, 2017), which includes immobile cultural goods, movable cultural goods and intangible cultural goods. In the first category (immobile cultural goods), the respondents emphasised the importance of protecting the entire settlement (79%), after which they choose parks and gardens and certain elements of the built environment, including industrial buildings, housing and public buildings in similar proportions (17–18%). They believed that the most important elements of movable cultural heritage are documents and letters (77%), while the most important non-material ones are customs, rituals and ceremonies (82.5%). We infer that most of the respondents wanted to protect customs, rituals, and ceremonies because of their distinctive place attachment to the site, especially because of the strongest sub-dimension of family legacy. In conclusion, for the former *pustara* residents, the unique aspects of *pustara* heritage are the customs, rituals and ceremonies, followed by the whole settlement and documents and letters. In comparison to this respondent group, the visitors to the *pustara settlement* considered the whole settlement as the most important element of its heritage, followed by gardens and parks, then customs, rituals and ceremonies, followed by oral tradition and stories.

Visitors highlight the need to protect the entire settlement although only part of the buildings have been renovated (administrative and economic buildings), and most of the settlement is in its original, semi-derelict state. These provoke other questions because visitors are not sufficiently



familiar with the observed space. These results can be related to the study that Poria, Butler and Airey conducted in 2004, wherein they found that tourist perceptions of heritage site characteristics is more important than the site characteristics themselves. *Pustara* visitors, as well as tourists from the Poria, Butler and Airey (2004) study, wanted to learn more about their own heritage. *Pustara* visitors expressed interest in the genesis, history, traditions, development and economic potential of *pustara settlements*. The information tourists want to know about the *pustara* can provide directions for choosing the new contents in these locations.

The results of the second survey showed similarities with previously conducted research. Tourists confirmed their motivations in the three dimensions revealed by Poria, Butler, and Airey (2004). Results also show that tourists do not identify themselves with the *pustara settlement*, but they recognise its value and importance. The tourists who participated in this survey, as well as the participants in the research conducted by Farmaki (2012), did not come to the rural space for the authenticity and traditions of that space. While in the Farmaki survey, tourists visited rural areas for interacting with the natural landscape and culture, tourists in our research visited the *pustara* because of its natural environment and for entertainment and relaxation. Further, research on tourist motivation has shown that tourists visiting the *pustara settlement* have a lesser sense of belonging to these rural spaces, just as the respondents in the research carried out by Poria, Butler and Airey in 2003. In part, these results may be attributed to the fact that about 36% of tourists did not have any previous knowledge of the *pustara settlement*, despite the fact that almost three of four (73%) lived nearby. This information, as well as the fact that respondents who knew what the term *pustara* meant and evaluated heritage / emotional experience highly, suggests that knowledge about the local rural space and heritage should be popularised further through the education system.

With respect to the reasons tourists provided for visiting the *pustara settlement* Zlatna Greda, we found out that primarily they wanted to spend a day out, relax and have fun. They also wanted to explore and learn more about the rural heritage site. The least attractive reason for visiting *pustara settlements* was because they just stopped by on their way to another place.

To draw conclusions from this research, data on the touristic habits of the *pustara settlements'* visitors and those of the general population of Croatia, are important. According to CBS (2017), Croatian citizens mostly visit their relatives and spend summer at the seaside. The observed group of respondents who visited the *pustara settlement* came for city breaks, excursions, culture and entertainment, followed by vacation on sea gastronomy and oenology, and recreational activities. The differences in the attitudes of *pustara* visitors compared to the state average is highest for city breaks, excursions, culture, entertainment; gastronomy and enology; recreational activities; events and festivals and sports activities. These categories of tourism reveal new content that could attract the interest of new groups of tourists.

Regarding the need for the establishment of *pustara* museums, all former *pustara* residents' responses were in the affirmative. All former residents think that a *pustara* settlement museum is needed, and about 80% of them think that any one of the *pustara settlements* is an ideal location for the museum. About 79% of *pustara* visitors also believe that a museum is needed, and about 57% of them feel that

it should be located in any one of the *pustara settlements*. It is interesting that tourists consider the need for protecting *pustara settlements* and establishing a museum, even though their motivation to visit was not for its rural and heritage characteristics but for the recreational content offered by a settlement like Zlatna Greda. From their visit, the tourists have realised that the *pustara settlement* is a valuable element of rural heritage and have expressed their desire to protect such areas, probably based on how different it is from the traditional Slavonian and Baranja villages.

From this research on place attachment and the results from Lee (2015), wherein he stated that nostalgia was the key link between personal emotions and memorable experiences, it can be concluded that the former inhabitants of the *pustara settlement* would represent potential tourists of the renovated *pustara settlements* with a strong motivations to visit these places. A successfully revitalised location of *pustara settlements* with educational and recreational facilities, presents possible future tourists and special interest groups with a desirable destination (who enjoy city breaks, excursions, culture, entertainment, gastronomy, enology, recreational and sports activities, events and festivals, etc.).

The questionnaire on tourist motivation, if well adjusted, can serve as a tool to indicate possible land use and services. The findings suggest that for tourists, these places can be as meaningful as for residents. Places of specific heritage and character can provide motives to create new content to strengthen settlement networks in a rural landscape.

The limitation of the first survey was the low number of respondents. Future studies would gain by including a greater number of former residents. Further studies should explore the change in place attachment among generations of former residents and their children, to examine whether attitudes change with the preferences of the next generation. The former residents expressed their preference for tangible as well as intangible heritage, but the wholeness of the settlement is rated as the most valuable characteristic.

The second study was also limited by the rather low number of respondents. In future research, it is necessary to increase the number of respondents and research has to be carried out at several different locations in order to include different groups of respondents whose opinions would be more representative. Given the results of this research, it is necessary to elaborate on the term the whole settlement in greater detail, or this ambiguity could be corrected if we provide an explanation of certain terms in future questionnaires.

## 7. Conclusion

There is an international movement to keep threatened landscapes alive, and the new focus is on settlement networks and the viability of settlement functions. The abandonment of small settlements and the disappearance of functions in agricultural regions represent a process that weakens the cultural landscape. This research project has revealed a range of dynamic processes that can be depicted as impacts of observed changes. The process of polarisation of people and goods in the infrastructure corridor is identified in the eastern part of Croatia, in the Baranja region, while other spaces are going through processes of depopulation and loss of settlement viability. Settlements with specific material and social heritage draw our attention. Narratives about the *pustara settlements* highlight the non-rural character of these settlements formed in rural landscapes. Material



heritage – roads, buildings, alleys set in a specific orthogonal settlement scheme – create specific visual and spatial islands in the rural landscape of Eastern Croatia. The questions of how to present and preserve this phenomenon are the stimuli for this research.

We identified key stakeholders with high levels of interest in these locations: former residents with strong place attachment; and tourists with motivations linked to heritage, culture and recreation in the new educational and recreational centres in one of the settlements. The results using the stakeholders' questionnaires indicate that both parties recognise the *pustara settlement* as a valuable element of the rural heritage and express their desire to protect these areas. For both, former residents and visitors, the protection of the whole settlement as well as its cultural and historical legacy, is very important. The fact that *pustara* visitors suggest that knowledge about the local rural space and heritage should be more popularised in the education system is also indicative. The information about what tourists want to know about the *pustara settlements* can provide guidance on choosing new content in these locations. For this process, information about travel preferences can also be useful, especially because the travelling preferences of *pustara* visitors differ from the national data on tourist motivation. *Pustara* visitors mostly take city breaks, excursions related to culture, entertainment, gastronomy and enology, and travel because of different events, festivals, and recreational and sports activities. Also, the former inhabitants of the *pustara settlements* can represent potential tourists of the renovated *pustara settlements* with a strong tourist motivation to visit these places. To sum up, the research results indicate the need for establishing comprehensive protection of the cultural-historical areas of *pustara settlements* that include tangible and intangible heritage, while maintaining the wholeness of the site.

Further research is needed that would require increasing the sample of former *pustara* residents, with the aim of investigating changing place attachment to *pustara* with time. If the memories of and interests in *pustara settlements* are fading with time and are weakening with the new generation, interests in preserving the place are to be questioned. As this research included only tourists in one *pustara settlement*, this limitation should be eliminated by including visuals or field trips to other settlements to enable broader conclusions for the *pustara settlements* in general.

Values of place are based not only on social constructions but also on physical reality, material evidence, and on concrete landscape characteristics for tourists as well as for local populations. In summary, this research confirms previous theories in the fields of place attachment and tourists' motivations with the aim of identifying more precise values in the broader scope of heritage. It can also have practical implications in showing how meanings can be used in bringing decisions about new uses and facilities to threatened rural landscapes. These results can also be used in further studies within the disciplines of architecture, spatial and rural planning, tourism management and heritage studies, as well as in multidisciplinary research.

## References:

- ALCANTARA, C., KUEMMERLE T., BAUMANN, M., BRAGINA, E. V., GRIFFITHS, P., HOSTERT, P., KNORN, J. et al. (2013): Mapping the Extent of Abandoned Farmland in Central and Eastern Europe Using MODIS Time Series Satellite Data Environmental Research Letters 8 [online]. [cit. 14.10.2017] Available at: <http://iopscience.iop.org/article/10.1088/1748-9326/8/3/035035/pdf>
- ALTMAN, I., LOW, S. M. [eds.] (1992): Place Attachment. New York, Plenum Press.
- ANTÓN, C., CAMARERO, C., LAGUNA-GARCÍA, M. (2014): Towards a new approach of destination loyalty drivers: Satisfaction, visit intensity and tourist motivations. Current Issues in Tourism. Advance online publication.
- BOŠNJAK, N., STOBER, D., BRKANIĆ, I. (2016): Possibilities of Producing Symbol of Planned Agricultural Settlement. Paper presented at 4<sup>th</sup> International Scientific Symposium Economy of Eastern Croatia – Vision and Growth, Osijek 21–23.5.2015. In: Mašek Tonković, A. [ed.]. Proceedings of the 5<sup>th</sup> International Scientific Symposium 'Economy of Eastern Croatia – Vision and Growth' (pp. 153–160). Osijek, University of J. J. Strossmayer in Osijek, Faculty of Economics in Osijek.
- BUJIS, A., HOVDAS, T., FIGARI, H., CASTRO, P., DEVINEWRIGHT, P., FISCHER, A., MOURO, C., SELGE, S. (2012): Understanding people's ideas on natural resource management: Research on social representations of nature. Society & Natural Resources: An International Journal, 25(11): 1167–1181.
- BUJIS, A., ELANDS, B., LANGERS, F. (2009): No wilderness for immigrants: Cultural differences in images of nature and landscape preferences. Landscape and Urban Planning, 91 (3): 113–123.
- CBS (2017): Census of Population, Households and Dwellings 2011. Croatian Bureau of Statistics website [online]. [cit. 12.09.2017]. Available at: [https://www.dzs.hr/default\\_e.htm](https://www.dzs.hr/default_e.htm)
- CORK 2.0 DECLARATION (2016): "A Better Life in Rural Areas" Luxembourg. Publications Office of the European Union [online]. [cit. 14.09.2017]. Available at: [https://enrd.ec.europa.eu/sites/enrd/files/cork-declaration\\_en.pdf](https://enrd.ec.europa.eu/sites/enrd/files/cork-declaration_en.pdf)
- COUNCIL OF EUROPE (2000): Council of Europe, 2000. European Landscape Convention. CETS No. 176. Council of Europe, Strasbourg, France [online]. [cit. 26.06.2018]. Available at: <http://conventions.coe.int/Treaty/Commun/QueVoulezVous.asp?NT=176CM=8CL=ENG>
- EU ACTION FOR SMART VILLAGES (2017): The European Commission [online]. [cit. 28.08.2017] Available at: [https://ec.europa.eu/agriculture/sites/agriculture/files/rural-development-2014-2020/looking-ahead/rur-dev-small-villages\\_en.pdf](https://ec.europa.eu/agriculture/sites/agriculture/files/rural-development-2014-2020/looking-ahead/rur-dev-small-villages_en.pdf)
- EURONATUR: Balkan Green Belt [online]. [cit. 14.06.2018.] Available at: <https://www.euronatur.org/en/what-we-do/project-areas/project-areas-a-z/balkan-green-belt/>
- EUROSTAT (2016): Distribution of population by degree of urbanisation, dwelling type and income group – EU-SILC survey [online]. [cit. 20.07.2017] Available at: [http://ec.europa.eu/eurostat/cache/metadata/en/ilc\\_esms.htm](http://ec.europa.eu/eurostat/cache/metadata/en/ilc_esms.htm)
- FARMAKI, A. (2012): An exploration of tourist motivation in rural settings: The case of Troodos, Cyprus. Tourism Management Perspective, 2–3: 72–78.
- FRIED, M. (1963): Grieving for a Lost Home. In: Duhl, L. J. [ed.]: The Urban Condition (pp. 151–171). New York, Basic Books.

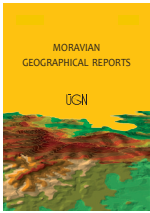
- FYHRI, A., STEEN JACOBSEN, J. K., TOMMERVIK, H. (2009): Tourists' landscape perception and preferences in a Scandinavian coastal region. *Landscape and Urban Planning*, 91: 202–211.
- GARCÍA-MARTÍN, M., PLIENINGER, T., BIELING, C. (2018): Dimensions of landscape stewardship across Europe: Landscape values, place attachment, awareness, and personal responsibility. *Sustainability (Switzerland)*, 10(1): 1–27.
- GREIDER, T., GARKOVICH, L. (1994): Landscapes: The social construction of nature and the environment. *Rural Sociology*, 59(1): 1–24.
- GIULIANI, M. V. (2003): Theory of attachment and place attachment. In: Bonnes, M., Lee, T., Bonaiuto, M. [eds.]: *Psychological Theories for Environmental Issues* (pp. 137–170). Ashgate, Aldershot.
- GROSS, M. J., BROWN, G. (2008): An empirical structural model of tourists and places: Progressing involvement and place attachment into tourism. *Tourism Management*, 29(6): 1141–1151.
- HAVC FILMING IN CROATIA [cit. 26.06.2018]. Available at: [http://filmingincroatia.hr/en/locations\\_gallery/search\\_regions/baranja](http://filmingincroatia.hr/en/locations_gallery/search_regions/baranja)
- HERNÁNDEZ, B. M., HIDALGO, C. M., SALAZAR-LAPLACE, M. E., HESS, S. (2007): Place attachment and place identity in natives and non-natives. *Journal of Environmental Psychology*, 27(4): 310–319.
- HUBER, M., ARNBERGER, A. (2015): Opponents, waverers or supporters: The influence of place-attachment dimensions on local residents' acceptance of a planned biosphere reserve in Austria. *Journal of Environmental Planning and Management*, 59(9): 1610–1628.
- JACOBSEN, J., TØMMERVIK, H. (2016): Leisure traveller perceptions of iconic coastal and fjord countryside areas: Lush naturalness or remembrance of agricultural times past? *Land Use Policy*, 54: 38–46.
- KALTENBORN, P. (1998): Effects of sense of place on responses to environmental impacts: A study among residents in Svalbard in the Norwegian high Arctic. *Applied Geography*, 18(2): 169–189.
- KIL, N., HOLLAND, S. M., STEIN, T. V., JAE KO, Y. (2012): Place attachment as a mediator of the relationship between nature-based recreation benefits and future visit intentions. *Journal of Sustainable Tourism*, 20(4): 603–626.
- KYLE, G. T., MOWEN, A. J., TARRANT, M. (2004): Linking place preferences with place meaning: An examination of the relationship between place motivation and place attachment. *Journal of Environmental Psychology*, 24(4): 439–454.
- LASANTA, T., ARNÁEZ, J., PASCUAL, N., RUIZ-FLAÑO P., ERREA, M. P., LANA-RENAULT, N. (2017): Space–time process and drivers of land abandonment in Europe. *Catena*, 149: 810–823.
- LASANTA, T., NADAL-ROMERO, E., ARNÁEZ, J. (2015): Managing abandoned farmland to control the impact of re-Vegetation on the environment. The state of the art in Europe. *Environmental Science and Policy*, 52: 99–109.
- LEE, Y. (2015): Creating memorable experiences in a reuse heritage site. *Annals of Tourism Research*, 55: 155–170.
- LONČAR-VICKOVIĆ, S., STOBER, D. (2010): A contribution to settlement network analysis in Baranya – A projection of spatial development potential. *Technical Gazette*, 17(1): 83–91.
- LU, C., LIN, L., YEH, H. (2018): Exploring the linkage effects of place attachment in rural areas using the fuzzy analytic network process. *Journal of Travel & Tourism Marketing*, 35(4): 461–478.
- MANZO, L. C., PERKINS, D. D. (2006): Finding common ground: The importance of place attachment to community participation and planning. *Journal of Planning Literature*, 20(4): 335–350.
- MEDCALC: Statistical Software version 14.12.0. Available at: <http://www.medcalc.org>; 2014
- MZOIP Natura 2000: [cit. 14.06.2018]. Available at: <http://www.mzoip.hr/hr/priroda/ekoloska-mreza-natura-2000.html>
- PEDROLI, B., ANTROP, M., PINTO, CORREIA, T. (2013): Assessment of trends and prospects. Report prepared for WWF. Institute for Editorial: *Living Landscape: The European Landscape Convention*. Research Perspective *Landscape Research*, 38(6): 691–694.
- PHILIPS, A. (2015): *Nature Conservation and Landscape: An Introduction to the Issues*. In: Gambino, R., Peano, A. [eds.]: *Nature Policies and Landscape Policies, Urban and Landscape Perspectives 18* (pp. 25–31). Switzerland, Springer International Publishing.
- POINTEREAU, P., COULON, F., GIRARD, P., LAMBOTTE, M., STUCZYNSKI, T., SÁNCHEZ ORTEGA, V., DEL RIO, A. (2008): Analysis of the driving forces behind farmland abandonment and the extent and location of agricultural areas that are actually abandoned or are in risk to be abandoned. *JRC Scientific and Technical Reports* [online]. [cit. 25.08.2017]. Available at: [http://agrienv.jrc.ec.europa.eu/publications/pdfs/JRC46185\\_Final\\_Version.pdf](http://agrienv.jrc.ec.europa.eu/publications/pdfs/JRC46185_Final_Version.pdf)
- PORIA, Y., BUTLER, R., AIREY, D. (2003): The core of heritage tourism. *Annals of Tourism Research*, 30(1): 238–254.
- PORIA, Y., BUTLER, R., AIREY, D. (2004): Links between tourists, heritage, and reasons for visiting heritage sites. *Journal of Travel Research*, 43(1): 19–28.
- PORIA, Y., REICHEI, A., BIRAN, A. (2006): Heritage site management: Motivations and expectations. *Annals of Tourism Research*, 33(1): 162–178.
- PRATMININGSIH, S. A., RUDATIN, C. L., RIMENTA, T. (2014): Roles of motivation and destination image in predicting tourist revisit intention: A case of Bandung – Indonesia. *International Journal of Innovation, Management and Technology*, 5(1): 19–24.
- PRAYAG, G., DEL CHIAPPA, G. (2016): Antecedents of Heritage Tourists' Satisfaction: The Role of Motivation, Discrete Emotions and Place Attachment. Paper presented at the 2016 Conference. Canada, 28.09.2016 [online]. [cit. 12.09.2017]. Available at: [http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1006&context=ttracanada\\_2016\\_conference](http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1006&context=ttracanada_2016_conference)
- PRAYAG, G., RYAN, C. (2012): Antecedents of tourists' loyalty to Mauritius. *Journal of Travel Research*, 51(3): 342–356.
- RAM, Y., BJÖRK, P., WEIDENFELD, A. (2016): Authenticity and place attachment of major visitor attractions. *Tourism Management*, 52: 110–122.

- RAMKISSOON, H., SMITH, L. D. G., WEILER, B. (2013): Testing the dimensionality of place attachment and its relationships with Place Satisfaction and pro-Environmental Behaviours: A Structural Equation Modelling Approach. *Tourism Management* 36: 552–566.
- SCANNELL, L., GIFFORD, R. (2010): Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30(1): 1–10.
- SMALDONE, D. (2006): The role of time in place attachment. Proceedings of the 2006 Northeastern Recreation Research Symposium [online]. [cit. 20.09.2017] Available at: [https://www.nrs.fs.fed.us/pubs/gtr/gtr\\_nrs-p-14/7-smaldone-p-14.pdf](https://www.nrs.fs.fed.us/pubs/gtr/gtr_nrs-p-14/7-smaldone-p-14.pdf)
- SMALDONE, D., HARRIS, C., SANYAL, N. (2005): An exploration of place as a process: The case of Jackson Hole, WY. *Journal of Environmental Psychology*, 25(4): 397–414.
- STEFANIAK, A., BILEWICZ, M., LEWICKA, M. (2017): The merits of teaching local history: Increased place attachment enhances civic engagement and social trust. *Journal of Environmental Psychology*, 51: 217–225.
- ŠAŠLIN, P. (2005): Demografske perspektive Baranje – rezultati terenskog istraživanja. Migracijske i etničke teme, 21(1–2): 111–121.
- WBG (2017): Global Economic Prospects. June 2017. A World Bank Group, Flagship Report [online]. [cit. 29.08.2017]. Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/26800/9781464810244.pdf>
- WILLIAMS, D. R., VASKE, J. J. (2003): The measurement of place attachment: Validity and generalizability of a psychometric approach. *Forest Science*, 49: 830–840.
- YUKSEL, A., YUKSEL, F., BILIM, Y. (2010): Destination attachment: Effects on customer satisfaction and cognitive, affective and conative loyalty. *Tourism Management*, 31(2): 274–284.
- ZAKON O ZAŠTITI I OČUVANJU KULTURNIH DOBARA (2017): Narodne novine, br. 69/99 [online]. [cit. 18.08.2017]. Available at: <https://www.zakon.hr/z/340/Zakon-o-za%>

**Please cite this article as:**

STOBER, D., BRKANIĆ, I., LONČAR, L. (2018): The preferences of residents and tourists for cultural and architectural heritage in a rural landscape: The case of Zlatna Greda, Croatia. *Moravian Geographical Reports*, 26(4): 285–297. Doi: 10.2478/mgr-2018-0023.





# The role of landscape preferences in the travel decisions of railway passengers: Evidence from Hungary

Bence SOMOGYI <sup>a</sup>, János CSAPÓ <sup>b\*</sup>

## Abstract

*When surveying the motivation side of travel and tourism, we can state that tourists consider in their travel decisions, certain landscape preferences – to a certain extent. It also seems to be evident, however, that the objective evaluation of a landscape is a hard task for researchers for numerous reasons. In recent decades, several attempts have been made to create such methods but it seems that, in Hungary at least, this topic is rather neglected. The aim of this study is to provide an evaluation method for the landscape preferences of passengers travelling on Hungarian railway lines, demonstrating how the landscape around the railways could become an attraction during the travel. We survey what types of landscape appearance would be needed in order to generate travel decisions for tourists and also how the travel experience itself could become a tourism product.*

**Keywords:** *landscape preferences; railway transport; evaluation method; railway passengers; travel decisions; Hungary*

**Article history:** *Received 15 July 2017, 25 July 2018, Published 31 December 2018*

## 1. Introduction

From the Antiquities, the need to travel can be traced back to the recognition of the beauty of the natural world. Any judgments about the beauty of a landscape, however, is a segment of landscape geography rather associated with subjectivity (Frank et al., 2013; Horváth, 2008; Howley, 2011). This is especially true of the evaluation of the scenery, aesthetics and preferences of landscapes from the point of view of tourism, since – although we can make some generalisations – the aesthetic experience of various landscapes appears differently to each individual (Mezősi, 1990; Frank et al., 2013). Numerous works and reports have been published in the international literature with authors aiming to create the most objective evaluation methods possible for landscapes (Csorba et al., 2004; Frede et al., 2002; Galambos, 1989; Joly et al., 2009; Lóczy, 2015; Marosi and Szilárd, 1985; Möller and Steiner, 2002). These attempts could not sufficiently overcome nor justify individual subjectivity, however.

Nevertheless, it is evident that an objective evaluation of a landscape is a difficult task for several reasons. A subjective judgement of a landscape depends on the individual's personality, permanent living environment, geographical position and the environment of daily routines,

but also on the family, friends, colleagues and instructions perceived in the media (Buijs et al., 2009; Sevenant and Antrop, 2010). Thus, a landscape and especially a landscape we consider beautiful is nothing but the result of our cognitive imagination (Bodnár, 2008; Sevenant and Antrop, 2009; Dachary-Bernard and Rambonilaza, 2012). For those who come from a residential district of blocks of flats, the scenery of a garden suburb residential neighbourhood can almost act as a close-to-nature environment, but at the same time, for an individual coming from an undisturbed area it shows signs of high urbanisation, which may make the area repulsive (Garre et al., 2009; Rogge, Nevens and Gulinck, 2007).

The aim of our study is to provide an evaluation method for the landscape preferences of passengers travelling on Hungarian railway lines, demonstrating how the landscape around the railways could become attractive during the travel. We do not intend to evaluate the landscape but the tourism potential based on landscape preferences. Of course, we are aware that landscape character itself is not responsible entirely for attracting tourist travel, as wider geographical contexts have their role as well in the travel decisions. We realise that measuring landscape preferences is a complex and challenging task, since the process involves both objective and subjective elements

<sup>a</sup> Doctoral School of Earth Sciences, University of Pécs, Hungary

<sup>b</sup> Institute of Marketing and Tourism, Faculty of Business and Economics, University of Pécs, Hungary  
(\*corresponding author: J. Csapó, e-mail: [csapo.janos@tk.pte.hu](mailto:csapo.janos@tk.pte.hu))

(Frank et al., 2013). Our methodology was objective, but the ratings of the travellers were subjective, based on the individuals' complex social and psychological characteristics. Thus, during our research we investigated the subjective landscape preferences of the travellers on the Hungarian railways and, based on these data and ratings, we mapped the visual assessments of the travellers. We believe that this important topic should be researched as part of travel motivations. We survey what kind of landscape appearance would be needed in order to generate travel decisions for tourists, and how the travel experience itself would become a tourism product. The study is based on the exploration of the relationship between the subjective value appraisal of railway passengers and objective indicators of land use.

## 2. Theoretical background

Although we can find a much higher ratio of objectivity in the pattern of landscape elements, such patterns also influence the aesthetic values of the area. As long as the spectacle of a crowded highway in an urbanised, strongly disturbed area is not outstanding at all, in a rural region we can define it as a spatial element strongly dissecting the landscape, causing significant disharmony (Garre et al., 2009). The appearance of transport elements in a landscape also provides an important factor for the evaluation processes, since these are the elements that most directly carve up the uniform natural environment into pieces. The development of transport elements has changed the landscape texture of post-industrial societies to such a degree that, in landscape evaluation, it is reasonable to consciously use the concept of transport landscape (Nita and Myga-Piatek, 2014).

When considering the broader framework of the topic, we have to acknowledge research on the relationship between landscape and tourism, as well as the decision aspects of human behaviour in general. In this context, the earliest works dealing with travel behaviour, in fact creating the term Behavioural Geography, can be dated back to the 1970s (Aldskogius, 1977; Bunting and Guelke, 1979; Sitwell and Latham, 1979). In the 1980s, this topic was further elaborated, focusing on the complex relationships between spatial choice, different environmental backgrounds and travel behaviours (Desbarats, 1983; Timmermans, 1981). In the 1990s, researchers further expanded and elaborated on modern aspects of the topic (Van der Zee, 1990; Golledge, 1997), whereas in the 2000s newer approaches appeared, such as attitude theory for understanding travel behaviour (Dijst, Farag and Schwanen, 2008).

Another important part of the research problem in theoretical terms is the survey and investigations in Landscape Ecology. The first comprehensive work on landscape ecology was published in 2001 by Turner, Gardner and O'Neill (Landscape Ecology in Theory and Practice). Because landscape ecology had grown rapidly during the last 15 years, this seminal work was republished in 2015 with the same title, adapting to enhanced understanding of the topic (Turner and Gardner, 2015). The topic also generated scientific journals, such as Landscape Ecology or Current Landscape Ecology Reports. The importance and popularity of the topic is demonstrated by one of the most recent comprehensive publications, since it responds to practical and training demands (Gergel and Tuner, 2017).

Another increasingly popular field of study is the multidisciplinary framework of Landscape Aesthetics. One of the earliest works in this context was published by

Shafer et al. (1969). In this paper, the authors intended to analyse the interrelationships between the natural features of a landscape and public preferences, using a methodology employing factor and multiple regression analyses. Among early research using such approaches, we note works dealing with aesthetic factors of landscapes such as rivers (Leopold, 1969), river valleys (Zube et al., 1974), and general perceptions of the natural environment (Shafer, 1969; Zube, 1974).

Realising the importance of the approach from a practical point of view, Daniel and Boster (1976) developed the Scenic Beauty Estimation Method (SBE), which provides quantitative measures of aesthetic preferences for alternative wildland management systems. In their work, based on extensive experimentation and testing, they concluded that SBE proved to be an efficient and objective means for not only assessment of the scenic beauty of public forests and wildlands but also the prediction of the aesthetic consequences of alternative land uses. At the end of the 1980s, Bourassa (1988) argued that the use of aesthetics should not be limited to objects of art but involve, for instance, the evaluation of the physical conditions of the landscape as well, presenting empirical observations supporting cultural and biological theories and implications for landscape planning.

As the currency of the topic continued to increase from multidisciplinary perspectives, especially from the point of view of the quality of landscape and of life, numerous authors presented conceptual frameworks and suggestions for an appropriate methodology in order to provide a basis for landscape preferences. Van der Jagt et al. (2014) introduced a preference matrix as a measure of landscape aesthetics, as a new tool for studying scenic quality. Vizzari (2011) created a spatial model in order to assess potential landscape quality based on the most important physical-naturalistic, historical-cultural and social-symbolic elements. Several researchers have used pictures or GIS images in order to capture people's landscape preferences (Jeanloz, 2016; Pardo-García, 2017; Martin et al., 2016; Wang et al., 2016).

In his comprehensive review, Scott (2006) pointed out that seeking to assess public perceptions of and preferences for landscapes faces major conceptual, methodological and institutional challenges, both for academics and policy-makers. Nevertheless, by the mid-2000s, considerable development and progress has been witnessed in the study of this complex topic. Scott, emphasizing the practical side of the investigations, identified those methods that later were used in policy making.

Another emergent theme in landscape aesthetics is the investigation of relationships between agriculture, rural areas and landscape aesthetics (Van Zanten et al., 2016b). Researchers in this field basically intended to create a valid system of indicators, such that an objective evaluation could be carried out in terms of landscape preferences. This was achieved, for instance, among agricultural experts and stakeholders (Rosley et al., 2013; Vouigney, 2009) and among members of the general public (Barroso et al., 2012; Frank et al., 2013; Howley et al., 2011; Junge, 2015; Swanwick, 2009). Such models included demographic or economic variables as independent variables influencing people's landscape preferences (Kalivoda et al., 2014; Tagliaferro et al., 2016; van Zanten, 2014; Wang et al., 2017). Other types and forms of landscape, such as urban areas (Peterson et al., 2012) and mountainous regions (Riechers

et al., 2016; Schirpke et al., 2013) also provided important questions for surveys of landscape aesthetics and landscape perceptions.

These various theoretical approaches and methods were then tested at the regional level. Understandably, we find the highest number of publications investigating the perceptions of the local population or of the visitors of a particular area. To give some examples, the aesthetic aspects of landscape were investigated in: Switzerland (Junge et al., 2015); the Mediterranean context (Barroso et al., 2012); and Holland (van Zanten et al., 2016a). In addition, there is much research outside Europe, including Faggi et al. (2015) investigating water as an appreciated feature in the landscape in Buenos Aires, and De La Fuente De Val and Mühlhauser (2014) surveying the South American Mediterranean landscape of the Andean foothills east of Santiago (Chile).

Given the focus of the present article, the last aspect of our literature review looked at Landscape Perceptions and Landscape Preferences in Tourism. In recent decades, when landscape perceptions and preferences have been investigated, tourism issues have not been in focus. As a new theme, it started to appear in studies after 2000. One of the earliest works, however, was published by Fabos (1971), who introduced an analysis of environmental quality ranking systems related to recreation. Subsequent research provided a theoretical background for this new domain of enquiry, aiming to discover how to determine the beauty of a landscape, while introducing new methods for landscape evaluation for tourism and recreation from a general perspective (Liu, 2015; Kirillova et al., 2014; Knudsen et al., 2007; Ode et al., 2008; Tveit et al., 2007; Fornal-Pieniak, 2014), as well as introducing methods using GIS (Varjú et al., 2014) or photo-based research (Jacobsen, 2007). After the appearance of the theoretical works, local examples and regional investigations were reported. For some recent examples, see: Beza (2010), who investigated the aesthetic value of the Mt. Everest Trek; Fyhri et al. (2009), who surveyed tourists' landscape perceptions and preferences in a Scandinavian coastal region; Jaszczak and Žukovskis (2011), who studied a German region, Ostfriesland from a rural tourism perspective; Yoshihara et al., (2017), who investigated the psychological evaluation of tourism landscape images in Hiroshima from the perspective of Korean tourists; and Nikolaishvili et al. (2012), who evaluated the touristic potential of Georgia's landscapes.

Although landscape scenery (the relief and morphology of a landscape) influences tourism flows and behaviours, we have to handle incidental overrating circumspectly (Cocean, 2010). In the evaluation method of Phillips et al. (2010), for instance, the spectacle of a landscape is not included as one of the strongly influencing factors for tourism flows and behaviours. Horváth (2008) directly cautions that we should not overrate the role of the beauty of the landscape among the influencing factors for travel decisions. This statement appears to be valid in that the experiences of the sights become products, influencing tourists' attitudes only due to the services created around them: for example, the majority of the most important look-out towers in Hungary can be visited for free, so practically we do not have any objective measures about their actual numbers of visitors (Horváth, 2008).

In recent developments of tourism, landscape can be seen as having a double role. On the one hand, due to

urbanisation processes, among the cognitive needs of individual tourists, visits to authentic physical environments appear to an increasing extent (Chua et al., 2015; Gyuricza and Ambrus, 2008). On the other hand, since modern post-industrial tourists primarily seek more dynamic experiences, they will find these places attractive not only due to the scenery but by getting involved in different forms of active and adventure tourism (Buckley, 2003). As a result, landscape appears as a background element for leisure activities (Cocean, 2010). We also have to mention anthropogenic, strongly disturbed landscapes as well, since they also carry the possibility of the appearance of tourism services (Myga-Piatek and Jerzy, 2008).

The appearance and strengthening of panoramic (road) routes and the scenic railway routes, serving to display landscape scenery, emerged in parallel with the increased mobility of people (Denstadli and Jacobsen, 2011; Page, 2009). Moreover, this trend overlapped with the cutback of the railway networks in Europe, which – from the point of view of the travellers – had a direct consequence in an increasing need for scenic railway routes (most remarkably in the Alps, but we can find Hungarian examples in the Bakony Mountains as well) (Jade et al., 2015). As a result of the rapid development of panoramic roads and railways, travel itself became an attraction (Halsall, 2001). Using the train, the traveller mostly meets permanent elements. During a longer trip, the travel companions usually do not change and – except for very long travels – the crew remains the same as well, together with the technical infrastructure of the railway. The only remarkable variation is supplied by the change in landscape, and thus the landscape itself provides the real dynamics for the travel experience.

### 3. Data and methods

In this research project, we intended to avoid any form of subjectivity, as much as possible, during the landscape evaluation process. Based on this principle, we decided to survey tourism supply and demand at the same time, and to evaluate these two components using mathematical methods. Supply is based on relief characteristics and surface cover. From previous research, these two factors influence primarily tourism behaviour, and it was plausible to evaluate them. For landscape features, we took the Hungarian physical geographical macroregion classification as a base, and classified the railway lines as plain, hilly and mountainous types. Of course, this approach also carries a certain amount of subjectivity, since a given railway line can have different relief features. During the evaluation process, we always took into consideration the exact landscape surrounding the railway line section, without reference to what kind of landscape features can be seen from the train window: for instance, the Füzésabony–Hatvan railway section is definitely allocated in a plain landscape; however, from the train we can see the imposing relief of the Mátra Mountains. For a general view of the rail network, see Figure 1.

For the determination of land cover, we used the CORINE database. During the analysis, based on the physical characteristics of Hungary, we selected the following land cover forms: agricultural areas; industrial, commercial and transport units; urban fabric, artificial, non-agricultural vegetated areas; wetlands; and forests (see Tab. 1). We believe that this classification is necessary since the traveller can see the land from the train – not in detail, but as a complex system.



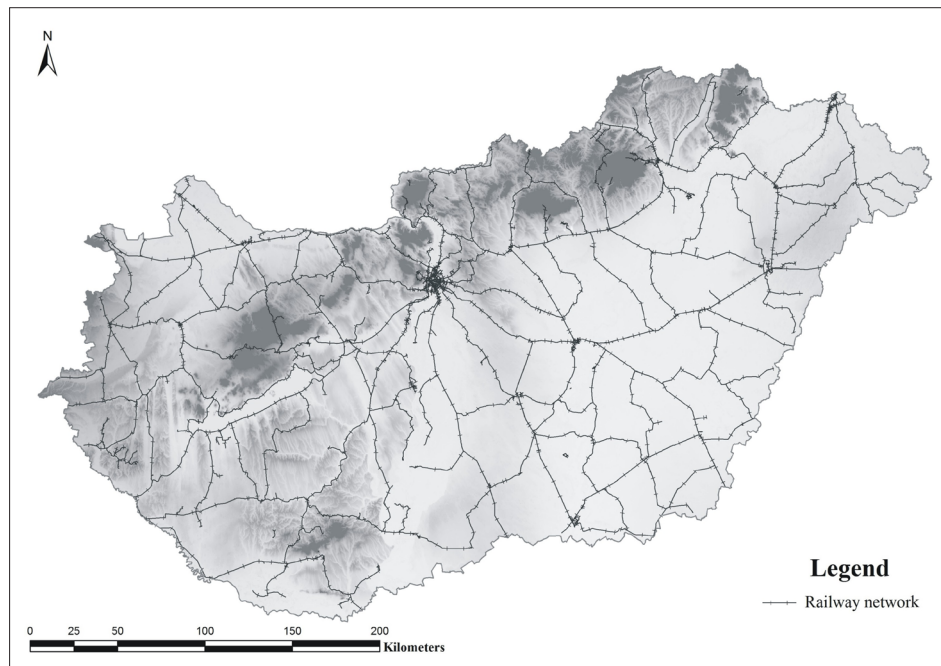


Fig. 1: The railway network and relief of Hungary  
Source: authors' elaboration

Category	CORINE category
Agricultural areas	Non-irrigated arable lands
	Rice fields
	Vineyards
	Fruit trees and berry plantations
	Pastures
	Complex cultivation patterns
	Land principally occupied by agriculture, with significant areas of natural vegetation
Industrial, commercial and transport units	Industrial or commercial units
	Road and rail networks and associated land
	Mineral extraction sites
	Dump sites
	Port areas
	Airports
Urban fabric, artificial, non-agricultural vegetated areas	Continuous urban fabric
	Discontinuous urban fabric
	Green urban areas
	Sport and leisure facilities
Wetlands	Inland marshes
	Peat bogs
	Water courses
	Water bodies
Forests	Broad-leaved forest
	Coniferous forest
	Mixed forest
	Transitional woodland-shrub

Tab. 1: The selected land cover forms and categories from CORINE  
Source: Based on CORINE Land Cover (CLC) nomenclature

We carried out the analysis of the demand side with a questionnaire survey. Given that we assumed that a certain age and maturity was needed to evaluate travel decisions, respondents 15 years of age and older were defined as potential respondents. The survey was carried out directly on trains and train stations and online, in the course of which  $n = 166$  questionnaires were filled out.

Our questions first of all asked for gender, age and education level data, then we said that we were focusing on the relation between the railway and the environment. In a 1–5 scale we asked the travellers to evaluate the following topics:

1. According to your opinion, how much can railway travel contribute to the preservation of landscape and environmental values?
2. How would you rate the importance of the surrounding landscape during your railway travel?
3. During your travels, how much time do you usually spend on looking at the landscape?
4. During your travels, how are you impressed with the following landscape types? (Mountainous; hilly areas; plain areas; forests, woody areas; agricultural land; waterside areas; urban areas; industrial areas)

The landscape evaluation of railway lines was carried out using the following formula, which also supported the exact assignment of the locations of the rail experience trips:

$$V = [(\sum N \times a) \times r] \times t$$

where,  $V$  is the landscape aesthetic value of the railway section,  $N$  is the sum of the frequency of landscape types,  $a$  is the land use weight, calculated from the results of the questionnaire survey,  $r$  relief weight, which is based on a particular railway section's position within the physical macro regions and  $t$  is tourism weight, which is based on the mean number of commercial accommodations of the railway section per settlement.

Since tourism potential involves inbound tourist flow as well, we also carried out weighting with the accommodation structure because we assumed that the number of commercial accommodations is related to the visitor numbers of the area. The landscape as a potential basis for tourist utilisation of rail transport is only valuable for tourism when a certain amount of touristic expenditure is experienced.

The determination of spatial weight factors was conducted from the results of the questionnaire survey, where our investigations included the subjective appraisal of the individual. We asked the respondents, based on their personal preferences, how they would rate landscape types on a 1–5 scale. The preference value of landscape types means the weighted mean value of the received values. During our calculations we only highlighted the values above the average, with values of 2 (forest landscape) and 3 (waterside landscape); the values below the average did not receive weights (weight 1).

The classification into relief landscape forms was carried out by physical geographical macroregions. We identified three railway line types:

1. Railway lines in upland or mountainous areas: railway lines along the Transdanubian Mountains and the North Hungarian Mountains;
2. Railway lines in hilly areas: Railway lines along the pre-Alps Region and the Transdanubian Hills; and
3. Railway lines in plain areas: the Little Plain Region and the Great Hungarian Plain.

Here the calculation of the weight value was also carried from the weighted mean value of the preference values and the number of the respondents in the questionnaire survey, so the mountain railway lines received the value of 3, hilly areas 2 and plain areas 1 (hence, the latter was not weighted). Here we note that relief factors do not always follow the course of the railway lines, so in certain sections different landscape types can appear. This presents a measure of subjectivity to the research but, at the same time, the major relief types can be well separated for each type of railway section.

The calculation of the tourism weight was based on the volume of registered commercial accommodation capacities in the concerned settlements on the railway line. The basis of the calculation was provided by the mean commercial accommodation bed places per the mean number of stations on one railway section. During the project, we had to make the averaging with the mean value of the railway stops since certain sections have different lengths, which would skew the calculations. Taking all these notions into consideration, the designation of the preferences and the weight values are presented in Table 2. This table exemplifies the results of the questionnaire survey as well.

As mentioned above, during the elaboration of the methodology we intended to reduce the amount of subjectivity as much as possible. We could not completely achieve this goal, however, due to the following risks and issues:

1. Only a very small amount of train travels are directly associated with leisure. The railway as a means of transport is much more associated with business traffic, especially in the larger cities with more significant amounts of travelling (consuming) potential;
2. As mentioned earlier, tourists do not necessarily or even primarily travel because of the landscape values but because of the tourism experiences at their destinations. This disinterest in the landscape can distort results;
3. Land use and relief characteristics and their classifications reflect the subjective appraisal of the researchers. For instance, the complex terminology of agricultural land can cover only orchards, or grape-covered areas, or we can classify the scenery of the pastures into this category as well. We believe, however, that unfolding the landscapes into elements is not reasonable because of the dynamics of the system described earlier;
4. The classification based on relief characteristics can also carry a certain amount of subjectivity, since although the railway as a man-made network follows physical geographical limitations, landscape classification cannot define it precisely enough; and
5. Landscape preferences are influenced by human factors as well. The mental state of an individual influences opinions about the landscape, so a highly attractive mountainous landscape could arouse negative sensations and, conversely, plain or urban areas could carry positive messages. The socio-cultural background of the individual is also important, as subjective opinions about landscapes derive from the social development of the individual. Someone who spent her or his life in a lowland environment will very likely evaluate the plain areas with a higher preference, while hilly or mountainous areas could carry negative aspects for this individual. In this context, the environment of the present residence of travellers, as well as the evaluations and opinions of peers, can also influence positively or negatively

	Weighted average	Calculated weight
<i>Land use weight based on the results of the questionnaire survey</i>		
Waterside	4.423	3
Forest landscape	4.147	2
Settlement	3.404	1
Agricultural landscape	3.110	1
Industrial landscape	2.252	1
<i>Relief weight based on the results of the questionnaire survey</i>		
Mountains	4.564	3
Hilly areas	4.130	2
Plain regions	2.988	1
<i>Tourism weight based on the average of the commercial accommodation rooms per 1 station</i>		
Values above the 3 <sup>rd</sup> quartile	437.292 – 7103.877	3
Values between the 1 <sup>st</sup> and 3 <sup>rd</sup> quartiles	64.352 – 437.291	2
Values beneath the 1 <sup>st</sup> quartile	0 – 64.351	1

Tab. 2: The land use, relief and tourism weights  
Source: authors' survey and calculations

notions about a certain landscape. The mathematical description of all these factors is not the objective of this investigation, which is why the authors elaborated on the received personal opinions of the travellers.

Ultimately, we can hypothesise that tourist utilisation of landscape characteristics of the railway network depends on the preferences of the travellers' cognitive consciousness, on the physical land use and on the tourism supply in the respective areas.

## 4. Results and discussion

The results of the questionnaire survey, the thematic evaluation of the CORINE database, and the characterisation of the railways capable of integration into tourism, based on landscape preferences, are discussed in this Section.

### 4.1 Results of the questionnaire and thematic surveys

The questionnaire survey covering the demand relations included the cognitive relations of landscape preferences with numerous questions. Its results are presented in Table 3. During the research, we analysed the relations of age and

education to attitudes connected to landscape preferences. Although this work demonstrated only marginal features in relation to travelling by train and landscape geography, it provides important information from the point of view of the market segmentation of railway tourists.

For the question 'How much time do you spend on investigating the landscape during your travel?', we can see a slightly greater value for male respondents. Based on the age structure, our earlier statements are valid here, since middle-aged and elderly age groups were more interested in the scenery of the landscapes than the younger generations. According to level of education, we can also see – although to a smaller extent – the dominance of the higher educated groups.

Based on the Pearson's correlation coefficient, Table 4 represents the existence (or absence) of the correlational relations of the importance of certain relief types and land use landscapes with respect to gender, age and education level. For this purpose, the analysed social factors needed to be quantified: gender, males = 1, females = 2; age groups coded 1–4; education groups coded 1–3. One can see from the

Viewpoints of the survey	The importance of the scenery of the landscape	Time spent by viewing the landscape
Weighted mean value	4.356	3.759
Male	4.383	3.810
Female	4.340	3.731
15-29 years old	4.107	3.607
30-44 years old	4.516	3.778
45-59 years old	4.500	3.929
60-75 years old	4.414	3.931
With basic level of education	4.300	3.667
With secondary level of education	4.196	3.538
With higher level of education	4.440	3.776

Tab. 3: The cognitive relations of landscape preferences by various questionnaire groups  
Source: authors' survey and calculations



table that most important social indicators have no or only a very small correspondence with landscape preferences. We can see some emerging correlations, however, which could help in identifying tourists in the segmentation of the rail tourism market.

We can see that basically there are minimal correlations between aesthetic perceptions of a landscape and respondent social characteristics. As far as gender is concerned, we can detect a slightly moderate amount of inverse proportions (i.e. male respondent preferences) in mountainous and industrial landscapes. As for age, we detected that in the case of hilly and agricultural landscapes an increase in age is associated with preferences, but for the senior age group there is less liking for more dynamic and wild mountain areas. Perhaps, preferring the scenery of the more relaxed hilly areas can be correlated with the more relaxed psychic features of the elderly. Based on the educational groups, there is also an increase in interest for the hilly areas, meaning perhaps that the better-educated groups are somewhat more interested in gentler relief forms.

For the supply side of the issues, Table 5 shows railway landscape preferences based on the frequency of the landscape types analysed. In the table, the three most frequent landscape types can be seen. The results reflect the physical and social geographical characteristics of Hungary and provide no new and substantive results. Based on the spatial limits of rail tourism, however, it is worth highlighting.

As mentioned above, the train travellers taking part in the questionnaire survey favoured waterside and forest landscapes. The geographical allocation of waterside landscapes in Hungary is obvious due to the topographical features of Lake Balaton. At the same time, however, in the

case of forest landscapes, the railway lines crossing the Bakony Mountains (north of Lake Balaton) are missing from the top of the list. Instead, we find a majority of the Northern Hungarian railway lines in this respect. Since, based on the survey, a major part of train travellers preferred hilly regions, railway lines in the northern areas of Hungary are in favourable positions concerning rail tourism. This is obviously caused by the physical geographical features, since only a certain part of the railway lines crossing the Transdanubian areas run in woodland and mountain areas, unlike the northern Hungarian lines.

The urban environment is implicitly the most relevant along the railway lines in the agglomeration zones of the capital; moreover, the south western agglomeration zone of Budapest is overrepresented. The representation of the industrial zones can be connected to larger towns or cities (Tiszaújváros, Pécs, the industrial settlements of Northern Transdanubia). Agricultural landscapes appear mostly in the plain areas, especially in the south eastern parts of the country.

#### 4.2 Characterisation of the railway lines

Figure 2 shows the ten most valuable railway sections based on our methodology. The figure illustrates these highest-ranking railway lines both by the data weighted with tourism factors and without the tourism factors (only landscape values). We considered it important to visualise both results, since the spatial pattern of the most aesthetic and beautiful landscapes and the service capacity of tourism differ from each other. As long as the waterside and mountain areas dominate in the cognitive consciousness of the travellers, the capacity of tourism is connected to major destinations and larger cities, which can only be found in mountainous environments in the rarest of cases.

Viewpoints of the survey	Gender	Age	Education	Weighted average
Mountains	- 0.165	0.120	0.060	4.564
Hilly areas	- 0.026	0.162	0.212	4.130
Plain areas	- 0.128	0.104	- 0.105	2.988
Forested areas	0.008	0.055	0.096	4.147
Agricultural landscape	- 0.145	0.229	0.010	3.110
Waterside landscape	- 0.040	0.097	- 0.065	4.423
Settlement, urban	- 0.078	0.011	0.014	3.404
Industrial landscape	- 0.194	- 0.005	- 0.095	2.252

Tab. 4: The correlational relations of the importance of certain relief types and land use landscapes and gender, age and education level groups. Source: authors' survey and calculations

Viewpoints of the survey	1.	2.	3.
Forest, scrubland	Vác–Drégelypalánk (60.715%)	Eger–Szilvássvár (55.797%)	Somogyaszob–Gyékényes (50.812%)
Agricultural landscape	Orosháza–Mezőhegyes (90.768%)	Püspökladány–Biharkeresztes (90.584%)	Gyomaendrőd–Vésztő (90.358%)
Waterside	Csajág–Balatonfüred (49.663%)	Fonyód–Siófok (48.277%)	Balatonszentgyörgy–Fonyód (45.989%)
Urban	Érd–Pusztaszabolcs (17.157%)	Fót–Vác (15.754%)	Érd–Székesfehérvár (14.149%)
Industrial	Nyékládháza–Tiszaújváros (9.864%)	Szentlőrinc–Pécs (6.558%)	Tatabánya–Komárom (6.060%)

Tab. 5: The supply side of the railway landscape preferences based on the frequency of the landscape types analysed. Source: authors' survey and calculations

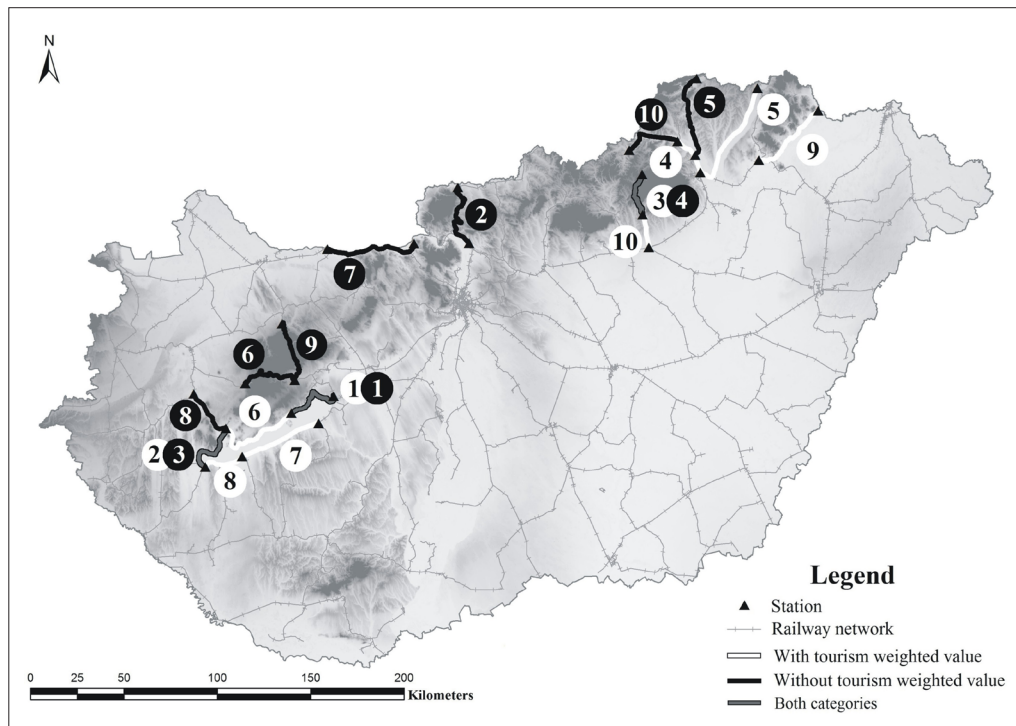


Fig. 2: The map of the top railway sections with and without tourism weighted values  
Source: authors' elaboration

No.	Without tourism weighted value	Value	With tourism weighted value	Value
1.	Csajág–Balatonfüred	613.011	Csajág–Balatonfüred	1839.033
2.	Vác–Drégelypalánk	474.786	Tapolca–Balatonszentgyörgy	1404.504
3.	Tapolca–Balatonszentgyörgy	468.168	Eger–Szilvásvárad	1370.790
4.	Eger–Szilvásvárad	456.930	Miskolc–Kazinbarcika	1260.981
5.	Sajóecseg–Tornanádaska	427.122	Miskolc–Hidasnémeti	1170.594
6.	Veszprém–Ajka	426.732	Balatonfüred–Tapolca	1152.684
7.	Esztergom–Komárom	425.787	Fonyód–Siófok	1124.736
8.	Tapolca–Ukk	425.118	Balatonszentgyörgy–Fonyód	1095.144
9.	Veszprém–Bakonyszentlászló	424.572	Szerencs–Sátoraljaújhely	1060.146
10.	Kazinbarcika–Ózd	422.499	Füzesabony–Eger	1038.222

Tab. 6: Further data of the top railway sections with and without tourism weighted values  
Source: authors' survey and calculations

Taking into consideration the landscape features, the major role of the northern railway lines at Lake Balaton is indisputable. The results confirm our observation that those waterside lines provide the most aesthetic and impressive landscapes for the train travellers, where the landscape meets with woodland mountainous areas. Such sections can be found on the northern shores of Lake Balaton between Balatonakaratya and Balatonfüred, and between Tapolca and Balatonszentgyörgy. Besides Lake Balaton, we can detect the most desirable railway lines at the Esztergom–Komárom section, where the railway follows the River Danube along the northern slopes of the Gerecse Mountains. At the same time, the other railway sections in the list can be found in exclusively mountainous woodland areas. Here we can find the railway lines of the Bakony Mountains in Transdanubia and the Börzsöny and Bükk Mountains in Northern Hungary, along with railways lines in the valleys of the Gömör-Torna Karst affording an excellent view of the mountains.

When considering the tourism weight we obtain rather different results. On the one hand, the railway lines along Lake Balaton result in a less important role, including the line along the southern shores as well. On the other hand, the railway lines of the mountainous areas in Central Transdanubia disappeared, while the regions in Northern Hungary received more favourable positions. The reasons can be found in the spatial structure of Hungary. While in the central areas of Transdanubia in the mountainous areas, the destinations with significant amounts of services industries are missing along the railway lines, in the northern Hungarian mountainous areas we find two major cities, Eger and Miskolc, with important tourism supply and demand indicators. At the same time, in the case of the Bakony Mountains, only the Lake Balaton region is adequate to supply a reasonable amount of tourists to the tourism-based railway travels.

The results also show some of the barriers to the possible integration of rail travel landscape preferences

and tourism. For the Hungarian railway lines, based on the symbiosis of landscape and travel, we can obviously take into consideration those where waterside, mountainous or woodland regions/landscapes or their combination is provided together with adequate tourism capacity. These are the sections between Csajág and Balatonfüred, Tapolca and Balatonszentgyörgy, Eger and Szilvássvár. Since all of these lines are associated with already functioning tourism destinations, we cannot expect any spatial expansion of tourism. Of the listed railway lines, six belong to the comprehensive network, and so the branch lines and feeders are present only to a limited extent. Based on tourism weight, the only line where a thematic tourism product could be established is found between Eger and Szilvássvár.

In the tourism-related symbiosis of railway travel and landscape values, we can only see strong progress when already functioning, successful destinations could be defined as regions for railway travel with integrated tourism purposes. Based on their physical geographical (landscape) and cultural supplies, the most appropriate basis for successful tourism integration is provided by the Lake Balaton region, Eger and Miskolc.

## 5. Conclusions

This research project has highlighted several factors in the complex system between rail travel and tourism, and we believe we were able to contribute to the domain of geographical tourism research with new results and interpretations.

The theoretical background has demonstrated that the relationships between travel motivations and landscape preferences are highly complex. The recognition that landscape preferences could influence travel motivations created new avenues for geographical research, such as seen in behavioural geography and applications of attitude theory for understanding travel behaviours. Since both this topic and our survey involve several subjective factors, a purely mathematical description is hardly possible, mainly because of the human factors. The authors do believe, however, that the role of the human psyche and behaviours makes these investigations more and more interesting and up-to-date. That is the reason why this article involved the preferences of the travellers in the investigations with a questionnaire survey.

Our earlier knowledge about rail tourists was further clarified. Resulting from the data obtained in the questionnaire survey, the most typical person buying a tourism package based on rail travel in Hungary would be a well-educated male, 45 years of age or older. Understanding the positions of rail travels and Hungarian and international leisure-oriented travels, we can state that the exploitation of the leisure opportunities of the rail system should be considered as a niche market segment, which cannot act independently but together with other, more attractive product elements.

We can conclude from our results that the integration of rail travel into tourism can promote the spatial expansion of tourism purpose, mobility and behaviour only to a limited degree. Railway lines and sections that can be associated with landscape preferences, can be found in the vicinity of already existing and functioning tourism destinations and in their background areas. In Hungary, we can rely on the railway lines running around Lake Balaton (especially in the northern regions) and along the foothills of the Bakony

Mountains. From our results we can conclude that in general in unfavourable weather conditions at the high season or in the off-season period, the target group of the Balaton region can be involved in tourism purpose rail travels. In Northern Hungary, we should highlight one of Hungary's most spectacular railway lines between Eger and Szilvássvár, connecting areas with a high number of visitors and ecotourism services (Bükk National Park). The tourism opportunities of the railway lines from Miskolc to the Bükk Mountains and in the Gömör-Torna Karst (the upper sections of the Sajó and Bódva Rivers) area should be considered in Northern Hungary. In addition, in this respect we can also highlight the importance of the Vác-Drégelypalánk section around the capital city in the Danube Bend.

Leisure travel by train per se can act only in rare cases as a product-motivating tourism behaviour. As a niche market, it can only enter the market together with other types. The scenery of railways in natural environments can be adequate to disperse soft tourism behavioural forms, such as obtaining a deeper knowledge of the railways and trains and their infrastructure – in other words, their industrial heritage, and / or the cognition of natural values.

Based on this project, we see further research potentials for such railway lines in or in the vicinity of national parks. Of these lines in Hungary, the most important ones are along the Balaton Highlands National Park, the Bükk National Park and the Aggtelek National Park.

Finally, we also have to take into consideration that, in Hungary, leisure types of rail tourism offer only generate same-day trips. Based on the size of its territory, the country possesses no adequate positions for long travels spanning several days. Because of the niche characteristics of rail tourism, it can capture the attention of tourists only as a marginal attraction. As a consequence, rail tourism would not be economically viable even in already-existing tourism destinations, and especially in socio-economic peripheries since there would be no well-functioning tourism products present in those regions. As a consequence, the introduction and management of the services of leisure-based rail tourism in Hungary would only be possible with professional and competent preparation, effectuation and with the help of further research.

## References:

- ALDSKOGIUS, H. (1977): A conceptual framework and a Swedish case study of recreational behavior and environmental cognition. *Economic Geography*, 53(2): 163–183.
- BARROSO, F. L., PINTO-CORREIA, T., RAMOS, I. L., SUROVÁ, D., MENEZES, H. (2012): Dealing with landscape fuzziness in user preference studies: Photo-based questionnaires in the Mediterranean context. *Landscape and Urban Planning*, 104(3–4): 329–342.
- BEZA, B. B. (2010): The aesthetic value of a mountain landscape: A study of the Mt. Everest Trek. *Landscape and Urban Planning*, 97(4): 306–317.
- BOURASSA, S. C. (1988). Toward a theory of landscape aesthetics. *Landscape and Urban Planning*, 15(3–4): 241–252.
- BUCKLEY, R. (2006): Environmental Inputs and Outputs in Ecotourism: Geotourism with a Positive Triple Bottom Line? *Journal of Ecotourism*, 2(1): 76–82.
- BUIJS, A. E., ELANDS, B. H. M., LANGERS, F. (2009): No wilderness for immigrants: Cultural differences in



- images of nature and landscape preferences, *Landscape and Urban Planning*, 91(3): 113–123.
- BUEHLER, R., NOBIS, C. (2010): Travel behavior in aging societies, comparison of Germany and the United States. *Transportation Research Record: Journal of the Transportation Research Board*, 2182: 62–70.
- BUNTING, T. E., GUELKE, L. (1979): Behavioral and perception geography: a critical appraisal. *Annals of the Association of American Geographers*, 69(3): 448–462.
- CHUA, B., SANGHYEOP, L., HUFFMAN, L., CHOI, H. (2015): The Role of Physical Environment in Leisure Service Consumption: Evidence From a Ski Resort Setting. *International Journal of Hospitality & Tourism Administration* 4: 375–407.
- COCEAN, G. (2010): The tourist role of relief as landscape background. *Romanian Review of Regional Studies*, 6(1): 79–90.
- CSORBA, P., LÓCZY, D., MEZŐSI, G. (2004): Recent landscape research in Hungary. *BELGEO – Revue Belge de Géographie*, 2–3: 289–300.
- DACHARY-BERNARD, J., RAMBONILAZA, T. (2012): Choice experiment, multiple programmes contingent valuation and landscape preferences: How can we support the land use decision making process? *Land Use Policy*, 29(4): 846–854.
- DANIEL, T. C., BOSTER, R. S. (1976): *Measuring Landscape Esthetics: The Scenic Beauty Estimation Method*. USDA, Fort Collins, CO. USDA Forest Service Research Paper No. RM-167.
- DE LA FUENTE DE VAL, G., MÜHLHAUSER S. H. (2014): Visual quality: An examination of a South American Mediterranean landscape, Andean foothills east of Santiago (Chile). *Urban Forestry & Urban Greening*, 13(2): 261–271.
- DENSTADLI, J. M., JACOBSEN, J. S. (2011): The long and winding roads: Perceived quality of scenic tourism routes. *Tourism Management*, 32(4): 780–789.
- DESBARATS, J. (1983). Spatial choice and constraints on behavior. *Annals of the Association of American Geographers*, 73(3): 340–357.
- DIJST, M., FARAG, S., SCHWANEN, T. (2008): A comparative study of attitude theory and other theoretical models for understanding travel behaviour. *Environment and Planning A*, 40(4): 831–847.
- FABOS, J. G. (1971): An analysis of environmental quality ranking systems in recreation. In: *Recreation Symp. Proc.* (pp. 40–55). Northeastern For. Exp. Stn., USDA For. Serv., Upper Darby, PA.
- FAGGI, A., BREUSTE, J., MADANES, N., GROPPER, C., PERELMAN, P. (2013): Water as an appreciated feature in the landscape: a comparison of residents' and visitors' preferences in Buenos Aires. *Journal of Cleaner Production*, 60: 182–187.
- FORNAL-PIENIAK, B., ŻARSKA, B. (2014): Methods of landscape evaluation for tourism and recreation. *Acta Scientiarum Polonorum – Formatio Circumiectus*, 13(2): 3–9.
- FRANK, S., FÜRST, C., KOSCHKE, L., WITT, A., MAKESCHIN, F. (2013): Assessment of landscape aesthetics—Validation of a landscape metrics-based assessment by visual estimation of the scenic beauty. *Ecological Indicators*, 32: 222–231.
- FREDE, H. G., BACH, M., FOHRER, N., MÖLLER, D., STEINER, N. (2002): Multifunktionalität der Landschaft – Methoden und Modelle. *Petermanns Geographische Mitteilungen*, 146: 58–63.
- FYHRI, A., JACOBSEN, J. K. S., TØMMERVIK, H. (2009): Tourists' landscape perceptions and preferences in a Scandinavian coastal region. *Landscape and Urban Planning*, 91(4): 202–211.
- GALAMBOS, J. (1989): New concepts in landscape assessment: a dynamic landscape assessment. In: Pécsi, M. [ed.]: *Geomorphological and geocological essays* (pp. 87–97). Budapest, Akadémiai Kiadó.
- GARRE, S., MEEUS, S., GULINCK, H. (2009): The dual role of roads in the visual landscape: A case study in the area around Mechelen (Belgium). *Landscape and Urban Planning*, 92: 125–135.
- GERGEL, S. E., TUNER, M. G. [eds.] (2017): *Learning Landscape Ecology. A Practical Guide to Concepts and Techniques*. New York, Springer-Verlag.
- GOLLEDGE, R. G. (1997): *Spatial behavior: A geographic perspective*. Guilford Press.
- GYURICZA, L., AMBRUS, T. (2008): An attempt at the quantitative evolution of the natural endowments of tourism. In: Matei, E. [ed.]: *Sustainable Tourism Development in the Carpathian Mountains: The First International Carpathians Tourism Conference* (pp. 42–65). Bucuresti, Universitara Housing Press.
- HALSALL D. A. (2001): Railway heritage and the tourist gaze: Stoomtram Hoorn-Medemblik. *Journal of Transport Geography*, 9(2): 151–160.
- HORVÁTH G. (2008): Természeti, táji értékek számszerű minősítése. In: Csorba, P., Fazekas, I. [eds.]: *Tájékutató – tájökológia* (pp. 73–85). Debrecen, Meridián Alapítvány.
- HOWLEY, P. (2011): Landscape aesthetics: Assessing the general public's preferences towards rural landscapes. *Ecological Economics*, 72: 161–169.
- JACOBSEN, J. K. S. (2007): Use of Landscape Perception Methods in Tourism Studies: A Review of Photo-Based Research Approaches. *Tourism Geographies – An International Journal of Tourism Space, Place and Environment*, 9(3): 234–253.
- JADE, R., MOLKOVÁ, T., KVIZDA, M. (2015): Role of railways in empowering travelers: A case study from the Czech Republic. *Journal of Rail Transport Planning & Management*, 5(2): 31–49.
- JASZCZAK, A., ŽUKOVSKIS, J. (2011): Landscape valuation in development of rural tourism: case study of Ostfriesland (Germany). *Management theory and studies for rural business and infrastructure development*, 5(29): 89–95.
- JEANLOZ, S., LIZIN, S., BEENAERTS, N., BROUWER, R., VAN PASSEL, S., WITTERS, N. (2016): Towards a more structured selection process for attributes and levels in choice experiments: A study in a Belgian protected area. *Ecosystem Services*, 18: 45–57.
- JOLY, D., BROSSARD, T., CAVAILHES, J., HILAL, M., TOURNEUX, F. P., TRITZ, C., WAVRESKY, P. (2009): A quantitative approach to the visual evaluation

- of landscape. *Annals of the Association of American Geographers*, 99(2): 292–308.
- JUNGE, X., SCHÜPBACH, B., WALTER, T., SCHMID, B., LINDEMANN-MATTHIES, P. (2015): Aesthetic quality of agricultural landscape elements in different seasonal stages in Switzerland. *Landscape and Urban Planning*, 133: 67–77.
- KALIVODA, O., VOJAR, J., SKŘIVANOVÁ, Z., ZAHRADNÍK, D. (2014): Consensus in landscape preference judgments: The effects of landscape visual aesthetic quality and respondents' characteristics, *Journal of Environmental Management*, 137: 36–44.
- KIRILLOVA, K., FU, X., LEHTO, X., CAI, L. (2014): What makes a destination beautiful? Dimensions of tourist aesthetic judgment. *Tourism Management*, 42: 282–293.
- KNUDSEN, D. C., SOPER, A. K., METRO-ROLAND, M. (2007): Commentary: Gazing, Performing and Reading: A Landscape Approach to Understanding Meaning in Tourism Theory. *Tourism Geographies – An International Journal of Tourism Space, Place and Environment*, 9(3): 227–233.
- LEOPOLD, L. B. (1969): Quantitative comparison of some aesthetic factors among rivers. *Geol. Survey Circ.* 630: 1–16. USD1 Geological Survey, Washington, DC.
- LIU, B. (2015): Quality Evaluation and Structure Optimization of Tourism Landscape (pp. 267–270). International Conference on Management Science and Innovative Education (MSIE 2015).
- LÓCZY, D. (2015) [ed.]: *Landscapes and Landforms of Hungary*. Dordrecht, Springer Science+Business Media B.V.
- MAROSI, S., SZILÁRD, J. (1985): Landscape topology and evaluation of the Balaton 'Riviera'. In: Pécsi, M. [ed.]: *Environmental and dynamic geomorphology: case studies in Hungary: contribution to the First International Geomorphological Conference*, Manchester, (pp. 141–145). Budapest, Akadémiai Kiadó.
- MARTÍN, M., ORTEGA, E., OTERO, I., ARCE, R. M. (2016): Landscape character assessment with GIS using map-based indicators and photographs in the relationship between landscape and roads. *Journal of Environmental Management*, 180: 324–334.
- MEZŐSI, G. (1990): Versuche zur Determination der ästhetischen Werte der Landschaft. *Acta Universitas Szegediensis, Acta Geographica*, 28–30: 51–66.
- MYGA-PIATEK, U., NITA, J. (2008): The scenic value of abandoned mining areas in Poland. *Acta Geographica Debrecina, Landscape & Environment Series*, 2(2): 132–142.
- NIKOLAISHVILI, D., DONADZE, T., MELADZE, G., TRAPAIÐZE, V., DVALASHVILI, G., SHARASHENIDZE, M., TIGISHVILI, T. (2012): Evaluating the touristic potential of Georgia's landscapes. *Forum geografic. Studii și cercetări de geografie și protecția mediului*, 11(2): 145–154.
- NITA, J., MYGA-PIATEK, U. (2014): Scenic values of the Katowice – Częstochowa section of national road No. 1. *Geographica Polonica*, 87(1): 113–125.
- ODE, Á., MARI, S., TVEIT, M., FRY, G. (2008): Capturing Landscape Visual Character Using Indicators: Touching Base with Landscape Aesthetic Theory. *Landscape Research*, 33(1): 89–117.
- PAGE, S. J. (2009): *Transport and tourism global perspectives*. London, Pearson, Prentice Hall, Harlow.
- PARDO-GARCÍA, S., MÉRIDA-RODRÍGUEZ, M. (2017): Measurement of visual parameters of landscape using projections of photographs in GIS, *Computers, Environment and Urban Systems*, 61, Part A: 56–65.
- PETERSON, M. N., THURMOND, B., MCHALE, M., RODRIGUEZ, S., BONDELL, H. D., COOK, M. (2012): Predicting native plant landscaping preferences in urban areas. *Sustainable Cities and Society*, 5: 70–76.
- PHILLIPS, M. R., EDWARDS, A. M., WILLIAMS, A. T. (2010): An incremental scenic assessment of the Glamorgan Heritage Coast, UK. *The Geographical Journal*, 176(4): 291–303.
- RIECHERS, M., BARKMANN, J., TSCHARNTKE, T. (2015): Perceptions of cultural ecosystem services from urban green. *Ecosystem Services*, 17: 33–39.
- ROGGE, E., NEVENS, F., GULINCK, H. (2007): Perception of rural landscapes in Flanders: Looking beyond aesthetics. *Landscape and Urban Planning*, 82(4): 159–174.
- ROSLEY, M. S. F., LAMIT, H., RAHMAN, S. R. A. (2016): Perceiving the Aesthetic Value of the Rural Landscape through Valid Indicators. *Procedia – Social and Behavioral Sciences*, 85: 318–331.
- SCOTT, A. (2006): Assessing public perception of landscape: past, present and future perspectives. *CAB Reviews: Perspectives in Agriculture, Veterinary Science, Nutrition and Natural Resources*, 1(041).
- SEVENANT, M., ANTROP, M. (2009): Cognitive attributes and aesthetic preferences in assessment and differentiation of landscapes, *Journal of Environmental Management*, 90(9): 2889–2899.
- SEVENANT, M., ANTROP, M. (2010): The use of latent classes to identify individual differences in the importance of landscape dimensions for aesthetic preference. *Land Use Policy*, 27(3): 827–842.
- SHAFFER, E. L., HAMILTON, J. F., SCHMIDT, E. A. (1969): Natural landscape preferences: a predictive model. *Journal of Leisure Research* 1: 1–19.
- SHAFFER, E. L. (1969): Perception of natural environments. *Environment and Behavior*, 1(1): 71–82.
- SCHIRPKE, U., TASSER, E., TAPPEINER, U. (2013): Predicting scenic beauty of mountain regions, *Landscape and Urban Planning*, 111: 1–12.
- SITWELL, O. F. G., LATHAM, G. R. (1979): Behavioural geography and the cultural landscape. *Geografiska Annaler B*, 51–63.
- SWANWICK, C. (2009): Society's attitudes to and preferences for land and landscape. *Land Use Policy*, 26: 62–75.
- TAGLIAFIERRO, C., BOERI, M., LONGO, A., HUTCHINSON, W. G. (2016): Stated preference methods and landscape ecology indicators: An example of transdisciplinarity in landscape economic valuation, *Ecological Economics*, 127: 11–22.
- TIMMERMANS, H. (1981): Spatial choice behaviour in different environmental settings: an application of the revealed preference approach. *Geografiska Annaler. Series B. Human Geography*, 63(1): 57–67.

- TURNER, M. G., GARDNER, R. H. (2015): *Landscape Ecology in Theory and Practice. Pattern and Process*. New York, Springer-Verlag.
- TURNER, M. G., GARDNER, R. H., O'NEILL, R. V. (2001): *Landscape Ecology in Theory and Practice. Pattern and Process*. New York, Springer-Verlag.
- TVEIT, M., ODE, Å., FRY, G. (2007): Key concepts in a framework for analysing visual landscape character. *Landscape Research*, 31(3): 229–255.
- VAN DER JAGT, A. P. N., CRAIG, T., ANABLE, J., BREWER, M. J., PEARSON, D. G. (2014): Unearthing the picturesque: The validity of the preference matrix as a measure of landscape aesthetics. *Landscape and Urban Planning*, 124: 1–13.
- VAN DER ZEE, D. (1990): The complex relationship between landscape and recreation. *Landscape Ecology*, 4(4): 225–236.
- VAN ZANTEN, B. T., VERBURG, P. H., SCHOLTE, S. S. K., TIESKENS, K. F. (2016a): Using choice modeling to map aesthetic values at a landscape scale: Lessons from a Dutch case study. *Ecological Economics*, 130: 221–231.
- VAN ZANTEN, B. T., ZASADA, I., KOETSE, M. J., UNGARO, F., HÄFNER, K., VERBURG, P. H. (2016b): A comparative approach to assess the contribution of landscape features to aesthetic and recreational values in agricultural landscapes. *Ecosystem Services*, 17: 87–98.
- VARJÚ, V., SUVÁK, A., DOMBI, P. (2014): Geographic Information Systems in the Service of Alternative Tourism – Methods with Landscape Evaluation and Target Group Preference Weighting. *International Journal of Tourism Research*, 16(5): 496–512.
- VIZZARI, M. (2010): Spatial modelling of potential landscape quality. *Applied Geography*, 31(1): 108–118.
- VOULIGNY, É., DOMON, G., RUIZ, J. (2009): An assessment of ordinary landscapes by an expert and by its residents: Landscape values in areas of intensive agricultural use. *Land Use Policy*, 26(4): 890–900.
- WANG, R., ZHAO, J., LIU, Z. (2016): Consensus in visual preferences: The effects of aesthetic quality and landscape types. *Urban Forestry & Urban Greening*, 20: 210–217.
- YOSHIHARA, T., NISHINA, D., TANAKA, T., KAWASE, K., TAKAGISHI, H. (2017): A Study on the Psychological Evaluation of Tourism Landscape Images in Hiroshima – A Psychological Evaluation by Korean Subjects. *Journal of Asian Architecture and Building Engineering*, 16(1): 223–229.
- ZUBE, E. H. (1974): Cross-disciplinary and intermode agreement on the description and evaluation of landscape resources. *Environment and Behavior*, 6(1): 69–89.
- ZUBE, E. H., PITT, D. G. ANDERSON, T. W. (1974): Perception and measurement of scenic resources in the southern Connecticut River Valley. Institute for Man and His Environment, Publ. R-74-1. Amherst, Mass.

**Please cite this article as:**

SOMOGYI, B., CSAPÓ, J. (2018): The role of landscape preferences in the travel decisions of railway passengers: Evidence from Hungary. *Moravian Geographical Reports*, 26(4): 298–309. Doi: 10.2478/mgr-2018-0024.



## REVIEWERS OF PAPERS OF THE 2018 VOLUME

The editorial team is grateful for the following scholars who have invested their time and expertise in the peer-review processes during the production of the 2018 Volume (in alphabetical order):

- Louis Albrechts (University of Leuven)*  
*Jan Amcoff (Uppsala University)*  
*Alexandra Appel (Julius Maximilian University of Würzburg)*  
*Jerzy Banski (IGSO PAS Warsaw)*  
*Kristína Bilková (Institute of Geography SAS, Bratislava)*  
*Lars Bodum (Aalborg University)*  
*Jordan Brasher (University of Tennessee)*  
*Zuzanna Brunarska (University of Warsaw)*  
*Dorota Celińska-Janowicz (Warsaw University)*  
*Agata Cieszevska (Warsaw University of Life Sciences)*  
*José Rio Fernandes (University of Porto)*  
*Allan Findlay (University of St Andrews)*  
*Andrew Gilg (University of Exeter)*  
*Oleg Golubchikov (Cardiff University)*  
*Michael F. Goodchild (University of California, Santa Barbara)*  
*Agata Górny (University of Warsaw)*  
*Peter Grootte (University of Groningen)*  
*Sina Hardaker (Julius Maximilian University of Würzburg)*  
*Robert Hassink (Kiel University)*  
*Joshua Inwood (Pennsylvania State University)*  
*Jens Kristian Steen Jacobsen (University of Stavanger)*  
*Kristýna Janečková (ČZU Praha)*  
*Lee Jolliffe (University of New Brunswick)*  
*Mathias Kiese (Ruhr-University Bochum)*  
*Pavel Klapka (Palacký University Olomouc)*  
*Ljubica Knežević Cvelbar (University of Ljubljana)*  
*František Križan (Comenius University in Bratislava)*  
*Slawomir Kurek (Pedagogical University of Cracow)*  
*Walter Leimgruber (Fribourg University)*  
*Brent Lovelock (University of Otago, Dunedin)*  
*Abdeslam Marfouk (University of Liege)*  
*Jaroslav Maryáš (Masaryk University, Brno)*  
*Eduardo José Rocha Medeiros (Lisbon University)*  
*Josip Mikulic (University of Zagreb)*  
*Jana Mitriková (University of Prešov)*  
*Patrick Naef (University of Geneva)*  
*Carolina Peña Alonso (University of Las Palmas de Gran Canaria)*  
*Robert Osman (Institute of Geonics, Brno)*  
*Korneliusz Pylak (Lublin University of Technology)*  
*Garri Raagmaa (University of Tartu)*  
*Kees Terlouw (Utrecht University)*
- Joni Vainikka (University of Oulu)*  
*Lukas Vonnahme (Leibniz-Institute for Regional Geography, Leipzig)*  
*Edda Ruth Hlín Waage (University of Iceland)*  
*Claire Wallace (University of Aberdeen)*  
*Drew Woodhouse (Sheffield Hallam University)*  
*Craig Young (Manchester Metropolitan University)*  
*Krystof Zeman (Austrian Academy of Sciences)*  
*Kaj Zimmerbauer (University of Oulu)*



# MORAVIAN GEOGRAPHICAL REPORTS

## Aims and scope

Moravian Geographical Reports [MGR] is an international, fully peer-reviewed journal, which has been published in English continuously since 1993 by the The Czech Academy of Sciences, Institute of Geonics through its Department of Environmental Geography. The journal followed the traditions of the Reports of the Institute of Geography of the Czechoslovak Academy of Sciences, which was published from 1963 to 1992.

The MGR journal has been indexed in the SCOPUS database since 1993. In 2012, MGR was selected for coverage in the WEB OF SCIENCE (Thomson Reuters/Clarivate Analytics) products and customs information services. Beginning with Volume 19 (2011), this publication is being indexed and abstracted in the Social Science Citation Index®, Current Contents Connect®, Journal Citation Reports / Social Science Edition®.

As a general purpose journal, it receives and evaluates articles contributed by both Human and Physical Geographers, as well as by other researchers who specialize in related disciplines, including the geosciences and geo-ecology, and the human sciences (sociology, urban studies, etc.). The journal has a distinct regional orientation, broadly for countries in Europe. The title of the journal celebrates its origins in the historic lands of Moravia in the eastern half of the Czech Republic.

The Moravian Geographical Reports aims at presenting original and relevant research on topics responding to the role of 'regions' and 'localities' in a globalized society, given the geographic and temporal scales at which they are evaluated.

Several inter-related questions are stressed:

- the problems of regional economies and societies, especially over time;
- societies and societal change in urban or rural contexts;
- regional perspectives on the influence of human activities on landscapes and environments;
- the relationships between localities and macro-economic structures in rapidly changing socio-political and environmental conditions;
- environmental impacts of technical processes on bio-physical landscapes; and
- physical-geographic processes in landscape evolution, including the evaluation of hazards such as floods, landslides, etc.

Theoretical questions in the broad discipline of Geography are also addressed, especially the relations between Physical and Human Geography in their regional and temporal dimensions.

## Types of papers

The journal, Moravian Geographical Reports, publishes the following types of papers:

(1) Original scientific paper: the backbone of individual journal issues. These contributions from geography and regionally-oriented results of empirical research in various disciplines, normally have theoretical and methodological sections and must be anchored in the international literature. We recommend following the classical structure of a research paper: introduction, including objectives; theoretical and methodological bases for the work; empirical elaboration of the project; evaluation of results and discussion; conclusions and references. With the exception of purely theoretical papers, each contribution should contain colour graphic enclosures such as maps, charts, diagrams, photographs, etc. Some of the photographs may be placed on the second, third or fourth cover pages of the journal. For papers on regional issues, a simple map indicating the geographical location of the study region should be provided. Any grant(s) received to support the research work should be acknowledged. Major scientific papers include an Abstract (up to 200 words) and 3 to 6 keywords. The length of the text should be in the range of 6,000 – 8,000 words (the word count does not include the abstract, tables, figures, and references), plus a maximum of 3 pages of enclosures (tables, figures). The number of graphic enclosures can be increased by one page provided the text is shortened by 500 words below the maximum allowable length (per graphic page). All scientific papers are subject to the peer-review process by at least two independent reviewers appointed by the Editorial Board.

(2) Scientific communications are published to inform the public of continuing research projects, scientific hypotheses or findings. This section is also used for scientific discussions that contest or refine scientific opinions, including viewpoints and/or comments that critique recently- published papers. The maximum text length for these scientific communications is 4,000 words. Some contributions may be reviewed at the discretion of the Editorial Board.

(3) Moravian Geographical Reports also publishes Invited reviews of major monographs from geography and related disciplines published as books or atlases. Reviews are supplied exclusively on request from the Editorial board. The review must contain a complete citation of the reviewed work and its maximum text length is 2,000 words. Graphics are not expected for the reviews section.

For a detailed description of the types of papers, preparation of submissions and review process see the Instructions for Authors on this webpage: [http://www.geonika.cz/EN/research/MGR\\_instructAuthors.pdf](http://www.geonika.cz/EN/research/MGR_instructAuthors.pdf)

## Review process

The entire submission and review process is handled via e-mail communication with the Executive Editor and/or Coordinating Editors. All manuscripts must be submitted in electronic version via e-mail to the address listed at the end of this document. Editors (selected members of the Editorial Board) evaluate all manuscripts first. Manuscripts rejected at this stage of the editors' initial review are either insufficiently original, or have scientific flaws, are expressed in poor grammar/English language, or are outside of the aims and scope of the journal. Poor English language is a common reason for initial rejection. Failure to follow the Guide for Authors and the Technical Instructions will result in the manuscript being returned to the author. Manuscripts that meet the minimum criteria are evaluated by at least two subject matter experts for an in-depth double-blind peer review. The reviewers advise the coordinating editors, who are responsible for the final decision regarding acceptance or rejection of papers. The editor's decision is final. Moravian Geographical Reports generally allows for only one revision iteration during which all reviewers' and coordinating editor's comments must be met by the authors, who are required to submit the revised version of their manuscript within three (3) months.

**All manuscripts are to be sent to the following e-mail address: [mgr@geonika.cz](mailto:mgr@geonika.cz)**