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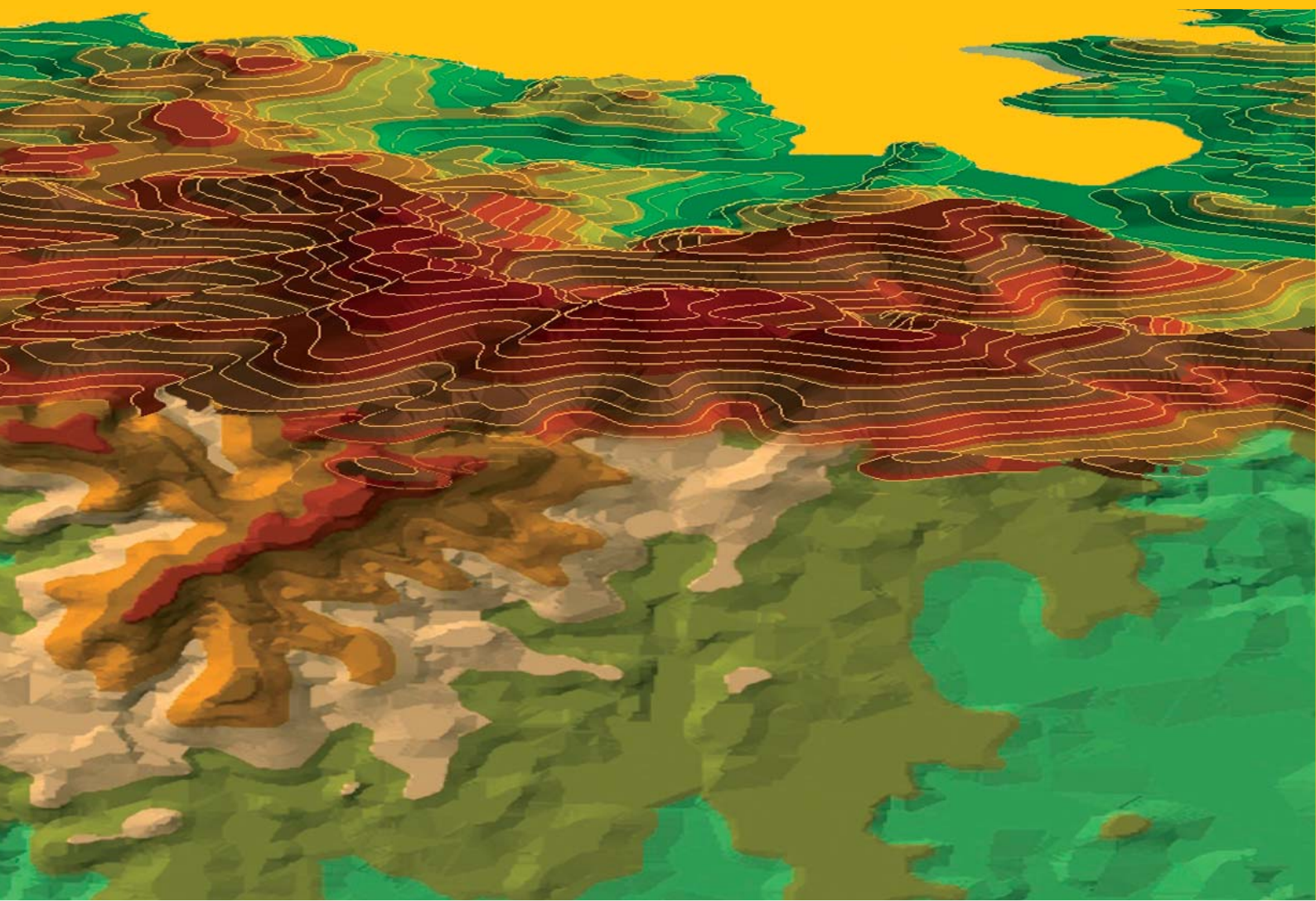

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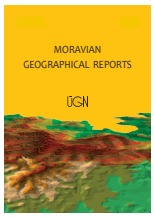

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Rhythm of urban retail landscapes: Shopping hours and the urban chronotopes

Ondřej MULÍČEK [a]*, Robert OSMAN [a]

Abstract

Daily rhythmical patterns in the city are investigated in depth in this paper. The city is conceptualised here as a cyclical process and described by a sequence of relatively stable spatial-temporal stages. The concept of a chronotope is incorporated in the analysis of retail opening hours in the middle-sized city of Brno (Czech Republic), in order to identify distinct fusions of specific times and specific retail places and to examine their position within the daily rhythms of the city. There are distinct time-space retail configurations (chronotopes), which play crucial roles in the social negotiation and imagination of basic temporal categories, such as early morning, late morning, lunchtime, afternoon, evening, as being taken-for-granted in the urban context. More generally, the paper offers an example of the ways in which the specific daily rhythms of the city are produced and structured.

Keywords: *retail, urban rhythm, urban time, chronotope, opening hours, Brno, Czech Republic*

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1. Introduction: retailing in the post-industrial city

The rise of the modern industrial city engendered qualitatively new social relations and patterns accompanying industrialisation processes when compared with the pre-industrial era (Saunders, 1985). For a long time, the issues reflected in urban research were focused predominantly on the production aspects of urban industrialism – urban production functions were taken as key agents of urban development and internal urban differentiation. Indeed, it is not surprising as productive industrialism as a mode of urban labour reproduction and capital accumulation became deeply rooted into daily urban routines, in the social stratification of the urban population and in place-making in city space (Byrne, 2002). It was Castells' theory of collective consumption that drove research foci to the city itself. According to Castells (1977), exclusively urban issues do not arise from the productive role of cities but from their exclusiveness within consumption processes. Cities are places where the state is systematically engaged in the reproduction of labour through the supply of collectively consumed goods and services. Therefore the elementary urban processes are no more purely industrial: urbanity and city-being relates increasingly to the various processes of collective and individual consumption. Likewise, Baudrillard (1973) contends that while the industrial system socialised the masses as labour power, further societal development promotes their consumption power.

Consumption activities produce and remodel urban structures in different ways compared to industrialisation processes. The emergence of new types of goods with different geographical distributions within the urban space, the conflict of new commodities and ways of their consumption with the traditional local milieu, the production of new spaces of consumption replacing the former dominant spaces of production, as well as new emerging forms of social stratification based on cultural factors and consumption patterns – these are some examples of the various ways in which consumption patterns interplay with the physical, social or functional urban structures (Herrschel, 1999; Crewe, 2000). Rather than industrial production, consumption activities bring new post-industrial focal points like shopping malls, hypermarkets and leisure parks (Jayne, 2006), transforming the meanings, times and rhythms of the old urban places and attaching new functions and symbolism to them.

Urban consumption represents a complex tissue of overlying consumer spaces and rhythms. While the industrial city has been frequently depicted as a well-

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synchronised time machine or isorhythmia (Lefebvre and Elden, 2004), the urban post-industrial period has been seen as desynchronised, destandardised or polyrhythmic in temporal terms (Paolucci, 2001; Stavrides, 2013; Mulíček, Osman and Seidenglanz, 2016). Urban commerce becomes a more and more influential agent of urban everydayness and leaves deep imprints in the spatiotemporal organisation of the city (Kärrholm, 2009, 2012).

This article aims to conceptualise the city as a cyclical repetitive process through chronotopic analyses of retail opening hours. In spite the fact that retail represents just one part of the broad set of urban consumption activities, we argue that it contributes significantly to the overall rhythmicity of the city. While the spatial anchoring of urban retailing and shopping is given by the physical location of particular retail units differing in terms of retail floor area and the assortment of goods, the category of retail temporality includes the opening hours of shops. Employing the extensive datasets on the retail network in the Czech middle-sized city of Brno, we conceptualise particular stores as specific urban places, which can be grasped through their spatial as well as their temporal dimensions. We introduce the concept of chronotope in order to identify distinct fusions of specific times and specific retail places and to examine their position within the daily rhythm of the city. In this sense, we argue that open shops occupying specific urban places and times are very significant institutional agents defining and delimiting particular stages within the course of the day in the city. The message of the article thus consists in the description the distinct time-space retail configurations (chronotopes), which play a crucial role in the social negotiation and imagination of basic temporal categories, such as early morning, late morning, lunch time, afternoon and evening, as being taken-for-granted in the urban context (Jauhiainen and Mönkkönen, 2005; Jauhiainen, 2007). At the theoretical level, the paper aims to find and differentiate the ways of describing the time-space of the city or, more specifically, to diversify the spatiotemporal description of the city. This theoretical ambition is formulated by the following research questions: "How does one describe the temporal heterogeneity of the city?"; and "How does one describe the city in spatiotemporal terms?".

2. Theoretical background

2.1 Retail strategies

According to de Certeau (1984, p. 38) the strategies are "actions which, thanks to the establishment of a place of power, elaborate theoretical places (systems and totalising discourses) capable of articulating an ensemble of physical places in which forces are distributed", while 'tactics' is seen as "procedures that gain validity in relation to the pertinence they lend to time – to the circumstances which the precise instant of an intervention transforms into a favourable situation". He considers strategies, to certain extent, as the spatialised settings for time-space tactics. The location of retail premises within an urban territory, their opening hours throughout the day, week and year, can be thus viewed as the rational power places of commercial strategies – fixed however not only in space, but also in time.

A considerable body of literature has been devoted to the purely spatial aspects of retail location strategies. Spatialised strategies still represent a well-established research field, however, somewhat fading within the discourse of the so-called reconstructed retail geography (Crewe, 2000). On the other hand, the temporal aspects of retailing seem to get increasing attention from researchers, as well as from political viewpoints.

Time policies (or policies of time) are gradually being introduced, principally in the European countries. Their core concepts are relatively diverse, however, as they come from different contexts (most often represented by urban planners, architects, sociologists, geographers and economists) and as they reflect some specific time-cultures of particular countries. In the UK, time policy is understood as part of a wider concept of geopolitics (Klinke, 2013), while in Italy it is seen as a tool for setting equal opportunities for different population groups (an emphasis is placed mainly on gender equality: Bonfiglioli, 1997; Mareggi, 2002; Pasqui, 2016). In Germany, time policies are used to coordinate and synchronise various services and functions of the state (Boulin and Mückenberger, 2005; Mückenberger 2011), whilst in Portugal they are primarily tools for planning and regulating mobility and accessibility (Fernandes, 2011; Fernandes and Chamusca, 2014; Fernandes et al., 2015). The French approach covers the issues of spatiotemporal planning and so-called "chrono-urbanisme", in an effort to respond to the social inequalities associated with the overall acceleration of society, with the irregularity of everyday activities, uncertainty, an unpredictable and difficult-to-plan future, as well as with time-stress (Ascher, 1997, 2001, 2008; Gwiazdzinski, 2014, 2015; Straw, 2015).

In the Czech Republic, as well as in the post-socialist countries of Europe, these policies are not yet developed at the official level. What is, however, typical and therefore unifying all these different concepts of time policies, is a participatory bottom-up principle: the specific contents of these time policies are derived from the particular needs of the community (Bonfiglioli, 1997; Goodin, 2010; Mückenberger, 2011). In this respect, there is a growing pluralism between different concepts of time. There are two concepts of time commonly used in the current practice of European time policies, namely urban time (linear, mechanical), and social time (heterogeneous and discontinuous) (Melucci, 1996; Hoffmann and Lapeyre, 1995; Hoffmann, 1997; Bonfiglioli, 1997; Mareggi, 2002; Stavrides, 2012, 2013; Pasqui, 2016). Social time is primarily understood as the behaviour of an urban society, including socially established rituals, habits, traditions and holidays. It can be perceived as a kind of timing of routinely repeated social activities such as daily getting up, eating, working, training, sports and relaxation (Adam, 1994, 1995, 2004). On the other hand, urban time is represented by the timing of urban services and institutions. We can consider the opening and closing times of various institutions, offices, schools, hospitals and, of course, shops, as classic representatives of urban time (Kärrholm, 2009, 2012; Fernandes and Chamusca, 2014).

The retail times and rhythms became important subjects of discussions, negotiations and regulations, which only reflect the changing societal and economic meanings of time, the loosening synchrony of modern industrial towns and the rising flexibility of post-industrialism. In this respect, Paolucci (2001) draws attention to the politics of time as attempts to grasp the power of time in the fragmented space of the post-industrial city. These politics can take a number of forms – they include global discussions on the effects of daylight saving time, local timetable planning activities in mostly Italian towns (Bonfiglioli, 1997; Mareggi, 2002), negotiations on time regimes in night-economy urban areas,

as well as shopping hours regulation issues (Wenzel, 2011). It is particularly the deregulation and extension of shopping hours in the course of the day and week, which since the 1990s is a vital issue raised not only in political debates but also reflected in academic research. This issue was seized mainly by economists and thus somewhat narrowed down to studying the relationship between the hours of retail operation and consumer demand and the diversified impacts of deregulation on the competitiveness of retail premises (Wenzel, 2011; Inderst and Irmen, 2005; Lanoie, Tanguay and Vallée, 1994). The studies revealed in general "a strategic uncertainty between decision-makers in the retail sector" (Kosfeld, 2002, p. 52), concerning the temporal coordinates of their businesses. Temporal strategies cope with a plethora of changing work schedules, family responsibilities and the schedule-independent shopping tactics of consumers (Kaufman and Lane, 1994), and deregulated retail time-space thus hardly shows any clear patterns.

Kärrholm (2009) identifies two groups of processes through which retail activities shape the urban time-space – synchronisation and territorialisation: they can be called strategic in de Certeau's approach. There are several more or less clearly pronounced synchronisation strategies described in his case study of the city of Malmö, including synchronisation to the rhythms of other commercial subjects, to peoples and collectives. Kärrholm points out that purely temporal synchronisation processes go inevitably hand in hand with spatial localisation and synchorisation. Retailing introduces specific rhythms and synchronicities into specific territories, imposing a kind of spatio-temporal order on them. From this point of view and in accordance with Kärrholm, this study will not be interested in retail customers' tactics, i.e. in the social demand time of the shoppers. On the contrary, the subject interest here lies in the analysis of the strategies of retailers that are represented by the offer urban time of retail.

2.2 Chronotopic approach to retail rhythms

Urban everydayness consists of numerous repetitive actions, situations and movements which fuse together to orchestrate overall city rhythmicity – a relatively stable syntax of places and times whose reproduction is driven by various schedules and timetables. Lefebvre treats rhythms as measures sui generis, specific analytical standpoints capable of structuring the urban environment in terms of its time-spatial unity, manifestations of (de) synchronised and (de)synchorised routines (Lefebvre and Elden, 2004). Lefebvre and Elden, however, do not offer particular analytical and interpretative tools enabling an operationalisation of rhythmanalysis. Some authors, such as Folch-Serra (1990), Holloway and Kneale (2000) or Crang (2001), draw attention to the concept of chronotope developed by Russian philosopher and literary critic Mikhail Bakhtin. The chronotopic approach emphasises the dialogue between specific times and specific spatial settings. A chronotope can be understood as an analytical unit materialising (spatialising) time and, at the same time, timing space. Neither time nor space are privileged categories here – both of them are inseparable and mutually interwoven constituents of specific time-space (Bakhtin, 1980, 1984, 1986, 2002). Bakhtin himself employed the chronotope concept to outline a typology of situations in novels, pointing out its representational importance (Folch-Serra, 1990). From a geographical point of view, a chronotope is defined by rhythmic presence, co-presence and absence of people, objects, noises and smells taking place in a concrete place and concrete time (Crang, 2001, 2005). Seen from a research perspective, it is the analytical frame organising the viewpoint, scope and scale of the enquiry.

A chronotope represents a "distinctive bundle of time and space" (Harvey, in Folch-Serra, 1990, p. 264) grasped through narration, which interlinks present people, processes and activities into a single, interpretatively convenient time-space unit. Binding the units together, we can narrate the spatially differentiated temporality of the city, its rhythmicity and tempo. In our case study, the chronotope concept is implemented within the specific segment of retail time-space. The dialogical nature of the retail chronotope(s) stems from multi-layered and multi-scalar linkages between the spatial and temporal dimensions of the retail strategies taking place within specific urban context(s). Lefebvre's well-known notion of rhythm as the interaction between place and time can be invoked here, highlighting the crucial role of rhythms in the appropriation and negotiation of urban time-space (Lefebvre and Elden, 2004).

3. Methodology

The empirical goal of this paper is to conceptualise a city as a cyclical repetitive process through the chronotopic analysis of retail opening hours. In other words, we aim to use the strategic location of retail facilities in space and time in order to conceptualise the city as a kind of a cyclical loop. The theoretical goal of the paper is closely linked to this empirical framing. It consists in a search for the differentiated ways of capturing the time-space of the city, especially with respect to the diversified spatiotemporal description of the city. The spatiotemporal description can be approached from a variety of perspectives. Firstly, the city can be structured into particular spatial areas with relatively homogeneous temporalities (time regions). The basic organisational principle of the analytical description is therefore spatial, exploring the city as a spatial mosaic, from one region to another (Mulíček, Osman and Seidenglanz, 2015). Secondly, the temporal view can be employed primarily in the sense that it produces a description of the city for particular time periods. Such a city description follows the logic of temporal ordering, approaching the city as a succession of different times coming one after another (Mulíček, Osman and Seidenglanz, 2016). These two perspectives, however, can be combined in many different ways (Mulíček and Osman, 2017).

This paper draws on the latter second perspective on spatio-temporal urban depiction as it puts the accent on temporal structuration. In this respect, the concept of chronotope is employed as a specific kind of time-space. Particular chronotopes are arranged and described in a time order which follows the daily cycle. The underlying motivation is to show the city as a dynamic process consisting of repeating rhythms, unstable and fluid in its essence. Considering the city as a loop of cyclically alternating time-spaces is, to a certain extent, a critical response to those imaginaries that represents city as static and timeless entity.

This approach also implies the design of the research, which has the character of a case study carried out in a single city. The purpose of the case study is certainly not to provide a generic description of city time-space. It is rather a case that allows the researchers to illustrate a certain conceptualisation of the city and the related types of its spatiotemporal description. Therefore, the choice of the city is not based on pre-defined criteria, but

is mainly driven by pragmatic motivations. The empirical part of the research was conducted in the city of Brno, the second largest city in the Czech Republic, with approximately 400,000 inhabitants and the destination of more than 100,000 daily commuters. Since the 1990s, the city has experienced a thorough deep transition from a socialist industrial production centre to a more diversified urban economy. The transitional period was marked not only by intensive de-industrialisation but also by the massive growth of retail and other consumer services, which were strongly marginalised during the socialist central-command economy. The socialist retail 'shortage' was compensated for after 1989, as the total retail floor space increased more than five-fold between 1989 and 2013 (Fig. 1) (Mulíček and Osman, 2013).

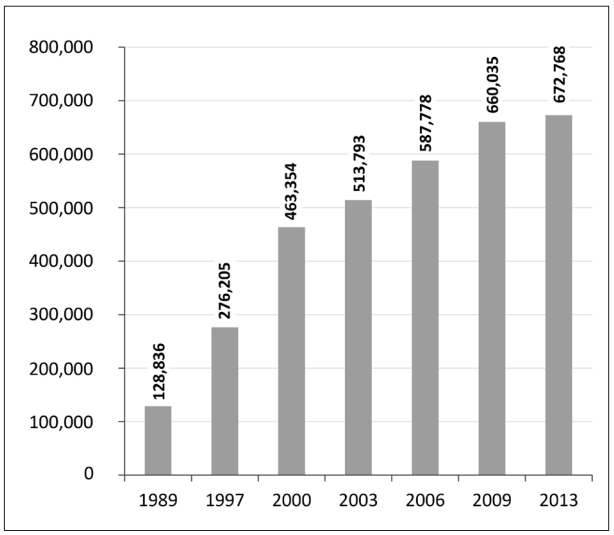

Fig. 1: The growth of total retail floor space in Brno 1989–2013 (m^2). Source: Mulíček and Osman, 2013

The decision to use data on the location of retail units to describe Brno's time-space was similarly pragmatic. In the case of the availability of similar data, it would also be possible to use, for example, data on the location and opening times of services, restaurants, withdrawals from ATMs, etc. The choice of the empirical database was motivated by its very existence, its public availability and the spatiotemporal character of the data. The city of Brno keeps the line of comprehensive municipal retail surveys taken quasi-regularly in 1997, 2000, 2003, 2006, 2009 and 2013. The surveys focus only on 'bricks-and-mortar' shops: mobile vendors' stands, e-shops, as well as pubs, bars and restaurants are not covered. We employ here the latest retail database from the year 2013 (Mulíček and Osman, 2013), including information on 3,587 shops in the city (Fig. 2). Each store is described not only by its retail floor space, but also by location, assortment and opening hours on weekdays, and (if open) on Saturday and Sunday. The dataset represents a useful analytical base for the identification and description of daily or weekly retail rhythms: it enables the researcher to link specific urban retail places with specific times in order to operationalise the chronotope concept.

The data analysis employed here follows the temporal regionalisation of the time-space of the city. In other words, the analysis inspired by Bakhtin's chronotope concept,

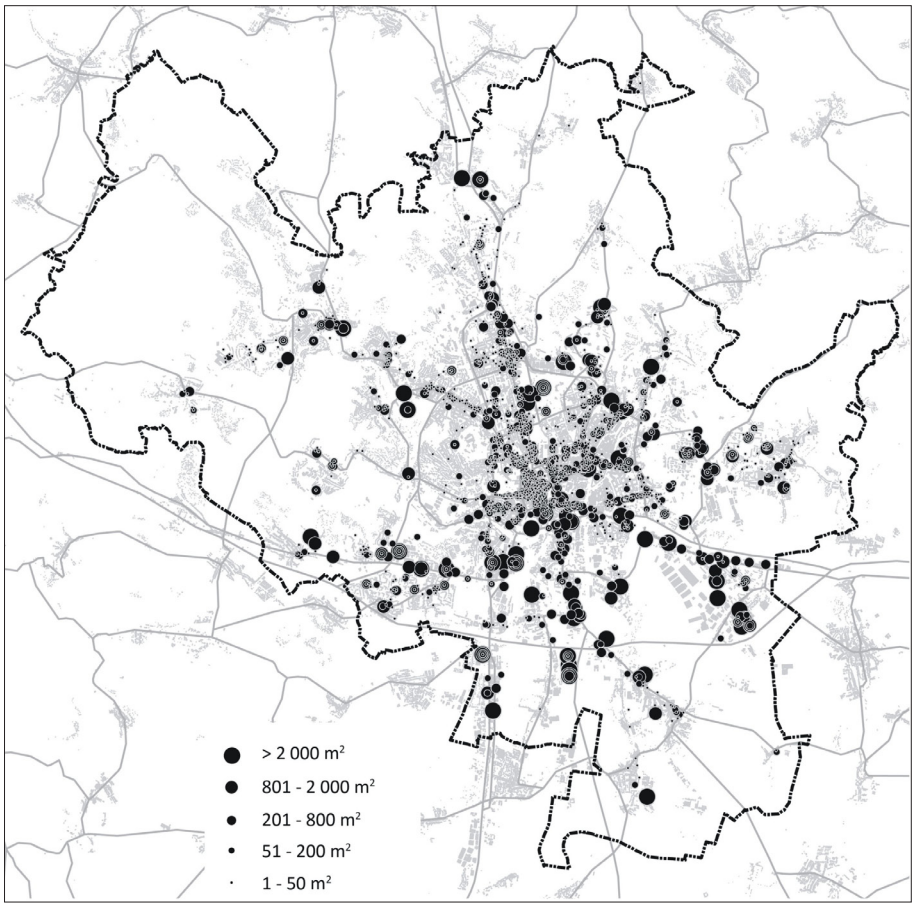

Fig. 2: The spatial structure of retail in Brno 2013 (store sales area, m^2)
Source: Mulíček and Osman, 2013

focuses on identifying changes in the behaviour of retail units over time. The first step in this chronotopic analysis was to investigate the basic distribution of the proportion of shops open during the working day (Fig. 3). Four distinct phases of a business day, based on the number of open retail units, were identified using this histogram: the first of these was the phase between 23 and 05 hours, which we call the night chronotope; the second is the phase between 5 a.m. and 9 a.m., labelled the morning chronotope; the third between 9 a.m. and 6 p.m. is called the day chronotope; and the fourth between 18 and 23 hours, is called the evening chronotope. In the second step of the analysis, four specific space time-spaces of Brno were identified (see Fig. 3 below). In the third step, the spatial dimension was added to each of the chronotopes defined – the shops opened in the relevant period were visualised on the map according to their specific location (Figs. 4–7 below). In the fourth and last step of the analysis, these chronotopes were individually described in the order in which they follow one another during the course of the day (Fig. 8 below).

4. Results and discussion

4.1 Weekday retail rhythm

The opening and closing of shops within the course of the day represent rhythms that aggregate various synchronisation strategies, reflecting not only the size, assortment profile and spatial location of particular shops but also other contextual temporalities produced by the numerous types of pacemakers. Figure 3 shows the weekday retail rhythm in Brno visualising the changing shares of open shops during the 24 hours of the day. An examination of the graph indicates the concentration of opening hours to the part of the day between 8–9 a.m. and 6–7 p.m. The beginning of the average opening hours on weekdays is at 8:39 and the end at 18:22. Stores operated during the late evening, night and early morning hours represent only a small segment of retail premises in the city. Leaving aside the clear and rather expected difference between light and dark hours, we can trace out other subtle temporal borders which separate specific and transient retail configurations. For example, the retail map of the early morning shows a distinct spatial and assortment pattern of shops compared to the retail structure in the middle or end of the day. The weekday urban retailing can be thus conceptualised as a sequence of short-term transitive configurations of retail, interwoven with other urban rhythms.

4.2 Night chronotope

A number of research reports concern night city economies: many of them are spatially targeted to specific parts of the city – the city centres or inner city zones. Night-time rhythms have been analysed in Groningen, Utrecht and Rotterdam (Schwanen, van Aalst, Brands and Timan, 2012), as well as the evening and night-time city centre activities in Swansea (Bromley, Tallon and Thomas, 2003) or the nocturnal life of Paris (Mallet, 2014). These studies mostly confirm the important role of retailing in the spatio-temporality of the urban night (together with night clubs, restaurants, pubs and bars, stops of night public transport, etc.). At the same time they also point out that night economies often clash with various forms of institutionalised time regulations, "police hours" or curfews.

As mentioned above, night-time businesses represent only a small part of the total retailing activity in Brno, in spite of the fact that there are no legal directives regulating night opening hours in the Czech Republic. From our data base, there are 14 stores operating non-stop, 3 stores open until midnight and 16 shops closing at 11 p.m. Two Tesco hypermarkets are the biggest shops with continuous opening hours in the city, with retail floor space more than about 10,000 square metres each, while the rest of the non-stop retailing involves very small stores not exceeding 80 square meters (one pharmacy, 5 groceries and 6 tobacconists, usually with extended offer of alcoholic beverages). There is, however, no universally valid narrative standing behind the temporal strategies of those non-stops.

When analysing the case of pharmacy, we can see the combination of spatial and institutional factors. The shop is the only pharmacy in the city where one can buy medicaments in the period of the night-time from 10 p.m. until 7 a.m. This night service is partially contracted by the city authorities as the pharmacy is situated in close proximity to all-night medical and dentist emergency rooms. The pharmacy represents, then, part of the semi-institutionalised and localised system of night health care. The specific spatiality gives birth to a specific temporality of the store in shaping its privileged and central position in the chronotope of night medical help. This

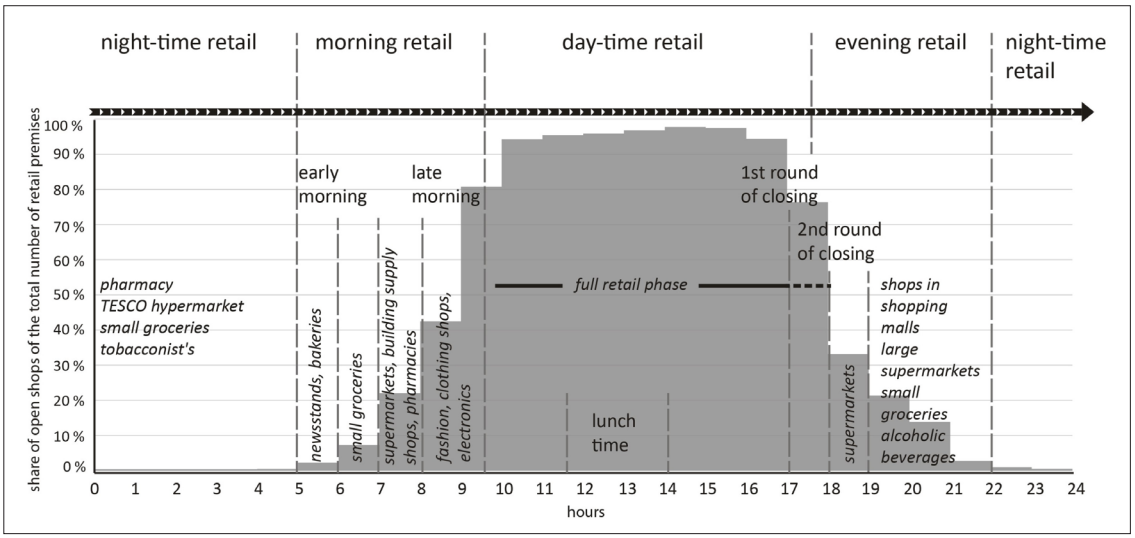

Fig. 3: The share of open shops of the total number of retail premises and the daily rhythm of retail configurations: Brno 2013, weekday. Source: Muličěk and Osman, 2013; authors' analysis

position is, however, rather transient – the store becomes just an ordinary item in the other 125 pharmacies in the city during the daytime.

The temporality of small non-stop groceries and tobacconists stems from adaptation to the local context. They mostly fall within the category of convenience stores targetting a specific group of night customers – usually people on their way home (from pubs and bars, from late night shifts, from the central train or bus station) or people working in the streets of the night city (taxi drivers, policemen and emergency ambulance staff, etc.). Some of these stores are located in central locations, some of them not, but we have to be aware that the term 'central location', borrowed from the geography of the daytime city, obtains different meanings on the nocturnal map. The night distorts the traditional city structure and 'centrality' gravitates towards a few animated and living places. All small non-stop stores under examination form the central locations sui generis, regardless their absolute geographical position. They are the night micro-clusters of people and activities, the foci of night spatial order, which fades away as the morning brings new focal points and centralities.

The Tesco non-stop hypermarkets can be examined as a third distinct typological case of night retail. Their time-policy in Brno reflects much more the Tesco global/national corporate strategy, not simply local factors. Tesco, which entered the Czech Republic in 1996, adopted the extra-long opening hours in order to strengthen its position within the highly competitive national retail market. Starting in 2005, Tesco introduced non-stop operations within the network of its hypermarkets in large and middle-sized Czech cities. This policy of 24/7 retailing was not followed by other important chain retailers in the Czech Republic, and Tesco employed it as a powerful marketing tool to demonstrate its responsiveness to the (temporal) needs of customers. The high economic costs of night retailing forced Tesco to revise the policy at the end of 2015. Only six hypermarkets (mainly in Prague and Brno) continue with the 24/7 service, while the other 19 stores cut their opening hours in accordance with the effective demand of customers. Tesco non-stop stores in Brno can thus be perceived as indicators of the day-and-night living urban economy which cannot be found in smaller Czech cities and towns. The "colonisation of the night" (see Melbin, 1978) by Tesco is not, however, just a pragmatic economic strategy of retail synchronisation with the schedules of time-poor people: it embraces an important neoliberal symbolism, presenting Tesco as the modern retailer which breaks the spatiotemporal borders of traditional retail niches.

The retail times and places contribute significantly to the building of the night-time Brno chronotope. Non-stop retailing privileges a limited number of urban places, producing a specific night geography of the city. The few non-stop shops represent hotspots, regardless of their size or location, just because they are few in number. The different groups of customers are spatially joined, as the temporality meaningfully defines spatiality within the spatiotemporal order of the night.

4.3 Morning chronotope

The frontier between night and day in the city is never clear, more likely it takes the form of a kind of buffer zone. Looking at Figure 3, we can make the wide night-day retail divide approximately between 5:00 and 9:30 a.m. While a little over 2% of shops open before six o'clock, the share of open stores growths steeply in the next three and half hours and after 9.30 a.m. more than 80% of shops in the city are open.

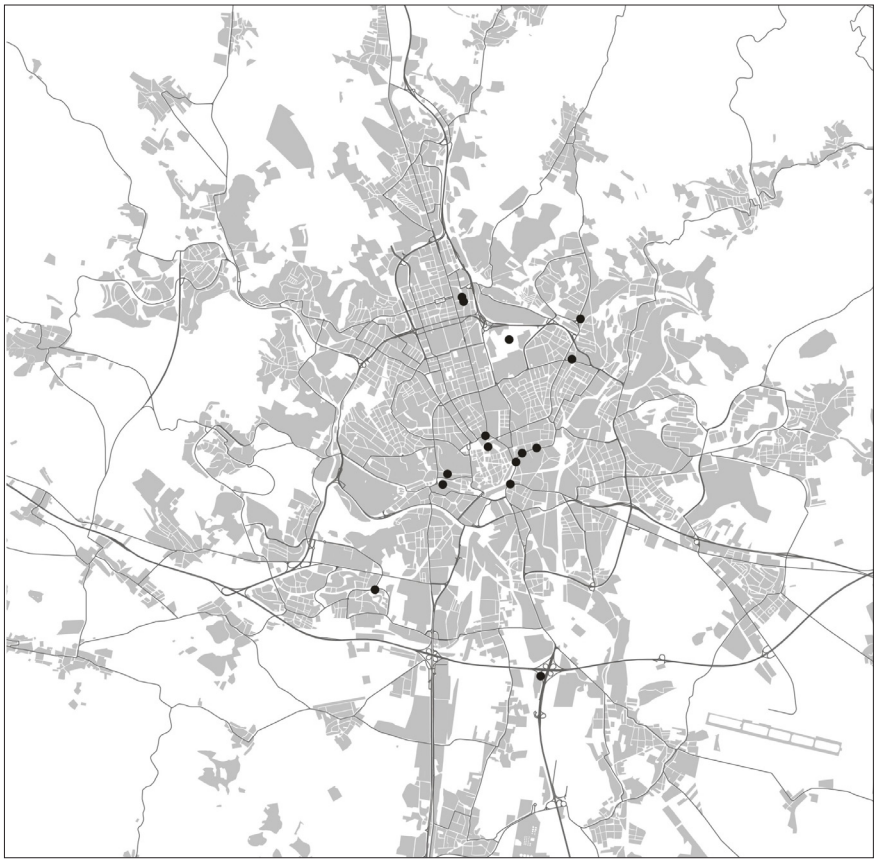

Fig. 4: Night chronotope of Brno in 2013 (1:00–1:59)
Source: authors' analysis

This everyday rhythm of the morning retail awakening has its internal and quite rigid spatiotemporal structure. The times before 6 a.m. are occupied by a group of shops rather homogeneous in term of assortment and size structure – newsstands and tobacconists represent about two-thirds of the 65 shops open before 6 a.m., while the remaining one-third involves only small groceries and bakeries. All these early morning stores show a common feature which lies in their definitional quality, a daily repeated tie to the coming of a new day. Their principal goods, like newspapers, fresh bread and rolls, symbolise circadian rhythm and the stores are the places where this rhythm is materialised and amplified. The early morning shops are to be found mainly at the public transit hubs, fusing with the rhythms of early work-commuters, most typically industrial workers, medical staff and any other employees starting their work ahead of commonly-accepted hours.

Another 180 stores open between 6 and 7 a.m. This round of openings is clearly dominated by grocery stores, still small in size. The assortment structure, however, becomes more diversified. There is an increasing number of stores which provide materials and equipment to self-employed tradesmen or small businesses (plumbers, electricians, bricklayers, etc.). We can find also several green-groceries opening. It has to be pointed out that the early morning retail is not corporate in its nature. Most of the grocery shops working before 7 a.m. are not part of retail chains: their temporalities refer more to autonomous local strategies than to rather uniform top-down time policies.

In the period between 7 and 8 a.m. here is a further structural diversity of retailing, both in terms of assortment and size. The map of grocery stores demonstrates higher densities: not all opening premises fall under the small-sized shops category, as seven o'clock is the usual starting time also for middle-sized and large grocery shops and supermarkets. Many of the latter belong to the wider retail chains, applying nation-wide opening times strategies. The changes in the structure of to-date opened shops go hand-in-hand with the increasing number of potential customers. The people on their way to school or to work are no more the sporadic representatives of marginal temporalities, they represent the accepted temporal norm. At this time of the day, the 'normal' working day starts and retail temporality fuses closer to the mainstream rhythm of the city. For example, there are many pharmacies opening, as well as building supplies stores, drugstores and car components shops. These stores follow a similar logic in that they are tightly linked to the pragmatic daily activities of their customers or interlinked businesses. A good example is the opening hours of pharmacies, which closely resonate with the typical morning-oriented working time of most of healthcare facilities – medical centres and clinics, as well as small doctor's offices. Late morning retail seems to be much more a pragmatic reflection of the other urban rhythms than an active pacemaker, which to some degree is contrasted to the role of night or early morning retailing.

After 8 a.m. the number of open shops rises steeply and by about 9.30 a.m. approximately 80% of all retail premises in the city are open. The spatial pattern of city retail is nearly completed and the assortment range reaches its maximal width. This is the stage when the 'leisure shopping' assortment (fashion, clothing stores, electronics, etc.) appears for the first time, and moves the relation between retail place and retail time further. While the unique temporality of night and early morning shops has a definitional meaning for them, the shops opened later on in the morning lose inherently their temporal exclusivity and their spatiality obtains the overriding significance.

Fig. 5: Morning chronotope of Brno in 2013 (7:00–7:59)
Source: authors' analysis

IKEA, the home furnishings retail chain, moved the opening hour for all its Czech stores from 10 to 9 a.m. in the autumn of 2013. The motive of the change was to place better the store into its temporal, as well as spatial context:

> "…new opening hours better correspond with the needs of our customers, we can satisfy their expectations. Especially families with children like morning shopping. Long-term surveys show that people launch their shopping trips in the morning and they do not use the last hour of our shopping hours as much. Most of the shopping centres in the vicinity open also at 9 o'clock so we believe that the change will be accepted positively..." (IKEA, 2013).

This example from the IKEA store shows the great volatility of morning synchronisation factors and, at the same time, their vitality in economic and marketing terms.

4.4 Day chronotope

The phase in which almost all shops are open starts after 10 a.m. in Brno. More than 90% of the total number of stores are working and this full retail period lasts till 5 p.m. The data describing these particular seven hours of city retailing represent a referential configuration without any distinct temporal, spatial or structural markers – a kind of normative mirror level in which more specific chronotopic patterns of other parts of the day can be reflected. The particular time coordinates of opening hours cannot be linked to specific shops in specific places in this stage. The binary information of 'open/closed' loses some of its interpretive power as the chronotope of the (10–17) city stems from the totality of city shops, nearly all of them open and working.

The period from 10 to 17 o'clock appears to be quite monolithic when seen through the optic of retail activity. A question arises as to what extent this segment of retail rhythmicity entrains with other rhythms of daily urban life. There are several pace-making moments within the 10-to-17 timeframe, among which the 'lunch-break' is prominent as it belongs to the most common temporal fixes structuring that respective part of the working day in the city. The lunchtime usually means a pause in work, the interruption of flowing working time. Examining the graph in Figure 3, however, there is no visible imprint of lunchtime in the retail opening hours dataset. We can find out that only about 10% of all shops stay closed for a more or less short lunchtime break. These are mainly very small retail premises (up to 50 m^2 retail floor) spread across all assortment categories: the pause usually takes place between 11:30 and 14:00; its average duration is 1 hour; the pause from 12 till 13 is the most typical case. The prevailing absence of a lunch-time break indicates that retail schedules are not a mere mechanical reflection of broadly synchronised individual temporal strategies. They are, instead, the outcomes of an interplay between customer needs, the operative economy of the shop and its synchronisation strategies.

4.5 Evening chronotope

The 'full retail' part of the working day ends at 5 p.m., when the first massive round of shop closures starts and the share of open shops falls to 76%. It seems that the "rule": 'first open, first closed' cannot be applied in this case, as the majority of shops closing at 17 o'clock show an average or even late opening times. As this set of shops includes mainly small- or middle- sized retail businesses in non-central localities, we can hypothesize that their opening hours follow closely the typical 8 or 9-hour working shift

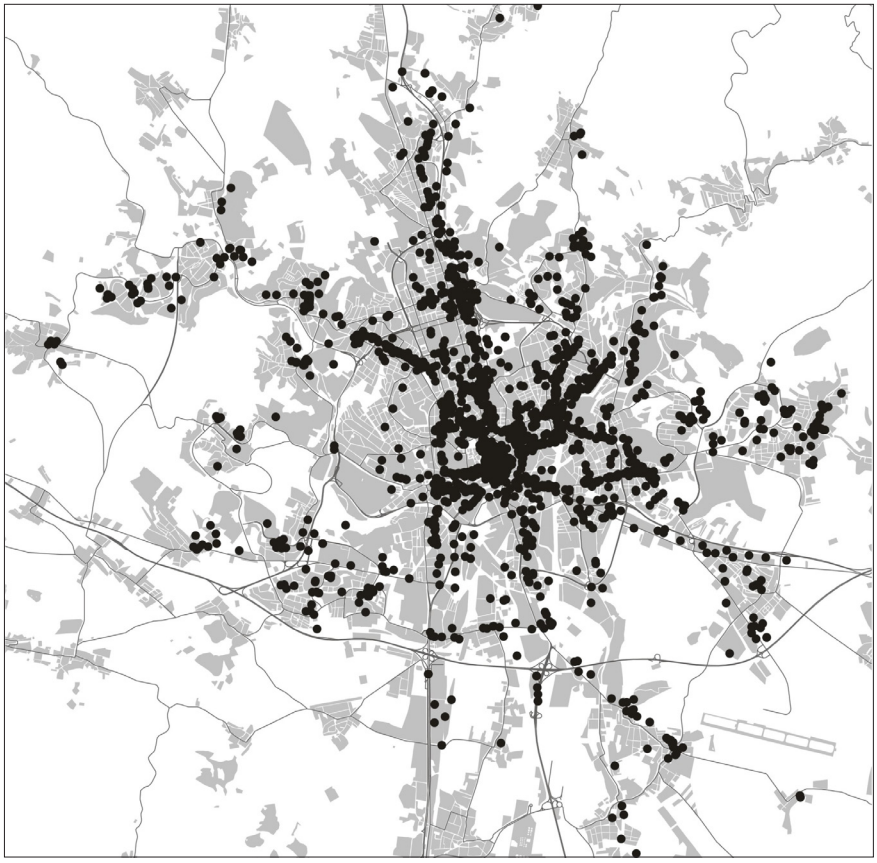

Fig. 6: Day chronotope of Brno in 2013 (12:00–12:59)
Source: authors' analysis

of shop assistants or shopkeepers. If so, the institutional pacemaker of working hours is directly transferred this way into urban retail temporalities.

The second round of closures takes place at 6 p.m., after which only one third of stores in the city stay open. This is actually a sharp decrease, perhaps remotely resembling retailing temporality under socialism – as in those times, 18 o'clock was the typical closing hour imposed by the regulated central-command economy. With no research data, we can only speculate on possible inertias of retail temporalities being carried on to the unregulated post-socialist urban context of the contemporary Czech city. In any case, this evening time denotes a definitive break with the period of ubiquitous retail. The chronotopic retail map starts to be more fragmented and the question of "Where to shop?" becomes more closely linked to "What time is it?". As for the size and assortment structure of the open shops, they reflect the logic of flows of people in the city. For many, this is the time to make their daily shopping on their way home. Such a spatiotemporal constellation of customers favours larger supermarkets and hypermarkets located nearby the residential areas and transport lines, while the small specialised shops are likely to close. The average size of the open shops thus increases when compared with the time before 6 p.m., and the grocery assortment becomes relatively over-represented.

In the period from 7 to 10 p.m., the process of transition to the night-retail chronotope comes to its final stage. The number of working shops decreases gradually and the size structure of the retail units becomes more polarised as the stratum of middle-sized shops fades away. The large shops are represented by an assortment mix of businesses run under the umbrella of large shopping malls, which stay as a kind of temporal island amidst a pervading retail desert. Furthermore, there are also retail chain supermarkets carrying on the role of late evening retail points operating at the scale of residential neighbourhoods. They usually close between 8 and 10 p.m. The late evening opens the space also to small businesses with specific temporal strategies aimed at minor groups of late customers. Stores selling alcoholic beverages and cigarettes, as well as small groceries offering a narrow range of foodstuffs, are the typical representatives in bringing the city retail back into its nocturnal phase. At about 11 p.m., the working-day rhythm of retailing draws to a close and the night-time chronotope comes into its own right.

5. Conclusions

The authors do not see the city as a static product of past processes. Instead, the city is conceptualised here as a dynamic continuing process, as an entity being always in flux. The processional dynamism of the city environment, as presented here, is not linear in its nature. It is conceptualised as an ensemble of rhythmically repeating stages, with each stage enclosing a specific configuration of city functioning. The delimitation of these stages represents the main result of the underlying analytical work. The chronotopic approach introduces a temporal categorisation, dividing the 24-hour day into differently timed sections. Time can be partitioned into the years rhythmised by the cycle of particular seasons, into the weeks timed by the alternation of working and non-working days, or into the days which rhythm refers to in the schedule of work or school. Time can be divided into even more subtle units, however, but still internally cohesive fractions within the temporal scale of the 24-hour day.

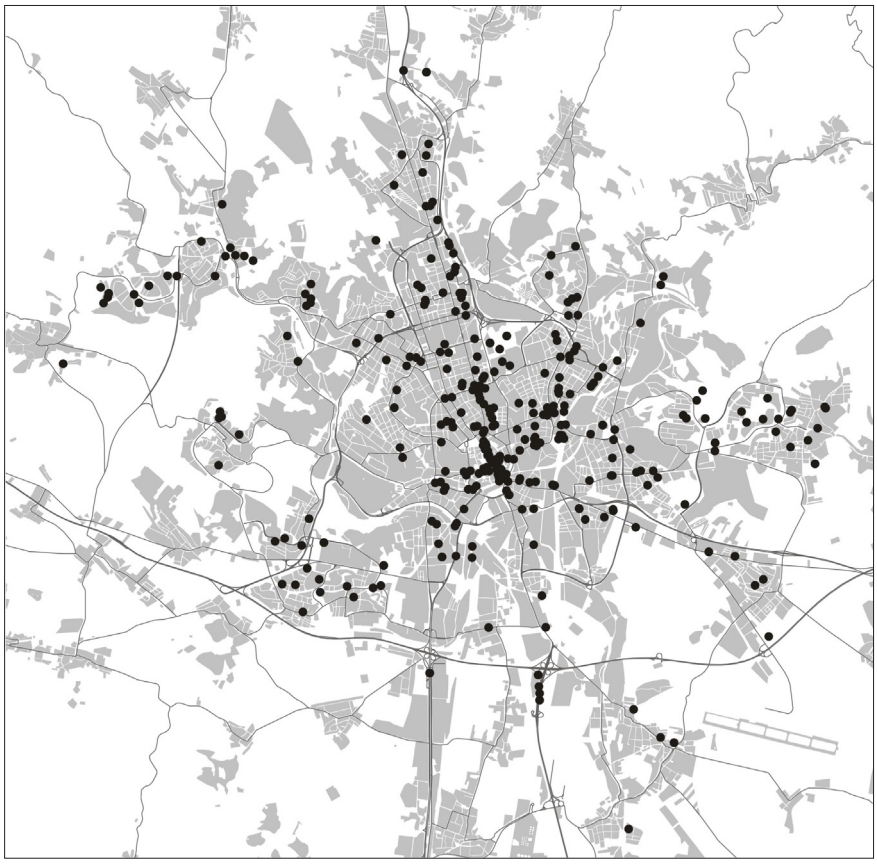

Fig. 7: Evening chronotope of Brno in 2013 (19:00–19:59)
Source: authors' analysis

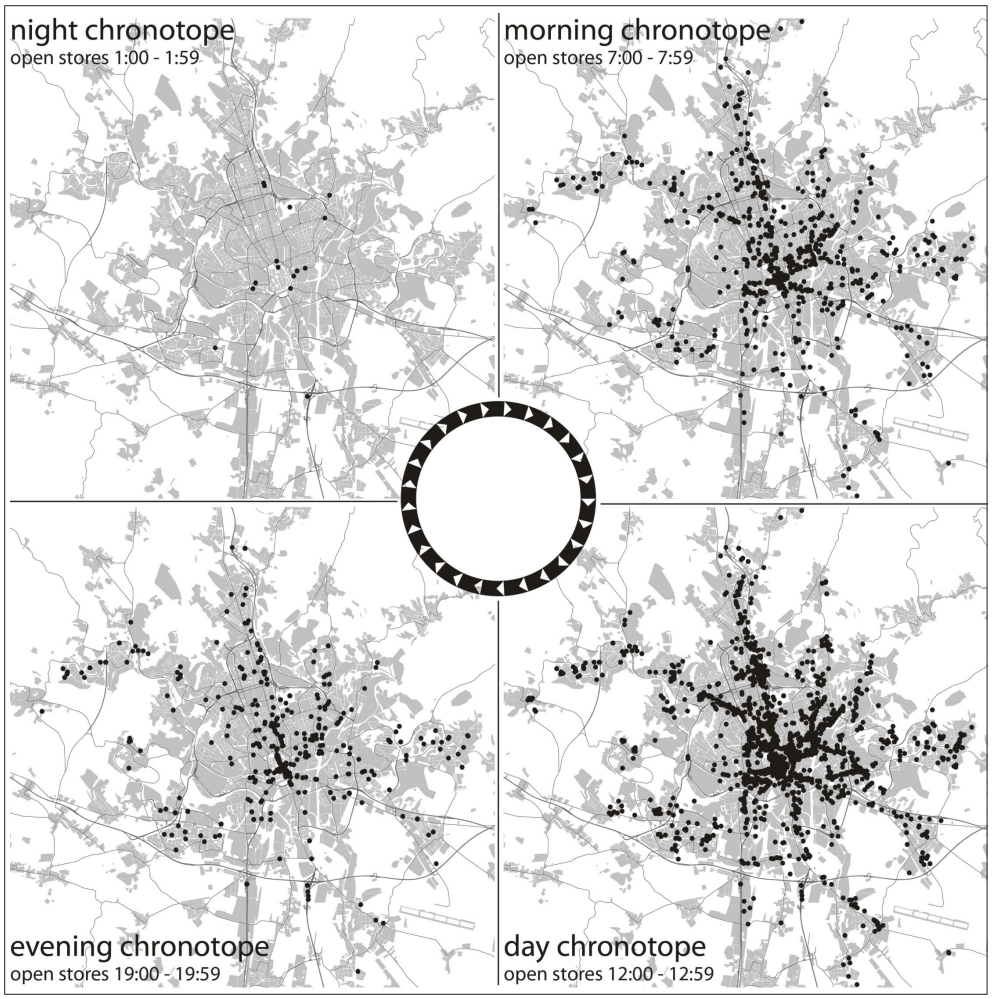

Fig. 8: Time-space description of Brno in 2013 as defined by the four chronotopes
Source: authors' analysis

This paper presents one example of an alternative division of the day: summarised as Figure 8. Based on the temporal strategies of retailers, four distinct time-space configurations have been delimited – chronotopes of the night, morning, day and evening. These four chronotopes are not linked to the astronomical structuring of the 24-hour day – rather, they are social constructs. While the beginnings and the ends of the astronomical day change over the course of the year, the temporal co-ordinates of retail opening hours remain relatively stable. The retail stores open each morning of the weekday typically between 8 and 9 a.m. and close between 6 and 7 p.m., no matter whether there is daylight or evening dark. There is a certain clash between particular conceptions of time – the rhythmically repeating biological need for sleep (human biological time) interferes with linearly flowing time, which is so essential for the organisation of modern urban society (the machine time of industry and bureaucracy). Daylight or darkness are not the meaningful factors shaping the 24-hour day in the present city: it is structured under different, socially-based rhythms, with the rhythms of retail as the prominent ones. There are no astronomical or biological markers, like dawn or the songbirds separating the chronotope of the morning from the chronotope of the night. There are instead significant social markers represented by the opening times of various urban services.

Analogically, the start of the spring in the city does not coincide with snow-melting and the germination of plants. It is linked to the start of the new seasonal offers of the retail chains (Jauhiainen and Mönkkönen, 2005; Jauhiainen, 2007). The concept of the city as a cyclical process repeated in daily rhythms is emphasised here. The city-as-process is described by a sequence of relatively stable spatial-temporal stages stemming from the specific temporal strategies of retail stores. More generally, the paper offers an example of the ways in which the specific daily rhythmicity of the city gets structured.

On a more general theoretical level, this paper can be seen as a contribution to a critical re-conceptualisation of urban time. The classical studies often separated social and urban time as they understand urban time usually as linear, divided into formalised basic units such as a 24-hour working day (Melucci, 1996; Hoffmann and Lapeyre, 1995; Hoffmann, 1997; Bonfiglioli, 1997; Mareggi, 2002; Stavrides, 2012, 2013; Pasqui, 2016). In this contribution, however, we have a different conceptualisation of urban time – cyclical urban time, which consists of rhythmically repeating periods that are shorter than a day. In the case of Brno, there are four time-specific periods, four chronotopes that emerged not from astronomically- or institutionally-constituted categories of night, morning, day or evening, but from particular the spatiotemporal strategies of urban retailers.

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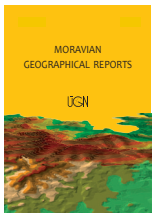

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DE GRUYTER OPEN

Characterising the flows of Slovenian tourists within the former Yugoslavia with respect to post-communist 'nostalgic context'

Metod ŠULIGOJ [a *]

Abstract

Slovenia represents a key source in the tourist market for the new post-Yugoslavian states, but little is known about Slovenians' tourism practices, especially in relation to the post-communist dimension. The term "Yugonostalgia" came into existence in the 1990s in the post-Yugoslav area, and it illustrates the attitudes of people looking for a life that would be better than their present one. The term is also connected to tourism, although it has been largely neglected in the tourism literature. In this study, a total of 384 appropriately completed questionnaires were recorded and prepared for empirical analyses. Some 83.0% of respondents repeatedly return to a former Yugoslav destination they had visited in the past. Hierarchical and non-hierarchical clustering methods were used to identify clusters. Subsequently, cross-tabulations were employed to profile each cluster based on demographic characteristics, and chi-square tests were performed to validate the clusters and their mutual differences. Significant differences between groups with respect to survey variables were verified by one-way analysis of variance models. Three significantly different clusters were identified: (i) friends of nature; (ii) immigrants and their descendants (from the post-Yugoslav states); and (iii) moderate lovers of nature and culture. None of identified clusters are characterised by Yugonostalgia: group members behave in similar ways to all contemporary tourists with varying individual interests, which is an additional interesting finding.

Keywords: *Yugonostalgia, post-communism, thematic tourism, former Yugoslavia, Slovenia*

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1. Introduction

The tourism industry of the 21st century is increasingly establishing itself as an "experience industry" in which tourists are looking for emotional stimuli; they want to buy feelings (personal experiences) instead of products – the immaterial qualities, seeking ambiance, aesthetics and atmosphere, looking for an experience full of varying intimacies, intensities and complexities (Opaschowski, 2001). Tourism experiences are multi-phasic and evolve over time (Stewart, 1998). The tourism experience, consisting of anticipation, consumption and memory phases, is interpreted "within the broader, narrative context of the consumer's life" (Arnould and Price, 1993).

Linking tourism with memory is not a new approach (see Tung and Ritchie, 2011), but it is important because there is a "global epidemic of nostalgia, an affective yearning for a community with a collective memory, a longing for continuity in a fragmented world" (Boym, 2007). Nostalgia can influence a person's behavioural intentions (Chen, Yeh and Huan, 2014), when an individual's desire for authentic (cultural) experiences to escape their everyday environment is triggered (Osbaldiston, 2012). In this sense, the nostalgia-driven traveller is pushed by his/her innate motives to travel and pulled by several destination-specific attributes (Leong, Yeh, Hsiao and Huan, 2015; Ryan, Shuo and Huan, 2010; Yoon and Uysal, 2005).

Although Slovenian tourists represent a key source market for the new post-Yugoslav states (The Socialist Federal Republic of Yugoslavia or SFRY – see Fig. 1) little is known about their travel-related behaviours, especially in relation to the nostalgic dimension. Only the research by Šegota and Jančič (2012, 2013), which is focused on the so-called Yugonostalgia as a motivator for visiting Croatia by Slovenians, and the research by Velikonja and

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Majsova (2014) on the tourist aspect of the creation of this ambiguous, imaginary SFRY, have a tourist connotation, while many others do not (e.g. Bancroft, 2009; Boym, 2007; Kuzmanić, 2008; Velikonja, 2008). Researching nostalgia or Yugonostalgia is especially important because much can be learned about the present – people remember pleasant times when they belonged to an entirely different country (Bancroft, 2009, pp. 5–6; Palmberger, 2008); as well, they remember and recognise unrealised opportunities that can affect the present (Bošković, 2013, p. 77).

Consequently, the aim of this paper is not 'historical revisionism' nor 'regime promotion', but to explore attitudes toward the recent past in Slovenia (as one of the successor states of the socialist federation) and the current travel-related views of its residents. Their mental, virtual and real journeys in the area of the former SFRY can be symbolically described with the song "From the Vardar River to Mount Triglav", officially called "Yugoslavia" (*Jugoslavijo* in Serbian), which describes many dimensions of the former SFRY, such as natural beauties, liberation struggles and the labour of the SFRY's working people, and was alive in the time of the last economic crisis. This song by Serbian Milutin Popović Zahar, author of many Yugoslav "Greatest Musical Hits", was performed by the Croatian female vocal ensemble Ladarice, which became famous immediately after Tito's death (1980). It could be argued that this song reflects a journey from one area to another of (the former) SFRY, and thus describes Slovenian tourists. The question here is, following the example of Rekść (2015, p. 110), who in the former USSR case labelled nostalgic people as *Homo Sovieticus*, in the former SFRY area – "can we label Yugonostalgic people as *Homo Iugoslovanicus*?". This question is also relevant in terms of tourism geography – exploring motives and the needs of travellers are important for some tourism geographers, such as Jeršič, 1985, and Rančić, Blešić, Đorđević and Bole, 2016. Geographers have also focused on specific interest tourism, e.g. religious tourism (Collins-Kreiner, 2010), wellness tourism (Rančić, Blešić, Đorđević and Bole, 2016), dark tourism (Mansfeld and Korman, 2015) and similar specialties.

An affective memory about a system and nostalgia about it usually emerge as a consequence of every transformation appearing to leave some social group(s) outside the change (Boym, 2001, p. XVI). In fact, this has happened in the former SFRY republics, where members of the former working class, which was the key pillar of society under socialism, now often feel humiliated. At the macro level, however, Slovenia today delivers much better economic results than before 1991 and better than the other countries that emerged from the former SFRY: see Biloslavo and Kljajić-Dervić (2016); Šuligoj and Štrukelj (2017). In addition, this social and economic situation triggers many paradoxical travel habits of Slovenians, the nation which was the first to leave the SFRY and the first to be attacked by the Yugoslav Army in June 1991. Slovenians have some distinctive tourist patterns:

i. enormous levels of summer vacationing on the Croatian coast;

ii. massive New Year's Eve celebrations in Belgrade (Serbia);

iii. among the main visitors to Kumrovec (Tito's birthplace in Croatia) or Jajce (the "birthplace" of post-World War II Yugoslavia in Bosnia: see also Kurtović (2011));

iv. travel for medical reasons or for cheap shopping [in the Republic of Srpska an entity of Bosnia and Herzegovina)]; and

v. 'not to mention' countless business trips as part of the so-called MICE tourism (Meetings, Incentives, Conferences and Exhibitions/Events).

Are Slovenian tourists Yugonostalgic when they decide to travel to the former SFRY destinations, which are today (simultaneously) marked with post-communist/post-socialist transitions, post-conflict recovery and (presently) highly complex inter-ethnic relations and incompatibility? What kinds of tourism products are they looking for? These are all questions that other contemporary studies do not include, although they are important for the academic world (e.g. for sociologists, economists, anthropologists, geographers),

Fig. 1: Map of former Yugoslavia (SFRY)
Source: Novak (1968)

as much as for the tourism industry (e.g. tour operators/agencies, tour guides, experts in tourism marketing, developers of tourism strategies, etc.) – in the wider "post-socialist region".

2. Nostalgia and Yugonostalgia

The pseudo-Greek word *nostalgia* was coined by the Swiss student Johannes Hofer in his medical dissertation in 1688, which clearly demonstrates its medical, not social origins (Bancroft, 2009, p. 10; Boym, 2007, p. 7; Holak, Havlena and Matveev, 2005, p. 195; Palmberger, 2008, p. 358). There are many definitions of the term: "commonly understood as a hazy perception of the past that glorifies what was and is no more, while downplaying all the shortcomings of the past" (Palmberger, 2008, p. 358; Rekść, 2015, p. 106; Smeekes, 2015). The beginnings of the development of the concept in a broader sense is explained in Starobinski (2009) and Boym (2001)). Hence, nostalgia with selective and emotional perception/interpretation of the past has been associated with a valid opposition to real history – the so-called 'clear evidence' (Palmberger, 2008, p. 358). Stewart (1993) characterises it as a social disease, which establishes an emotionally charged relationship between an individual and the past; it reflects a love for the (idealised version of an unattainable) past, as well as stunting cultural imaginations by discounting and excluding real viable options; as well as a vehicle for xenophobia, anger, fear, hatred and anxiety (Volčič, 2007, p. 25), or other negative factors named by Rekść (2015, p. 106).

Nostalgia transforms history into entertainment, spectacle, and cultural fantasy (Jameson, 1991, p. 170). In contemporary Western capitalism, it is a part of the problem of a sense of alienation, a lack of historical consciousness, an inauthenticity (Jameson, 1997, p. 25), as well as a reaction to a fast moving and changing environment (Lowenthal, 1999; Palmberger, 2008). It is also a response to diverse personal needs, political desires (Tannock, 1995) and to disenchantment (Pickering and Keightley, 2006, p. 936). In this context, nostalgia is a side effect of contemporary progress, in which people with nostalgic feelings are stigmatised and labelled as an opposition to changes for a better life (Bonnett, 2010, p. 5). Consequently, individuals looking for spiritual fulfilment and having problems attaining it, are forced to escapism, the simple form of which is nostalgia (Umphlett, 2006, pp. 129–130).

Several complex postmodern aspects of nostalgia, linked to different kinds of experiences, led authors such as Havlena and Holak (1996), or Ekman and Linde (2005), to propose the following classification of nostalgic experiences:

1. personal nostalgia (direct individual experience);
2. interpersonal nostalgia (indirect individual experience);
3. cultural nostalgia (direct collective experience); and
4. virtual nostalgia (indirect collective experience).

The last two can also be understood in the context of collective/group nostalgia presented by Velikonja (2008, p. 26: see also Wildschut, Bruder, Robertson, van Tilburg and Sedikides, 2014) and Smeekes (2015). Velikonja (2008) divides nostalgia further into:

1. feeling/idea nostalgia, which is present in individuals and in their collective and individual memories of the past; and
2. materialised nostalgia, which is present through material objects, e.g. monuments, buildings and souvenirs.

The fall of the Berlin Wall marked the symbolic end of the communist regimes in the countries of Central and Eastern Europe. The consequences were mainly peaceful and democratic, but the disintegration of the SFRY is a bloody and cruel exception. The usual social transitions through democratisation, privatisation, marketisation and Europeanisation were marked by war in the case of the SFRY (Gilbert, 2006, p. 17). All of these processes impact attitudes towards recent history (and nostalgia) in the former communist states: see Todorova and Gille (2012), or Velikonja (2008) for further details. In this context, Ekman and Linde (2005) distinguished among four analytical dimensions of "communist nostalgia":

1. a political-ideological dimension;
2. socio-economic dimension;
3. personal socioeconomic dimension; and
4. personal biography dimension.

These authors claim that "communist nostalgia" as a multidimensional phenomenon, however, is more closely related to dissatisfaction with the present situation (in terms of performance indicators) in post-communist states than to genuine non-democratic values (Petrović, 2013, p. 107). Note that this is completely in line with the previous statements about individuals in postmodern society and explanations of the concept of nostalgia.

A number of authors have studied nostalgia in the former communist countries in Europe (see Tab. 1), where memory/longing for the old regime is present in the entire area but not everywhere to the same degree. The largest number of people favourable to the past epoch is found in Bulgaria, Romania and the former USSR, except the Baltic states (Ekman and Linde, 2005; Saarts, 2016), and in Hungary (Ekman and Linde, 2005; Rekść, 2015, p. 107). Nonetheless, in accordance with trends of the postmodern

Subject (former communist state)	Author(s)
Former Yugoslavia (SFRY)	Bancroft (2009); Bošković (2013); Hofman (2012); Lindstrom (2005); Palmberger (2008); Pauker (2006); Šegota and Jančič (2012; 2013); Simmons (2009); Šram (2001); Velikonja (2008); Velikonja and Majsova (2014); Volčič (2007)
Union of Soviet Socialist Republics (USSR)	Heady and Gambold Miller (2006); Holak et al. (2007); Holak et al. (2005); Mendelson and Gerber (2005); Nikolayenko (2008); Oushakine (2007).
German Democratic Republic (GDR)	Bach (2002); Berdahl (1999); Boyer (2006)
People's Republic of Bulgaria	Creed (2006); Ivanov (2009)

Tab. 1: Research on nostalgia in selected post-communist countries
Source: author's elaboration

era, this kind of nostalgia is not in decline, which further justifies more research to close the gap in this field (Palmberger, 2008, p. 357). It is necessary to demystify life in Eastern Europe, which is usually seen as an exotic planet for West Europeans, as in the case of the Germany described by Boyer (2006).

Bošković (2013, p. 54) gave different names and shapes to nostalgia in post-communist societies, where nostalgia for socialism in the former SFRY is called Yugonostalgia. The phenomenon is coloured by several factors: on-going disputes among Partisan movement supporters, and those of the SFRY's internal enemies (Ustasha, Chetniks, and other anti-communists); historical revisionism and nationalism (see Ugrešić (1998) for more details); and widespread corruption and particularly difficult living conditions in some areas (Bancroft, 2009; Lindstrom, 2005). The term can be broadly defined as nostalgia for the fantasies associated with the SFRY (see Fig. 1). Any relationship between accurate and precise memories and facts of the past and present desires does not necessarily exist, as demonstrated by and through Yugonostalgic representations (Lindstrom, 2005, p. 233). It is nostalgia for a Yugoslav type of communism marked by some capitalist liberties, e.g. open borders, a passport that allowed them to travel abroad, foreign movies and a higher standard of living, which matters from a tourism point of view – see Tchoukarine (2010) and Tchoukarine (2015). It should be mentioned that not all citizens of post-SFRY states were able to travel abroad freely, e.g. to EU member states or to the USA and Australia. A similar term is Tito-nostalgia, as defined by Velikonja (2008, p. 31), which is a nostalgic discourse about the deceased SFRY President which arose after the disintegration of the federation.

The term Yugonostalgia came into existence in the 1990s in the post-SFRY area, and it usually has very negative connotations. To nationalists, it serves as negative label for all those intellectuals who once said something critical about the current regimes: they were/are termed to be Yugonostalgic, which means sceptics, public enemies and national traitors "who are guilty because they have publicly declared their anti-nationalist, anti-war and individual standpoint" (Pauker, 2006, pp. 77–78; Ugrešić, 1998, pp. 74, 77–78), and this was especially characteristic for Croatia (Ugrešić, 1998). In this context, Šram (2001) sees Yugonostalgia as part of four relatively independent latent dimensions of "socialist ideology", identifying Yugonostalgia with:

1. the need for the reconstruction of the former SFRY;
2. the glorification of Tito and the working class;
3. the moral superiority of the former communist system; and
4. a preference for state-ownership.

Similarly, Simmons (2009, p. 458) presented it as (negative) "romanticising of Tito's SFRY of brotherhood and unity", which is in line with the afore-mentioned Tito-nostalgia.

Pančić (as quoted by Bošković, 2013, p. 77; see also Pauker, 2006, p. 79) offered the term normal-nostalgia as more appropriate than Yugonostalgia, because it reflects the desire for a normalisation of today's life that compels people to recall memories of the last period of "normality" they had experienced. Perhaps, as everyone, they are just nostalgic for the time of their childhood (Boyer, 2006, p. 372), which perfectly coincided with the end of SFRY, and their stories, memories and feelings are transmitted to the younger generations (Bancroft, 2009, pp. 11–12; Palmberger, 2008, pp. 362, 366). This negates Volčič's (2007, p. 22) claim that Yugonostalgia, which romanticises the past, misses the point because it is not totally clear what people lost. Clearly, people are looking for a life that would be better than the present one: for many people of the former SFRY, faced with the present-day realities of extremely problematic socio-economic conditions, even with threatened existence, especially those in post-conflict areas with an ineffective public system marked by widespread corruption, any existence might appear to be better than the present – and this creates the conditions for escapism. This makes nostalgia a potential engine and means of emancipation, through which the public "[does] not restrict itself to criticism of the present world but also constructs an alternative world and aspires for the realisation of a different reality of existence" (Velikonja, 2008, p. 123).

The well-recognised Slovenian sociologist Rastko Močnik does not connect Yugonostalgia with the political idea of Yugoslavism. Bajer (as quoted by Rekść, 2015, p. 107) explains this phenomenon as the result of dramatic attempts of looking at one's identity and of a desire to be oneself in today's complicated reality, i.e. a question of identification and feeling of belonging. This is not the "result of the desire to return to the old regimes"; rather it is a lack of cultural alternatives that Slovenians find in other republics of the former SFRY (Bošković, 2013; Ilić, 2005; Velikonja, 2008). This is a similar argument to Boym's (2001; see also Lindstrom, 2005; Simmons, 2009, p. 460) reflective nostalgia, while according to Simmons (2009, p. 460), nationalism in the post-Communist states in general represents a restorative position. In contrast, for the Bosnian Croats of Mostar, Yugonostalgia is tantamount to betrayal or amnesia (Palmberger, 2008, p. 361), which could be generalised to the whole Croatian population following the explanations of Ugrešić (1998). Similarly, Šram (2001) claims that, in addition to Croatians, residents of the Vojvodina region in Serbia also share fewer Yugonostalgic feelings. These (often overlapping) aspects of Yugonostalgia, however, are now evident in the region:

1. revisionist nostalgia is primarily a political phenomenon, where the main problem is historical revisionism for political purposes (see also Oushakine, 2007);
2. aesthetic nostalgia is primarily a cultural phenomenon calling for the preservation of an authentic SFRY past, but not exploited for political or commercial gain; and
3. escapist, utopian nostalgia is a commercial phenomenon that celebrates and exploits the longing for an idyllic SFRY, regardless of facto-graphic history (Volčič, 2007, p. 28), and it is often used for tourist purposes.

Some other forms are identified in Lindstrom (2005) and Velikonja (2008).

3. Contemporary tourism and Yugonostalgia

The connection between nostalgia and tourism is not something new. At the beginning of 18th century Jean-Jacques Scheuchzer provided a mechanical and physical explanation for the favourable effect of Swiss Alpine climate on nostalgia. These conditions were advantageously placed into the tourist promotional material of accommodation providers (Starobinski, 2009, p. 62). Today we have a completely different attitude toward nostalgia, however, since we link it with travelling, especially in an escape-seeking dichotomy perspective (Yoon and Uysal, 2005), where a tourist is pushed by innate motives to travel and pulled by destination-specific

attributes in the decision-making phase (Ryan et al., 2010; Yoon and Uysal, 2005). Tourists are looking for historical and heritage destinations that attract them with nostalgic motives, but do not directly impact on their loyalty (Leong et al., 2015). Hence, this historicised, linearised narrative offers an authentic experience, although, for example, museums also host a wide range of cultural and social events that do not have much to do with heritage, but may impact the local economy and cultural life (Petrović, 2013, pp. 104–105), which is also a general characteristic of tourism.

A remnant of the Berlin Wall is one of the largest world-level tourist attractions, where tourists can not only experience and contemplate history but also buy souvenirs. The former GDR has a good marketing strategic approach as evidenced by the amount of tourism services inspired by the culture of the past in Germany (Frey, 2015). In addition, nostalgia and memory become detached from political and historical life in order to be packaged and sold for a good price: the era of the SFRY is re-written and re-packaged for promotion and resale, and hence the denial of responsibility for the wars in the 1990s and their consequences is enabled to be continued (Volčič, 2007, pp. 34–35).

The commercialisation of the symbols of the SFRY is the single most visible aspect of the Yugonostalgia phenomenon, which quickly drew the attention of academic researchers as well as the wider public (Kurtović, 2011, p. 8). Tito's image and name are therefore evaluated by the market and can be understood as a brand or trademark, not to mention the many other cases of the occurrence of his figure and name in the culture, politics and everyday life in general. In Slovenia, he "helped" to sell cars, as well as wine in Croatia, mineral water in Serbia and Macedonia, and neckties in Bosnia (Volčič, 2007). This means that historical nostalgia influences consumer attitudes: see Marchegiani and Phau (2011), Merchant and Rose (2013), and Muehling (2013) for further details.

In this tourist-commercial context, Velikonja (2008) listed many tourism-related examples of attractions: Kumrovec, Drvar, Jajce, Vis and the Brijuni Islands, the House of Flowers mausoleum in Belgrade, not to mention many hospitality facilities throughout the former federation. Also, he demonstrates significant links between tourism and Yugonostalgia, denoting this type of tourism as "Tito-tourism", for which Slovenian tourists are among the most recognisable in the territory of the former SFRY (see Tab. 2). As in the case of Slovenia and Croatia, however, significant geographical, political and economic connections between the states have resulted in a certain image of Croatia as a tourist destination for Slovenians (Konečnik, 2005; Šegota and Jančič, 2013). Slovenian tourists are not homogeneous in relation to their perceptions of Croatia's tourism services. Rather they are members of one of four clusters who labelled themselves as Yugonostalgics (Šegota and Jančič, 2013), which is in line with these authors' previous research (Šegota and Jančič, 2012). Therefore, the figures in Table 2 clearly demonstrate the importance of Slovenian tourists for tourism destinations of the former SFRY.

State	2016	2015	2014	2013	2012	2011	2010
Serbia[1]							
No. of arrivals	74,096	65,756	64,389	67,498	65,723	74,674	66,686
% of FT*	5.78	5.81	6.26	7.32	8.11	9.77	9.77
Importance**	6	4	2	3	1	1	1
Croatia[2]							
No. of arrivals	1,298,501	1,192,000	1,101,552	1,067,000	1,054,000	1,100,000	1,017,000
% of FT	10.24	9.40	9.48	9.75	10.16	11.08	11.16
Importance	2	2	2	2	2	2	2
Montenegro[3]							
No. of arrivals	18,418	19,533	16,794	16,651	18,463	18,550	22,475
% of FT	1.11	1.25	1.24	1.26	1.46	1.54	2.07
Importance	15	14	12	16	14	14	11
Bosnia and Herzegovina[4]							
No. of arrivals	50,448	45,635	39,523	42,019	39,949	41,267	40,246
% of FT	6.50	6.73	7.37	7.95	9.11	10.53	11.01
Importance	5	6	5	4	3	3	3
FYR Macedonia[5]							
No. of arrivals	9,971	11,463	14,486	13,404	13,252	14,063	12,606
% of FT	1.95	2.36	3.40	3.35	3.77	4.29	4.82
Importance	13	12	10	7	8	6	7

*Tab. 2: Slovenians as foreign tourists in the markets of the former SFRY (Note: *share of Slovenian tourists in the group of foreign tourists (FT) in the country; ** place in the (national) structure of foreign tourists)*
Sources: [1]Statistical Yearbook of the Republic of Serbia 2017 (2017, p. 380), [2]Statistical Yearbook of the Republic of Croatia 2016 (2016, p. 439); Priopćenje/First release (2017); [3]Statistical Yearbook 2016 (2016, p. 148), Statistical Yearbook 2017 (2017, p. 146), [4]Saopštenja (Press) (2017, 2015, 2010), [5]Statistical Yearbook of the Republic of Macedonia, 2017 (2017, pp. 588–589); Statistical Yearbook of the Republic of Macedonia, 2015 (2015, 2015, pp. 598–599)

Nostalgia/Yugonostalgia is only one reason for tourism engagement, which entirely corresponds to thematic tourism theory (Douglas, Douglas and Derrett, 2001; Rabotić, 2014). Terms such as "niche tourism" (Robinson and Novelli, 2005), "selective forms of tourism" (Štetić, Šimičević and Ćurčić, 2013), or "special interest tourism" (Douglas, Douglas, and Derrett, 2001) are also used. Wong and Cheung (1999) propose that tourists seek personally adjusted tourist experiences, including immaterial qualities, a sense of inner fulfilment, emotions and satisfaction, in response to the depersonalisation and rationalisation of post-modern urban life (Trauer, 2006). Consequently, countless possibilities for tourist engagement are present in the market (see Douglas et al., 2001; Kruja and Gjyrezi, 2011; Štetić et al., 2013; Trauer, 2006), and these are reflected in the number of tourist products.

In turn, the latter can be grouped in the following product families: pleasure; personal quest; human endeavour; nature; and business (McKercher, 2016). There has been little academic research attempting to determine which thematic products motivate Slovenian tourists to visit destinations of the former SFRY (see Fig. 1). Yugonostalgia is often discussed in scientific papers and books, particularly in the general or conceptual sense or in terms of society, politics and arts (culture), while tourism-related issues occur only rarely. Therefore, in this study, we examine the views of Slovenians in relation to nostalgia and other touristic reasons for travelling to destinations of the former SFRY. More specifically, the main proposition of this study is: "Slovenian tourists are Yugonostalgic and very heterogeneous in their views on reasons for their journeys to destinations of the former SFRY, which implies that they can be categorised into several clusters".

4. Methodology

A web questionnaire pertaining to Slovenian tourists' perceptions was initially developed from previous relevant research (Douglas et al., 2001; McKercher, 2016; Šegota and Jančič, 2013; Štetić et al., 2013; Velikonja, 2008). The questionnaire was focused on different perspectives of nostalgia, Yugonostalgia and tourism, and was (innately) technically tested on a sample of 500 computer-completed questionnaires by using a specialised web application. In the second step, a pilot interview with four experts in tourism was conducted. Consequently, the questionnaire was technically and substantially improved. In order to represent the population structure of tourists with SFRY travel experience, respondent-driven sampling was used; this type of sampling is particularly applicable when the focus is on subtle issues and/or when members of the specific populations have not all been previously identified so-called 'hidden populations' (Johnston and Sabin, 2010; Spiller, Gile, Handcock, Mar and Wejnert, 2017).

A group of 50 potential respondents, for which we had relevant information about their travel habits, was initially contacted and invited to share the questionnaire with their acquaintances. Special attention was put on the initial sample size with the heterogenous respondents in order to avoid unstable estimates and to approximate random sampling (see Snijders, 1992, pp. 68–69; Frank and Snijders, 1994, p. 66; Johnston and Sabin, 2010). The initial sample was stratified (this approach is suggested by Snijders, 1992), where three demographic characteristics were used: education, nationality and age. Thus, some kind of "irregular network" of respondents in Slovenia, where every previous respondent knows the travel habits of the next, was formed. A total of 520 questionnaires were collected in 31 days in the spring of 2016, and 384 were appropriate for analysis (missing responses represented less than 30% of the questionnaires).

The questionnaire started with a screening question asking whether the respondent had visited former SFRY destinations, in order to exclude respondents with no SFRY travel experience from the research. As described in section 2, "Nostalgia and Yugonostalgia", consumers or just lovers of attractions in the former SFRY destinations can be harder-to-reach because they (may) exhibit some kind of social stigma. Therefore, it is difficult to identify them as "SFRY-oriented tourists" in the population and include them in the research, although they are not few in number.

The questionnaire, which was available in the Slovenian language, consisted of three sections. The first section contained 17 items of reasons for visiting, on 5-point Likert-type scales, in which "1" means "strongly disagree" and "5" means "strongly agree". In the second section, respondents were asked what they think about tourism services available in the former SFRY, about impacts on the decision for travelling, and about Yugonostalgia; a total of five items were chosen and included in the questionnaire for additional clarification of the impacts on the decision undertaken by visitors. The last section examined the demographic characteristics of Slovenian visitors.

The collected data were analysed employing SPSS version 20.0. Both hierarchical and non-hierarchical clustering methods were used to identify clusters. Using a descriptive approach, the comparison between clusters was undertaken to analyse and describe the groups' characteristics. In addition, cross-tabulations were employed to profile each cluster based on demographic characteristics and the identified groups or clusters; chi-square tests were performed to validate the clusters and their mutual differences (at the 0.05 level of significance). Significant differences between groups with respect to the various items were verified by One-way Analysis of Variance, with post-hoc Tukey's HSD test (for unequal numbers in groups), given that the overall model was significant.

Regarding the sample profile, Table 3 summarises the demographic profile of the final set of respondents. They mainly belong to the post-1991 generation (the period of the disintegration of SFRY), although they were relatively evenly spread across all age groups. This is interesting in terms of the transmission of Yugonostalgic feelings among generations in order to influence descendants' understandings of the SFRY period. The educational structure shows that 56% of respondents finished High school or Professional secondary school (2^{nd} level). Among the respondents, 75% of the sample was female (this ratio is hard to explain as a result of the respondent-driven sampling); most respondents (75.8%) were Slovenians, 9.3% were Bosniaks, and 'others' (minority nations of the former SFRY) represent less than 4% of the total. This structure is a reflection of the past and present migration flows within the former SFRY. In addition, respondents would mostly recommend a visit to Bosnia and Herzegovina (39.4%) and Serbia (37.7%), while Croatia is in a distant third place (13.2%). Considering the heterogeneous structure of the initial sample and, consequently, the realised final sample, we estimated that further analysis was quite reasonable.

Demographic characteristic	∑	Cluster 1	Cluster 2	Cluster 3	χ2	Sig. (2-sided)
Gender						
Male	89	24	36	29	1.74	0.419
Female	267	91	92	84		
Education (finished)						
Elementary	24	15	4	5	20.539	0.008
Professional secondary	62	15	26	21		
High school	139	47	54	38		
Vocational school, college or university	101	30	38	33		
Master or PhD	30	8	6	16		
Nationality						
Slovenian	270	99	64	107	80.239	0.000
Serbian	27	4	22	1		
Croatian, Macedonian and Montenegrin*	12	3	7	2		
Bosniak	33	6	27	0		
Other	14	3	8	3		
Year of birth						
Before 1950	2	0	1	1	30.651	0.002
1951 to 1960	15	2	7	6		
1961 to 1970	47	7	13	27		
1971 to 1980	57	21	16	20		
1981 to 1990	38	9	16	13		
1991 to 2000	194	76	73	45		
2001 and over	1	0	1	0		

*Tab. 3: Demographic characteristics of the three clusters of respondents (Note: *merged into one group with ∑ > 10. Not all respondents responded to all demographic questions)*
Source: author's calculation

5. Results and discussion

A descriptive analysis showed that 83.0% of respondents repeatedly returned to the destination or state they had visited in the past, which means that they are loyal visitors to former SFRY destinations, although they rate the tourist services there as being of average attractiveness on the 5-point scales ($\bar{x} = 3.44$; Me = 3.00; Mo = 3.00; respectively, mean, median and mode); this is also typical for the members of each single cluster from Table 4. Therefore, Yugonostalgia has only an average ($\bar{x} = 2.77$) impact on their final decision, since 46.8% of respondents believe that Slovenians are not more Yugonostalgic than other nations of the former SFRY (31.8% of them chose the answer "do not know"). In this respect, it is necessary to take into consideration that the negative connotation of the phenomenon would impact the answers to direct questions. This is completely in line with the findings of Rekść (2015, p. 107) and Ekman and Linde (2005), who claim that the lowest number of people declaring their longing for the past epoch can be found in countries such as Slovenia and the Czech Republic.

In the next step, we wanted to check the reliability of the included variables. The reliability of the items was confirmed with a Cronbach's α value of 0.815. In addition, we calculated the coefficients of skewness and kurtosis for the included variables: $-1.632 \leq \gamma 1 \geq 1.412$ and $-1.666 \leq \beta 2 \geq 2.793$ (the majority is included in the interval from − 0.8 to 0.8). We also calculated the 95% confidence intervals for the means: Sig. (2-tailed) amounted 0.000 for all variables. After that, 17 variables were used in a cluster analysis to identify groups with different views and attitudes toward visiting former SFRY destinations; hierarchical and non-hierarchical cluster analyses were employed to segregate responses into mutually exclusive groups. First, a hierarchical procedure using Ward's principal component score method was employed to obtain a starting point in establishing the number of clusters. As a result, a three-cluster solution was identified. Second, the three-cluster solution was used in non-hierarchical analysis (K-means clustering). To label and delineate the identified clusters, the mean scores for each item were computed, and the results are analytically presented in Table 3 and Table 4.

The usual reasons for individuals travelling in postmodern society, such as relaxation and rest and escaping from daily routine, are important characteristics of all clusters identified, which is completely in line with Trauer (2006), Štetić et al. (2013) and Yoon and Uysal (2005), but not according to the other items (Tab. 4), with the escapist, utopian nostalgia reason introduced by Volčič (2007). Respondents are obviously completely indifferent to socialism/communism and they would not visit destinations for health reasons either. They are slightly more favourable toward the former SFRY, but on the basis of the mean values ($1.52 \leq \bar{x} \leq 2.86$), they cannot be labelled as Yugonostalgic. Memories of the common state obviously do not sell in the

Slovenian source market, as Volčič (2007) claims in the case of Tito's name and figure. This finding in some way negates the link between tourism and Yugonostalgia explained by Velikonja (2008) and Šegota and Jančič (2012; 2013). But we do believe that target groups more susceptible to SFRY exist in the market (e.g. veterans organisations) for which Yugonostalgic aspects should be explored in the future. In contrast, natural conditions (attractions) are another common reason for travelling, which is consistent with the findings of Šegota and Jančič (2012; 2013) or Douglas et al. (2001; see also Štetić et al., 2013). It should also be emphasised that the first four items in Table 4 represent the kind of motivators that are related to all other items, which can be transformed into tourist products.

The individual clusters can now be described in more detail:

a. Cluster 1 members represent one third of the entire sample (Table 4) and score low on supporting 11 reasons for travelling to the former SFRY destinations ($1.28 \leq \bar{x} \leq 2.25$), although they identified themselves as returning tourists. All rejected reasons for travelling originate in the thematic tourism theory (see Douglas et al., 2001; McKercher, 2016; Štetić et al., 2013). They are slightly more favourable to cultural and entertaining content, although even this orientation is only average. Cluster members obviously want to escape and relax in nature, which indicates that they can be called Friends of nature. On the basis of these characteristics, they can be compared to the cluster named Sensitive enthusiasts identified by Šegota and Jančič (2013). Cluster 1 differs most significantly from the other two clusters. Of the 51 comparisons in Table 4, only for three of them are the 'same' for Cluster 1 and another cluster (see Tab. 4).

b. Cluster 2 members demonstrate much more sympathy to the offer of former SFRY destinations ($0.000 \leq p \leq 0.008$). Beside the love of nature and the related relaxation (they have the highest $\bar{x}$), they are very interested in cultural- and sports-oriented events, entertainment and food and beverage; their average ratings are the highest for the majority of all variables. In comparison with the members of Clusters 1 and 3, only members of Cluster 2 visit their relatives in the former SFRY area ($p = 0.000$), which is related to the so-called roots tourism (for more details, see Koderman, 2012; Koderman and Mihelič Pulsipher, 2012). Furthermore,

Reason	Cluster*		
	1 (n = 125)	2 (n = 139)	3 (n = 120)
Relaxation and rest	4.21 a	4.49 b	4.17 a
Longing for the former common state	1.52 a	2.86 b	2.50 c
Longing for socialism/communism	1.28 a	2.32 b	2.33 b
Escape from daily routine	3.58 a	4.23 b	4.12 b
Education	1.54 a	2.80 b	2.68 b
Natural conditions (attractions)	3.96 a	4.49 b	4.36 b
Visits to cultural events	2.25 a	3.53 b	3.45 b
Visits to museums, galleries, monuments, etc.	2.51 a	3.47 b	3.68 b
Supply of food and beverages	3.20 a	4.39 b	4.26 b
Entertainment	3.46 a	4.45 b	4.25 b
Religious reasons	1.36 a	2.53 b	1.45 a
Visits to graves and other remnants of the conflict in 1990s	1.43 a	2.78 b	2.28 c
Health	1.33 a	2.12 b	1.43 a
Visits to of relatives	2.06 a	4.32 b	1.53 c
Socialising and meeting friendly and hospitable locals	2.47 a	4.23 b	4.23 b
Visits to sports events (including active participation)	1.71 a	3.67 b	2.52 c
Business	1.47 a	2.65 b	2.18 b

*Tab. 4: Clusters of respondents (Note: *Means with the same letter do not differ significantly (Tukey's HSD, $p < 0.05$, $n = 384$)*
Source: author's calculation

Item and rate	Cluster 1	Cluster 2	Cluster 3	$\chi 2$	Sig. (2-sided)
Relative short distance to the target destination	3.94	3.91	4.12	6.218	0.623
Good transport links with the various means of transport	3.27	3.56	3.58	4.096	0.848
Knowledge of language	3.25	4.46	4.06	54.780	0.000
Small cultural differences	2.69	3.89	3.78	44.185	0.000
Quality of local services	2.51	2.61	3.63	66.899	0.000

Tab. 5: Clusters of respondents according to a baseline for decision making
Source: author's calculation

socialising and meeting friendly and hospitable locals is another of their tourist activities, which additionally confirms the importance of social interactions for this variable, which was significantly different only compared to Cluster 1 ($p = 0.000$). In the context of the listed characteristics, members of this, the largest, cluster in the sample could be identified as Immigrants and their descendants – originating in the five South Eastern republics of the former SFRY (see also national structure in Tab. 3). Not surprisingly, language knowledge and small cultural differences help them when they decide to travel. On the other hand, in transport-related variables they are not significantly different from more nationally homogeneous Clusters 1 and 3 (see national structure in Tab. 3 and Tab. 5).

c. Cluster 3: this last cluster consists of Moderate lovers of nature and culture, who, beside all the already defined common characteristics, identified with visiting museums, galleries, monuments, etc., and the consumption of food and beverages (e.g. education, introduction to authentic local gastronomy, pleasure and similar items) and entertainment. This feature clearly reflects their cultural requirements when travelling; further discussion of cultural tourism can be found in Gržinić and Vodeb (2015) or OECD (2008). Socialising and meeting friendly and hospitable locals is part of the wider field of ethnicity and ethnic relations, usually understood as guest-host relationships with strong commercial connotations (Cohen, 1984). This item is an important element for members of this cluster, because in this way they could encounter the everyday life of local residents and their culture. Although they are significantly different compared to members of Cluster 1 members, they are, on the other hand, broadly similar to Cluster 2 members (see Tab. 4). The latter have certain different understandings of the destinations they visit: identity consolidation, strengthening of language skills (see also Tab. 5), discovering ancestral heritage, searching for emotional experiences and similar items distinguish the journeys of Cluster 2 members: for more details, see Koderman (2012), or Koderman and Mihelič Pulsipher (2012).

The identified clusters are also different with respect to demographic data (Tab. 3), for which there are especially interesting differences in national origins and the age distribution. From this research, gender is not a differentiating category. In addition, we identified a baseline for the decision to set out on a journey (towards the "southern destinations") across different clusters (Tab. 5), where figures show that respondents recognise these baselines as relevant. Clusters are significantly different only in the items related to the knowledge of language, cultural differences and quality of local services ($p = 0.000$):

1. the significant difference among all clusters (verified by One-way ANOVA with post-hoc Tukey HSD tests), are identified only in the item related to the knowledge of language; and
2. Cluster 1 members differ most significantly from the other two clusters once again – with the exception of the transport-related variables. On the other hand, Cluster 2 members with their positive attitudes should be reviewed again. The presence of immigrant groups from the former SFRY in Slovenia (obviously) also has a tourist connotation in terms of the so-called roots tourism. Given their large numbers, heterogeneity and social status (see Kržišnik-Bukić, 2008; Kržišnik-Bukić, Josipovič, Rizman and Žitnik Serafin, 2014), an evaluation of their tourism potentials would appear to be essential.

6. Conclusions

Many authors (e.g. Velikonja, 2008; Lindstrom, 2005; Volčič, 2007; Ugrešić, 1998) highlight Yugonostalgia in the former SFRY today in multiple forms, from restorative incarnations to more reflective varieties and, although slightly neglected, tourism represents a significant part of this phenomenon. Just as the six dominant nations that formed the former SFRY have their own experiences of the post-communist/post-socialist era, post-conflict recovery and (present) highly complex interethnic relations, various expressions and reflections of Yugonostalgia today have different manifestations in and impacts on tourism. In the context of so-called thematic tourism, some selected examples of reasons for travelling to former SFRY destinations, including those related to the former federation and its political system, were employed to identify different groups of Slovenian tourists. Although the former SFRY is today (mainly) perceived as an incomprehensible mixture of incompatible nations, religions or cultures (Bakić-Hayden and Hayden, 1992; Lindstrom, 2005; Ugrešić, 1998), it is not so negatively perceived in terms of contemporary tourism, which offers good predispositions for the development of the cross-border travel (see Tab. 2).

Based on this empirical research, three significantly different clusters of Slovenian visitors were identified: all of them were completely indifferent to the former common federation and socialism/communism, although all of them are regular visitors to former SFRY destinations – the label *Homo Iugoslovanicus* consequently – is not correct. Various other reasons that were important for their travel practices were identified, which is already known from the theory of thematic tourism in general. Obviously, the Slovenian outgoing tourists behave just like other conventional tourists do. Is this the hybrid and satirical neo-nostalgia, as defined by Velikonja (2008)? The answer to this question will be provided in future research.

The main proposition in this project can be confirmed only partly: the heterogeneity of the tourists is not in question, but their Yugoslav feelings are counter to those hypothesised, with low average ratings (e.g. 'longing for the former common state' [$1.52 \leq \bar{x} \leq 2.86$], or 'longing for socialism or communism' [$1.28 \leq \bar{x} \leq 2.33$]) clearly showing their views, although significant statistical differences do exist among all three defined clusters (except for the socialism/communism item, where clusters 2 and 3 are the same). In terms of the findings of this research, verses of the previously-mentioned song "Yugoslavia" (Jugoslavijo) that relate to the revolution and socialism, should be defined as not relevant today. Much more relevant are the obvious nature, culture, relaxation options, family relationships and other reasons for travelling, although even for these items, Slovenian residents do not demonstrate the same attitudes (see Tabs. 4 and 5).

The results reported here are only representative for the respondents included in the sample (travellers to the post-SFRY destinations), which is one of the survey's limitations. On the other hand, according to the explanations of Snijders (1992, p. 69; see also Atkinson and Flint, 2001),

we can conclude that, because of the relatively large initial sample with heterogeneous structure (stratified sample), the findings may be much closer to reality than those based on a simple random sample. Another limitation is the involvement of respondents who have access to the Internet and were interested in cooperating (the link to the online questionnaire was sent to each individual [potential] respondent); this is not so self-evident because of their potential ignorance, resistance and/or protest, although selection bias is always possible. In addition, the homogenous national structure of the sample, where a sufficient proportion of other nations (immigrants) was, however, included, did not allow performing additional analyses with newer interesting findings. This project can be seen as economically and efficiently implemented research (financial resources were very limited) on a specific tourism segment with clear indicative significance. With this first quantitative research oriented toward the former SFRY, some of the stereotypes and general judgments about Yugonostalgic Slovenian tourists and some views of Yugonostalgia based on conceptual definitions or qualitative research, have been refuted. The main types of Slovenian tourists and their (tourist) preferences related to the post-SFRY countries are now identified in a scientifically sound manner for the post-communist/post-socialist contexts.

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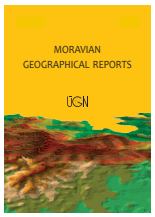

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DE GRUYTER OPEN

Geo-caching for wheelchair users: A pilot study in Luhačovské Zálesí (Czech Republic)

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Abstract

An optional leisure activity in the countryside for wheelchair users is subject to discussion b in this article. Geo-caching is a leisure activity on the borders between tourism and sport, which appeals to a growing proportion of peoples globally. It can become a prospective part of social tourism as a leisure activity for persons with disabilities: this paper devotes attention to wheelchair users. In this research project we analysed how terrain difficulty and its markings reflect on the availability of caches to be gained by wheelchair users. The aim of the field survey was to verify if the caches indicated by the difficulty of the terrain (terrain level: 1 and 1.5) can be considered available for disabled people. The availability of the caches was also assessed based on the presence (aid) of an assistant. We found that access to most of the easily available caches contains small but critical constraints for wheelchair users – from path bumps to the very cache locations which are unreachable for wheelchair users. Therefore, we have proposed a set of recommendations and pictograms to make geo-caching more available for persons using wheelchairs and to expand their opportunities for active outdoor leisure activity. The results will be used to design access to natural sites for wheelchair users.

Keywords: *disabled people, leisure time activities, sustainable tourism, accessibility, road surface, Czech Republic*

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1. Introduction

Geo-caching is a leisure activity on the borders between tourism and sport. The basic principle of the game is to search for hidden containers (caches) using GPS devices, and then to share such experiences from their search with others via the Internet. The main benefits of geo-caching include possible education of players in various fields and this way of spending leisure time is of high quality. This game has a positive effect on tourism as well, and tourism is an important factor in regional development. According to Geo-caching.com, geo-caching was created in 2000 and currently it has approximately 3 million active players and 2.8 million caches worldwide.

The popularity of this activity is also confirmed by the constant growth in the number of the caches hidden in the world and in the Czech Republic. This game is currently very popular in the Czech Republic. It has gained thousands of active players there since its start and, with respect to the number of its caches, the Czech Republic ranks among the first ten countries in the world. The caches in the Czech Republic rank among the most visited and Czech geo-cachers are some of the most active.

The word geo-caching consists of the words "geo" for "Earth" and "cache", which is the term used for hidden stocks, as well as data stored in the computer (Peters, 2009). The basic idea consists in locating the hidden containers, which are called 'geo-caches', and then sharing the experience with other players (geo-cachers) at the official website, Geo-caching.com. Geo-caching is played by people of all age groups, with strong perceptions of the player community and sensitivity to the environment. Geo-caching is not defined against the other forms of tourism. It is not a substitute, it is complementary. Geo-caching as a complement can be done nearly everywhere. It is a supportive stimulus, additional leisure activity, and a tool of tourism. As the Czech people are fond of tourism and hiking and go hiking even without geo-caching, it is considered a "value-added" (Bittnerová, 2012).

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The main objective of the European Disability Strategy 2010–2020 (adopted 15 November 2010) is to empower people with disabilities so as to enable them to enjoy their full rights, create a barrier-free Europe for all, and comply with the international commitments made at the United Nations Convention on the Rights of Persons with Disabilities (Pagán, 2012). The relationship between disability and tourism can be analysed within the broader literature on ''social tourism'', which is concerned with barriers and other issues affecting participation (Pagán, 2012).

Outdoor recreational activities include a lot of constraints for disabled people. A tourism/leisure constraint refers to various factors which preclude or reduce an individual's frequency, rate, or enjoyment as a participant in such activities (Lee et al., 2012). Table 1 presents the basic division of constraints for disabled persons within tourism, hiking and leisure activities.

The authors of this paper have dealt with issues of access to landscape for wheelchair users in the long term, at the national and international levels. This paper presents a pilot survey of options and the current status of placing and marking caches in the landscape, as well as in built-up areas. Any search for caches is not limited in age or sex and is usually affordable. In our opinion, however, it is vital to provide information about the options of cache finding and the limiting factors that can make caches inaccessible for wheelchair users. The output is a methodology that should be used by those who place the caches, as well as cache reviewers, who check and approve of individual caches. The designs show instructions for cache hiders for the wheelchair users that go alone to find a cache, as well as the options of cache marking for wheelchair users who will need assistance. Sometimes only a little is needed for a cache to be accessible also for wheelchair users. As regards the information in Table 1, the authors would like to provide information to help to eliminate one of the constraints mentioned – architectural constraints and ecological constraints. The literature review deals with social tourism and links to the issue of disabled persons. Attention is focused on the description of geo-caching as such, as well as the issue of the survey target group, i.e. wheelchair users. Also, a description of the current status of cache hiding in the terrain in relation to the survey target group is presented.

The main aim of the research is to analyse how the terrain level and its markings reflect on the availability of caches to be gained by wheelchair users. It was necessary to examine the current condition, number and accessibility of caches within the selected area – the micro-region of Luhačovské Zálesí – and to determine whether the caches, in particular in the easiest category, are available; if they are not, what are the critical limits of accessibility?. Based on these findings, we aim to suggest how these restrictions can be avoided during the hiding of the caches, and to define the spatial parameters of geo-caching for people using wheelchairs.

Luhačovské Zálesí was chosen as the pilot site for the survey because the caches there are located both in the urban environment and the landscape. The aim was to evaluate sites both inside and outside of the cities.

We based this survey on the current marking of caches:

- the assessment of terrain difficulty and
- the difficulty of finding the cache.

The paper also deals with the issue of so-called virtual caches. The recommendations proposed for placing caches in the terrain (in the municipalities and in the landscape) should help wheelchair users, who often choose not to go seeking caches due to various constraints and obstacles in the terrain, to obtain information. Everybody that would want to place a cache accessible for wheelchair users in the terrain would have to meet some parameters and the cache would be marked with a recommended symbol at the web site. The caches would be marked either as accessible independently (without assistance), or those accessible with assistance.

After discussions with wheelchair users and their families, and especially the staff of the League of Wheelchair Users, this topic was evaluated as important. They welcome each initiative that is aimed to provide better information on leisure activities for wheelchair users or specific proposals to improve the options of leisure activities.

2. Theoretical background

2.1 Social tourism and disabled people

Social tourism or 'tourism for all', which is advocated by Rollová (2010), contains the terms that were hidden in the background of social interests until recently. Social tourism focuses on making travelling accessible to people financially disadvantaged, the disabled and the elderly. Currently, this issue is given more attention, as we are aware that in many cases it can revive tourism in a number of areas and regions. Persons with disabilities constitute a group which have more complicated living conditions because of their impairments. In recent years, social tourism has become a very important topic discussed in a series of conferences organised by the United Nations (e.g. Convention on the Rights of Persons with Disabilities – CRPD), the World Tourism Organisation (e.g. UNWTO, 2016), and last but not least also the European Union authorities (e.g. European Accessibility Act, European Disability Strategy). Due to the diversity of the topic, there is no uniform definition of social tourism.

The tourism demand of disabled people in the market is increasing due to the following factors (ISTO, 2014):

i. the number of persons with disabilities;
ii. impaired people usually travel with a friend, relative or social worker;

Dimension	Constraints
Intrinsic	Lack of knowledge, health-related problems, social ineffectiveness, physical and psychological dependency
Environmental	Attitudinal constraints, architectural constraints, ecological constraints, transportation constraints, e.g. air travel, rules and regulations constraints, e.g. international air regulations
Interactive	Skill-challenge incongruities, communication barriers, e.g. language

Tab. 1: Leisure-travel barriers of disabled tourists
Source: Smith (1987) in Lee et al. (2012)

iii. the fact that the tourism market has dynamically developed;

iv. people with disabilities and older people can travel outside the main season, which makes for a more homogeneous perennial demand that all travel agencies wish to have; and

v. these clients are mostly booked to leave for a long time in advance, which is a guarantee for the tourist industry.

Page and Connell (2009) stated that social tourism can engage people who would normally not have this opportunity because of economic reasons, unavailability or inability. According to Jolin (2014), social tourism points to the available activities and programs for different population groups – the elderly, families with children, people with low income and people with disabilities – so that they have a chance to engage in them. The basic ideas of tourism for all are mainly to make tourist routes, destinations and products accessible, to take all related necessary measures that will allow all citizens to use the tourism services, regardless of any citizen's economic situation, and at the same time respecting their uniqueness and individuality (ATHENA, 2009).

Social tourism also includes leisure activities of people with disabilities and in the Czech Republic it is becoming increasingly popular. This country ranks very highly in Europe in terms of the signposting of hiking routes (www.stoplusjednicka.cz), and some places are recommended for wheelchair users (https://www.kct.cz) and (http://www.helpnet.cz). The accessibility of buildings and cities for people with disabilities is addressed by various projects, as shown by information portals (http://www.helpnet.cz). Currently, it is possible to classify 10% of the population as persons with disabilities. Adding the number of family members and assistants who accompany the disabled people, we obtain a potential 30% of the active population with special demands on travelling. (http://p12.helpnet.cz/). Such a large group of people deserves attention. Examples of projects supporting accessible tourism as such include the following: "Beskydy for all" or "Wheels on the Road" in the Czech Republic; "The landing tourism" in Bulgaria (Soldánová, 2014); and "Tourism for All UK" (TFA, 2008) and OpenBritain (OpenBritain, 2014) in the United Kingdom.

Titzl (2000) and Soldán et al. (2014) stated that social tourism helps persons with disabilities live a full and active life and join in social actions. Most of these people are forced to make a huge effort if they want to reach their desired destinations. It is very important that society is aware of people with reduced mobility and their need for inclusion in social life. According to Houserová (2005, not paged, translated from Czech): "It is necessary to accept the fact that persons with disabilities have the right to be transported and, if possible, easily and without expending all their forces". We can help them by minimising the barriers they encounter in their lives. With respect to social tourism, according to Rocca (2014), forest roads are often suitable for wheelchairs, but they must satisfy minimum requirements regarding surface, slope and obstacles. Forest roads are the object of the field work in this article. In this paper, following information from Kolářová (2012), the terms 'disabilities' and 'disabled people' are used to describe groups of people with disabilities and the research and designs are oriented to groups of people confined to wheelchairs. As Rollová (2012) states, senior citizens as well as disabled people want to travel; however, they usually do not want programs for "special clients". Products marked as Tourism for All are much more acceptable.

2.2 Wheelchair users and design considerations

Wheelchair users are people with impairments whose movement is dependent on the mechanical or power-driven wheelchair. These people are challenged with limited movement and especially architecture-inflicted barriers (Kacanu, 2001). Vágnerová (2004, p. 251, translated from Czech) says that: "Mobility impairment is the cause of restricted independence; it strengthens the dependence on other people, represents a barrier to getting lots of experience, and brings about the related restriction of socialisation or social adaptation."

It is important to provide all the people who have mobility impairment with compensation for their limited movement. Unless society is aware of this, they may become excluded from social life. Support for people in wheelchairs can help make various activities accessible and that will keep them active and prevent their social exclusion (Vítková, 2006).

Access to enclosed areas (buildings, etc.) in the Czech Republic is regulated in Decree No. 389/2009 Coll., on general technical requirements for barrier-free use of buildings. The parameters are analysed in detail in Zdařilová (2011). Figure 1 and Tables 2 and 3 present the parameters required for a wheelchair to turn.

Stronger wheelchair users can move on reinforced roads using their own forces. Potential obstacles on the roads are especially steep slopes and a disproportionate length of the route. The degree of their independence is dependent on the character of their disability. Persons in wheelchairs are

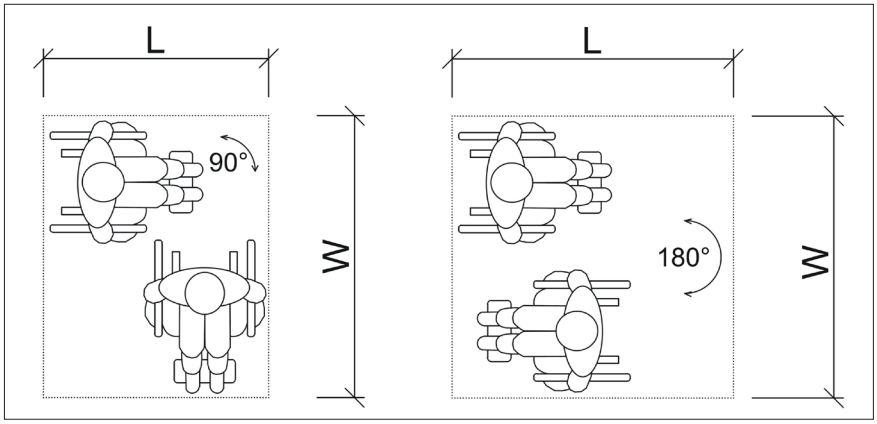

Fig. 1: The space necessary for rotation – supplementary material for Tables 2 and 3
Source: Zdařilová (2011)

Wheelchair type	L – length [mm]	W – width [mm]
mechanical	1,300	1,450
power-driven	1,500	1,600
with assistance	1,200–1,800	1,500–1,800
the minimum value stipulated in Decree No. 398/2009 Coll.	1,200	1,500

Tab. 2: The space necessary for 90° rotation
Source: Zdařilová (2011)

Wheelchair type	L – length [mm]	W – width [mm]
mechanical	1,900	1,500
power-driven	2,200	1,600
with assistance	1,600–2,000	1,500–1,800
the minimum value stipulated in Decree No. 398/2009 Coll.	1,500	1,500

Tab. 3: The space necessary for 180° rotation
Source: Zdařilová (2011)

classified in groups and subgroups – most often we encounter a classification based on the cause, i.e. why these persons need the wheelchair (Bendová, 2007):

- wheelchair users with severe physical disabilities present from birth; and
- wheelchair users whose disabilities occurred during a person's lifetime, due to an accident or illness.

Making landscapes accessible by designing tourist routes, allowing mainly wheelchair users an independent, safe, easy and smooth motion and their passing with other pedestrians or even bicycles in a natural environment, has been discussed for example by Loučková and Fialová (2010), and Jakubis and Jakubisová (2012). Junek and Fialová (2012) state that there are many among us who like a quiet corner of nature – to climb rocky peaks, descend into valleys or breathe on the banks of roaring torrents. There are also people, however, who, due to their medical condition, are unable to do so and we have somehow overlooked to give them the opportunity (Junek et al., 2012). In addition, Janeczko et al. (2016) indicate that preferences of wheelchair users regarding recreational routes and activities vary due to locational conditions. Hence, there is a need for such field work not only for different regions but also at the national level.

The trails shared by cyclists and pedestrians should have a width of ≥ 3.00 m. If the intensity of traffic on the trail exceeds 180 pedestrians/hour and 150 cyclists/hour, the trail should be extended to 4.00 m, or the traffic of cyclists and pedestrians will be separated. At an intensity of ≤ 50 cyclists/hour and 100 pedestrians/hour, the width of the trail can be reduced to 2.00 m, or in cramped conditions to 1.75 m (Kotásková and Hrůza, 2013).

2.3 Geo-caching

Ihamäki (2013) describes the implementation of geo-caching for the case of educational programs in schools. Based on a specific example, the author points out the positive aspects of geo-caching. By geo-caching, children can improve their skills in language, critical thinking, information technology and geography. Ceeová (2008) stated that geo-caching should be included in the practical exercises of geography, because it combines the use of modern technology, work with a map, movement in the terrain and a game – all together in an appropriate way. Donadelli (2014) in his work "Outdoor learning and geo-caching", showed some exact steps for incorporating geo-caching into teaching. In any case, it is necessary to have a clear goal – what the teacher wants to pass to students, find a safe environment for the game, think of interesting tasks that will motivate students, and create teams so that the game is interesting for all students. Zecha (2012) focused on the connection of geo-caching with ecological education and the possible ways to use this combination. This work, for example, answers the questions how an appropriate cache should look and what features the route designed for environmental education should have.

Some studies have addressed computational aspects, others refer the use of the activity as a pedagogic tool, but very few have dealt with motivational or geographical issues related to geo-caching (Mendes et al., 2013). Weber and Haug (2012) described possible conflicts of geo-caching with the environment. From the perspective of applied geography, for example, the involvement of geo-caching in urban and regional development strategies can be examined and solutions to potential conflicts can be researched. Further, they mentioned that geo-caching players are active both virtually – when searching for information about caches – and physically – when searching for hidden containers. The physical presence provides the social importance of the game. Zeng (2011) drew attention to the fact that, unlike other similar games, in geo-caching you must confirm your presence in the logbook. Only then can the players be acknowledged to have found the cache. Also, Zeng pointed to the importance of physical presence and the possible satisfaction of a desire to leave virtual travelling, which according to this author is becoming the most common form of travel at present, as well as a major benefit in the possibility that players create their own experience.

According to Formánková and Vágner (2012, p. 12, translated from Czech): "geo-caching can be used by tourist agencies or other tourism actors as a marketing tool to attract a different customer segment or bring tourists to areas with low traffic". The main advantages of the game are the relatively low costs and the wide range of uses: companies

and government agencies in the USA use the game to attract tourists to specific areas and to make various social events even more interesting. (Gillin, 2010).

According to O'Hara (2008), the main components of this game include the movement of participants in the area and their involvement in the game, either physically or virtually. In the course of the game, interaction between the participants occurs. One of the main themes of geo-caching is discovering new places. O'Hara states that the caches are hidden in interesting places surrounded by natural treasures. Geo-caching brings players to locations they would not see otherwise. Willis (2010) claimed that geo-caching is not a mere activity carried out in the area, but the game participant is forced to interact with the environment. This cooperation then motivates them to think about the environment in which they are moving. Even though they know the specified cache coordinates in advance, they can only find an approximate location. To discover the cache, the players need to use their imagination and experience. They are often forced to overcome a series of physical and geographical barriers.

Geo-caching can be classified as a local, short-term unorganised and individual type of tourism. There are cases, however, when groups of geo-cachers set out for several day-long trips (often abroad) to find caches. Geo-cachers also use bicycles and cars, so it is not totally appropriate to call geo-caching a form of hiking (Holešínská, 2012).

The Czech Republic is tenth in the world in terms of the number of caches, and sixth among European states for the year 2015. As of October 31, 2015, 46,333 (active caches were registered in the Czech Republic. When the already disabled and archived caches are added, over 69,000 caches have been created in the Czech Republic since the beginning of the game (http://project-gc.com/Profile/ProfileStats).

Geo-caching is a form of soft tourism, which combines staying in the countryside with getting informed about the places visited. Some cachers use bicycles and cars but most of them make long foot trips. Caches in the landscape allow the cachers to perceive natural values and processes more intensively. These types of caches serve as virtual educational trails and information boards. Geo-caching uses modern technologies and thus spreads information among young tourists who are not interested in information boards (Vítek, 2007).

There is a risk associated with geo-caching as a tourist activity, however: a negative impact on nature and the landscape. Many caches, for example, are hidden in places located in protected areas. This impact is currently vividly discussed in the literature, especially the spaces around caches, which are most impacted by the search for them. Therefore, visitor rates must be closely followed and, if possible, controlled (Patubo, 2010).

2.4 Geo-caching in the Czech Republic as a form of leisure activity for persons with disabilities

The Czech encyclopaedia of geo-caching (wiki.geo-caching.cz) states that the number of stars on the scale of the terrain represents the number of limbs needed to find the cache. The description of terrain level 1 is "I can jump there with one leg, also a wheelchair user can get it easily". Apparently, caches with terrain level 1 are the most easily available ones. Their hiding and seeking, however, is not very popular for most of the geo-caching community. These caches are located in places accessible for the general public, and therefore they are often the target of people who do not know geo-caching and who sometimes even in ignorance steal or destroy the container. The cache hiders need to check the containers constantly and see whether they are in place and intact. This is very discouraging for the cache authors with respect to hiding the caches in terrain level 1. Characteristics of difficulty can be found in Table 4 and the characteristics of the terrain for the distribution of caches are presented in Table 5. Figure 2 shows the number of caches based on the level of difficulty and terrain in the Czech Republic as of December 31, 2015. From Figure 2 the most frequent caches are those marked as terrain level 1.5 and 2; however, these are inaccessible

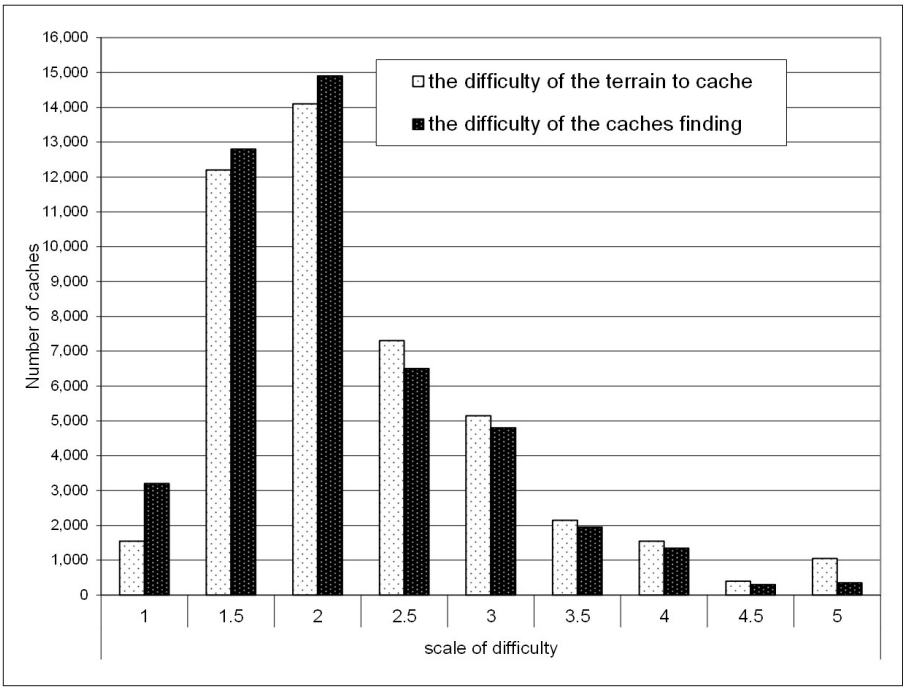

Fig. 2: The number of caches in the Czech Republic by the level of difficulty and terrain as of October 31, 2015
Source: authors, based on project-gc.com

Difficulty	Difficulty characteristics
Level 1	Caches easy to find, thanks to the description and clues. In some cases, it is possible to find the cache even without a GPS device, after a thorough study of the cache listing. Recommended for beginners. Hidden in a solitary tree roots, at small sacral buildings in a meadow, etc. No multi-caches or mystery caches are included.
Level 2	Simple traditional and multi-caches with the usual hiding (trees, stumps in the forest, well accessible thickets).
Level 3	More complex multi-caches, where the cacher proceeds from one hidden place to another and collects the information necessary to find the final coordinates. These caches require thorough preparation before the search. Difficult calculations are included that can be very challenging. Most of these caches have interesting hiding places.
Level 4	Very time consuming. Difficult mystery caches and very long multi-caches. Involve complex puzzles and their hiding places can be very challenging even for experienced players.
Level 5	This category includes the most difficult mystery-cache with great time demands and difficult puzzles. Caches are designed for truly experienced players. Not everyone can find such a cache.

Tab. 4: Cache classification by difficulty
Source: authors, based on Geowiki.cz

Terrain	Terrain characteristics
Level 1	Roads, reinforced paths, sidewalks, marked hiking trails, but also dirt roads. The paths where everybody without distinction can move, mothers with children as well as people in wheelchairs or cachers with roller skates.
Level 2	Not reinforced roads in any terrain. Simple field or forest terrain outside roads. Children and their grandparents can manage.
Level 3	More difficult terrain with no roads; steep hills, skipping over streams, thickets, nettles. Terrain manageable for most people, but with possible minor complications (abrasions, heavy breathing).
Level 4	Terrain for sporty people. Includes very steep slopes, wetlands and marshes, wading streams, rivers (streams that can be skipped over are included within terrain level 3). This designation is recommended for all caches which are 2 metres above ground, and it is necessary to climb up the tree/wall.
Level 5	Very difficult terrain; requires special equipment. For very fit sporty people. Includes rappelling, diving, swimming against the current, etc.

Tab. 5: Cache classification by terrain
Source: authors, based on Geowiki.cz

for wheelchair users. Caches with difficulty and terrain levels marked with three or more stars are designed for experienced cache-hunters, who play the game on a regular basis and have several years of experience.

3. Methodology

3.1 Survey design

A field survey was conducted in the case study territory – the micro-region Luhačovské Zálesí (Czech Republic). This location was chosen with respect to its proximity to the Luhačovice spa town. Luhačovice is the largest Moravian spa with a long tradition of spa treatments for respiratory, digestive disorders, diabetes and musculoskeletal problems. The town is famous for its natural mineral springs, favourable climatic conditions and pleasant environment, which combines beautiful nature and typical architecture (http://www.luhacovice.cz/24834-lazenstvi). The possibility of treating diseases of the musculoskeletal system in the area was an important aspect for making research in the field of accessibility of caches. We focused on a target group of people with reduced mobility – people in wheelchairs.

The aim of the field survey was to verify if all the caches indicated by the difficulty of the terrain (terrain level) 1 and 1.5 can be considered available for disabled people. The availability of the caches was also assessed based on the presence (aid) of an assistant. In the course of the research, all caches with the difficulty selected were found (total number of caches 21, as of October 31, 2015 – that is about 18% from all the caches in the study area: see general information about the caches below), and photographs were taken of the caches and access to them. Inappropriate situations were identified on the basis of the critical limits excluding wheelchair users. For example, these included terrain barriers (kerbs, large cracks in road surfaces, bumpy roads, etc.) or caches located outside the defined range. The accessibility of individual caches was assessed using the methodology of the Prague Wheelchair Organization; this methodology is also used for the rules of cache hiding for the disabled. A cache hiding place is marked by a circle in the photographs, bold arrows and ellipses show obstacles on the way to the cache.

The terrain survey was conducted in summer 2016. No wheelchair user participated in the pilot survey to check the existing caches. The caches were identified (found) and their surroundings were visually searched. A tape measure and a retractable tape measure were used to measure the distances, sizes and heights of obstacles, and specific troublesome sections were photographed. The primary factor taken into account was whether a person sitting in a wheelchair can find and get the cache without assistance.

Geo-caching offers rating scales for the difficulty of both seeking the cache and the route. As easily accessible caches are often stolen or destroyed, their occurrence is not very frequent. Based on the field survey and the information from the discussion forum at the website on geo-caching

(https://www.geocaching.com), measures and general recommendations were proposed for people who hide caches. The proposals focus on the accessibility parameters that need to be adhered to with regard to the movement of people in wheelchairs. The parameter proposals and recommendations were subject to consultation with the staff of the League of Wheelchair Users in Brno.

3.1 Area under study

The micro-region Luhačovské Zálesí was founded in 1999. It is located in the south-east part of the Czech Republic and is in the Zlín region. It consists of 24 municipalities. The area of the micro-region is 248.54 km^2 with a population over 25,000 inhabitants, which gives an average population density of 105 inhabitants per km^2 (the micro-region has a rural character). The largest municipalities by population are Luhačovice and Slavičín. Approximately 55% of the total population of the micro-region live in these two towns (http://www.luhacovskezalesi.cz/mikroregion/), see Figure 3.

There were 119 caches in the micro-region as of December 31, 2015. Most caches are located in Pozlovice (32 caches), the number is so high thanks to the series of mystery caches (25 caches) which are placed around Luhačovská přehrada Reservoir. The second ranked municipality as regards the number of caches is Luhačovice. There are 25 caches in total. The most caches per square kilometre are to be found in Pozlovice. The second ranked density is in the smallest village in the area, Podhradí, with a total of 4 caches. The lowest values are found in Slavičín, which is primarily due to it being the largest area, but also the fact that there are only 4 caches. There are 7 municipalities with no caches at all in the micro-region.

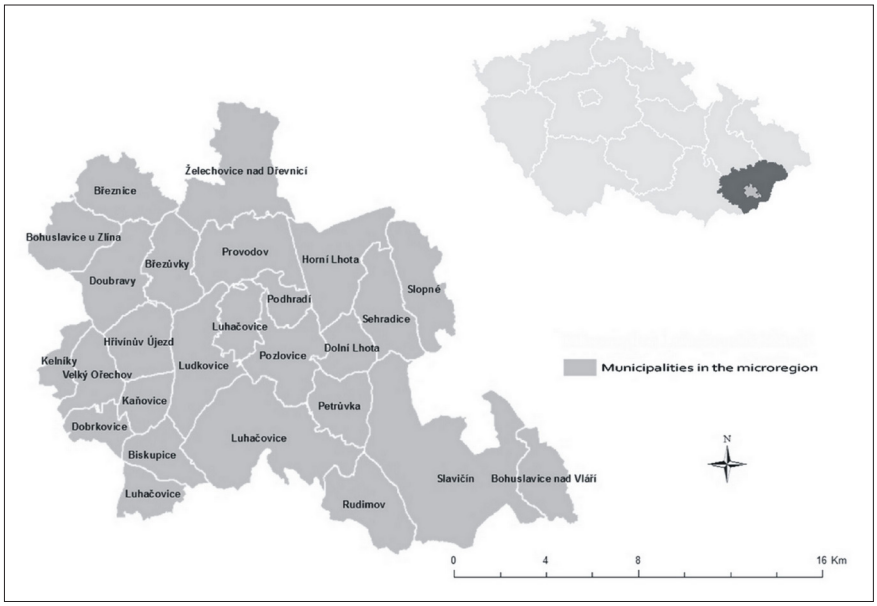

Fig. 3: The location of the Luhačovské Záhoří microregion
Source: authors, based on ArcČR 500

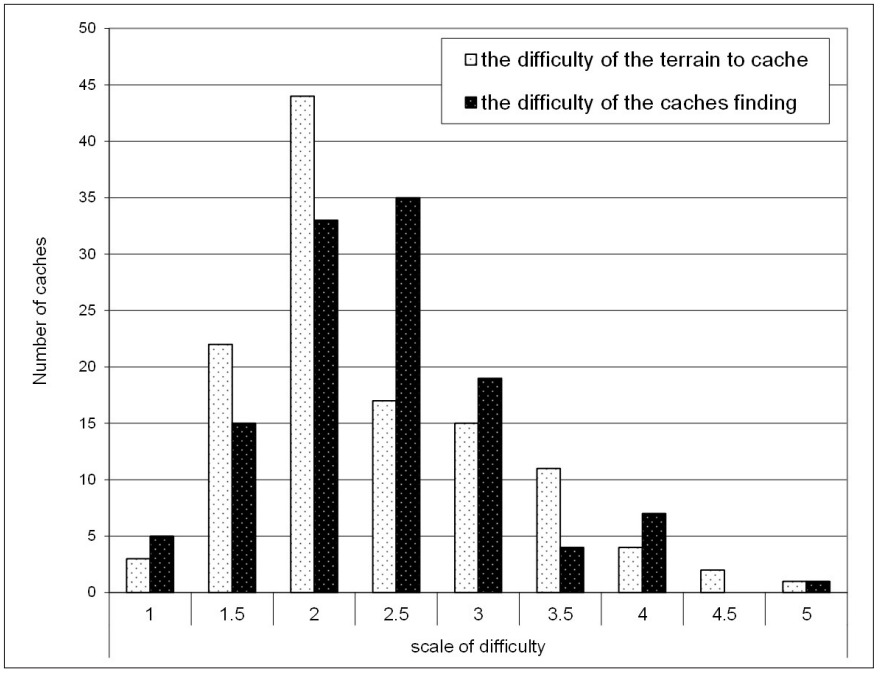

Fig. 4: Representation of caches by level of difficulty and terrain in the micro-region Luhačovské Zálesí as of October 31, 2015. Source: authors, based on geo-caching.com

Using the difficulty of finding a cache, the most frequent in the micro-region are caches at levels 1.5 and 2. From the perspective of the difficulty of the route leading to the cache, the highest number of caches are in terrain level 2 and 2.5 (see Fig. 4). Similar to the national comparison, caches of difficulties 1, 4.5 and 5 for both indicators have very low values (source: geocaching.com).

4. Results

Based on the literature and expert consultations with members of the League of Wheelchair Users in Brno, we formulated rules for hiding caches intended for people in wheelchairs. The rules are divided into two main categories:

1. independently accessible caches; and
2. caches accessible with assistance.

As even the path to the destination is demanding and a more complex categorisation could be slightly discouraging, we chose this two-level division. The levels only differ in terms of the difficulty of the terrain, which can be more challenging in the case of caches with assistance. The very getting to the cache is, in both cases, (unaccompanied cache and cache with assistance), dependent on the person in the wheelchair.

The proposed rules are described so that they are understandable to the general public, easy to use, and quick to apply in practice. The figures that are an integral part of the rules should serve for simplification and an easier understanding of the "barrier-free" access to the caches. At the present time, there is no unified methodology to map hiking trails for people with disabilities in the Czech Republic. The colour coding of the proposed pictograms was created after consultations with members of the League of Wheelchair Users in Brno, based on the methodology for building access evaluation, which is being prepared in cooperation with other organisations by the Prague Wheelchair Organization (www.presbariery.cz), because this methodology should become recognised everywhere in the Czech Republic in the future. The goal is not to create new markings, which could be misleading for persons with disabilities, but instead to link markings which will be used for both the tourist and urban routes suitable for persons in wheelchairs. The route description includes the height as well as cross gradients, which would be checked by the so-called reviewer (volunteer) in each area, who would assess and approve the caches established in the area.

4.1 Recommendations for different types of caches

A – Independently accessible caches:

This category is designed for less experienced wheelchair users, wheelchair users without assistance, hand bikes and power-driven wheelchairs. The pictogram to indicate this cache and the route is shown in Figure 5.

Description of the route: The route to an independently accessible cache must lead on a technically (concrete, tar, paving) or naturally reinforced and levelled surface, which does not change even in rainy weather. Along the route, there may not be clefts over 20 mm (drainage grooves, train crossings, etc.). The route gradient for the entire length of route has a maximum of 6%, in a section of 9 m a maximum of 8%, at a cross gradient a maximum of 2%. Due to the size of wheelchairs, it is necessary to allow sufficient width for the path. The minimum path width should be 1,500 mm, and there is a possible short-term narrowing to a minimum of 900 mm. For two wheelchairs to pass each other, a minimum width of 2,000 mm is suitable. The route should not contain any obstacles higher than 20 mm, such as roots, kerbs, holes, gravel, etc. Any obstacles reaching over 20 mm should be pointed out by the authors in the cache description. Tables 2 and 3 and Figure 1 show that it is necessary to allow adequate space for wheelchair turning.

Cache placement: When placing the cache, it is necessary to remember that people in wheelchairs have a limited horizon and reduced vertical reach. The reach of an "experienced" wheelchair user to the side is 400 mm, or up to 600 mm when leaning; the reach forward is 650 mm. The cache should be placed at a minimum of 200 mm above the ground, preferably at a height of 400–1,000 mm above the ground, with a maximum of 1,400 mm so that it is reachable from the wheelchair. Additionally, the placement height should also consider whether the person in a wheelchair will need to reach to the side or forward and also from which distance, or how close they will be. The so-called deadlock for wheelchair users is shown in Figure 6. The cache should not be placed in a corner – in a right-angled triangle with dimensions 450 × 450 × 630 mm.

B – Caches accessible with assistance:

This category is appropriate for very proficient wheelchair users, power-driven wheelchairs and wheelchair users with assistance. The pictogram to indicate this cache and the route is shown in Figure 7.

Description of the route: The route to the cache accessible with assistance must be located on technically (concrete, tar, paving) or naturally reinforced and levelled surface, which may be slightly waterlogged or muddy in rainy weather. Along the route, there may not be clefts over 20 mm (drainage grooves, train crossings, etc.). Routes can climb for their entire lengths by a maximum of 8%, in a section of 9 m by a maximum of 8–12.5%. The cross gradient can reach 7% to a maximum of 4% of longitudinal gradient. The cross gradient can be a maximum of 4% when the longitudinal slope is 4–12.5%. The path width should be at least 1,200 mm, but short direct narrows can be a minimum of 900 mm. The route should not contain any obstacles,

Fig. 5: Marking of a cache accessible without assistance (independently accessible caches)
Source: authors' elaboration

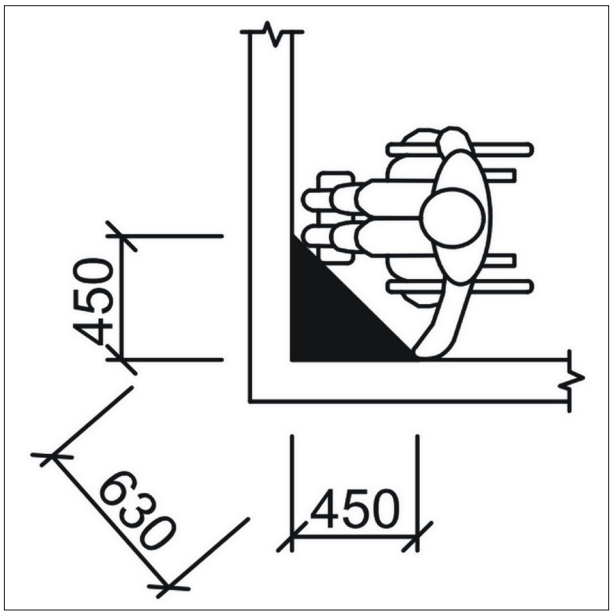

Fig. 6: Wheelchair user's deadlock
Source: authors based on ligavozic.cz

Fig. 7: Marking of a cache accessible with assistance
Source: authors' elaboration

such as roots, kerbs, holes, gravel, etc. If there is an obstacle on the route which can be avoided by taking a path with the above-mentioned parameters, the cache author will provide this information in the cache description. Likewise, the author will point out obstacles greater than 50 mm.

Cache placement: The cache placement should comply with the recommendations for the caches accessible without assistance.

C – Virtual caches for persons in wheelchairs:

It is not always easy, especially in natural terrain, to find a convenient place to hide a cache and, at the same time, choose the terrain level that could be marked with a single star. In order to make a larger quantity of caches accessible and thus to involve a wider range of disabled people, virtual caches for wheelchair users were proposed. These caches have no physical location, so that the cache author only finds a suitable terrain to the cache.

The authors of the virtual caches, as well as the physical ones intended for disabled persons, can be both a person in a wheelchair and a person without disability. This possible authorship of caches represents a strong motivation for disabled people to get involved in the game. Individual caches contain tasks, based on which the cachers receive points and are acknowledged to have found the cache. The tasks in this case are not meant to make cache access more difficult, but rather to make otherwise inaccessible places available and motivate players to gain a greater number of caches. The authors of virtual caches choose the task assignment as a function of their own imagination, as well as the options offered by the place selected. A bonus task aims to motivate players in wheelchairs to gain more caches that are close to one place. The geo-cachers on wheelchairs can obtain a reward for finding a specific number of caches in an enterprise, whose address and name will be provided to them by the staff of the local information centre. This information can also be found on the playing card. The reward for players in wheelchairs can be, for example, a free cup of coffee. The offer will depend on the individual enterprises. For a more detailed description of the virtual caches, see Table 6.

4.2 General results: cache locations and routes

Out of all the caches at the terrain level 1 or 1.5 found in the area surveyed, some are selected as examples and described as inappropriate for wheelchair users. The cache in the area in Figure 8, for example, is partly accessible for a person in a wheelchair. There is a paved road leading to

Task	Task description
Photos	The player takes a photograph at the place of the cache coordinates. The player sends it to the cache author and requests the point for finding the cache.
Get to know the place	It is necessary to fulfil a task, which is located at the place of the cache coordinates; the task is directly linked to an important spot, building or natural monument, etc. Examples: count the number of steps to the building entrance, find the year of establishment/re-construction of the building, note the colour, number of windows, go to the information board and find out.... etc. The fulfillment of the task is consulted with the cache author, who decides whether the cacher can get the point.
Bonus	The players pick up cards at the information centre where they put down the individual caches. After finding all the locations of the virtual caches and the proper completion of the information, the players can go to the place/service where they get a reward for the "catch".

Tab. 6: The tasks of virtual caches for the disabled
Source: authors

the cache, which can be an advantage even for persons in wheelchairs without assistance, but the surface of the tar road is broken by roots and thus finding the cache is not possible for a person in a wheelchair.

Another inaccessible cache location was identified in a container in Figure 9. The cache is fixed outside the metal rod using a magnet at a height over 1.5 m above the ground, which is unsuitable for people in a wheelchair. At the same time, the terrain surface leading to the cache location is impassable for wheelchair users (Fig. 10).

Fig. 8: The route to the cache – tar damaged by tree roots Source: authors

Fig. 9: Cache location at a height of 1.5 m above the ground. The maximum height should be 1.4 m. Source: authors

Fig. 10: Damaged surface does not allow wheelchair users to access the cache. Source: authors

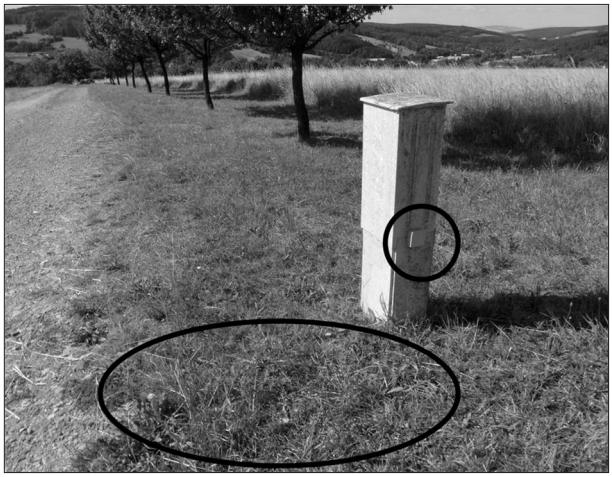

Fig. 11: Cache location at the correct height (0.4 m above the ground, the minimum height is 0.25 m); the road surface is troublesome. Source: authors

An appropriate placement for a cache is shown in Figure 11. The container at this height is reachable for a person in a wheelchair. The cover gets opened easily and it does not require any excessive force. The path to the container (Fig. 12), however, only partially meets the criteria for cache availability for people in wheelchairs. This cache could be marked as appropriate for a person in a wheelchair with assistance.

Although a cache is often marked with terrain level 1, the obstacles on the route (see Fig. 13) make it unreachable for wheelchair users. The space is too narrow for rotation, and the clear height is low. A wheelchair is also unable to get over kerbs and through narrow places on the way to the cache (see Fig. 14). The most common obstacles on the way to the cache are these kerbs. If the road to the cache is tar, in most cases there are kerbs higher than 20 mm, which results in blocking the way to the cache for wheelchair users (Fig. 15). Another problem is damaged surfaces of the roads.

Figure 16 shows one route to a cache which could be classified as accessible with assistance; unfortunately, there is a narrow place on the way which cannot be avoided, so the cache becomes unreachable again. The minimum width for a safe wheelchair passage should be 900 mm.

The above analysis of the example images of caches shows that the authors do not evaluate the entire cache route as a complex. Naturally, it's not simple for most authors of the caches, as they can hardly imagine what options a wheelchair user has.

Fig. 12: The route to the cache – inappropriate, unpaved surface. Source: authors

Fig. 13: Cache located at the right height, but there is a low clear height. Source: authors

Fig. 14: The route to the cache – troublesome kerbs and a narrow space. Source: authors

Fig. 15: Kerbs and damaged surface on the route Source: authors

Fig. 16: The path narrowing to a width of 500 mm prevents a wheelchair user from passing. Source: authors

Fig. 17: The location of the cache under the bridge Source: authors

The cache in Figure 17 is located below a bridge, which is a part of a bike trail. Placing a cache on a bike trail makes it available for many wheelchair users; however, getting a cache under the bridge might be complicated, even for a ealthy person in rainy weather. Yet, there are many places in the surroundings of the bike trail where the cache could be hidden, for example, benches, lamps, trees along the trail, bushes, etc.

It is not simple to find suitable conditions for the placement of the caches in natural terrain. Although the authors of the caches in Figures 18, 19 and 20 assessed the terrain level as 1.5, they probably did not realise that the grass, which is found all over on the route, is impassable for wheelchairs. Furthermore, this cache is located below ground, which is too low for wheelchair users. The lowest possible location is at least 200 mm above the ground.

Fig. 18: Grassy surface on the route to the cache Source: authors

Fig. 19: Inaccessible terrain for wheelchairs Source: authors

Fig. 20: The location of the caches in the ground – not suitable for wheelchair users. Source: authors

These descriptions of the images of the various cache hideouts and the routes to them, show that most authors of caches marked with terrain level 1 were not aware of appropriate spatial parameters for the location of the caches, such that they are suitable for people in wheelchairs. For a physically healthy person, it is difficult to imagine what a person in a wheelchair perceives as an obstacle, what are the limits that apply for such persons, and how much effort they have to make to achieve the target.

5. Discussion and conclusions

To make geo-caching available and accessible for persons in wheelchairs it is necessary to involve not only active players of geo-caching, but also entrepreneurs, institutions and various associations. The expansion of geo-caching for persons in wheelchairs depends not only on active players who will constantly increase the number of caches, but also on the players who do not suffer from any physical disabilities. Therefore, it is important to raise citizen awareness of social tourism and its importance for service providers within tourism. Investments in making the countryside accessible for persons in wheelchairs are appropriately and effectively spent.

Rollová (2012) states that it is not totally appropriate to point out that a facility (in this case, a cache) is suitable for wheelchair users. In contrast, however, we are of the opinion that pointing out that a cache is suitable for wheelchair users either with or without assistance, possibly pointing out potential constraints on the road, can encourage more wheelchair users to set out for trips. We are convinced, with supporting evidence based on face-to-face consultation with representatives of the League of Wheelchair Users in the Czech Republic and wheelchair users themselves before and after our survey, that disabled travellers will welcome expansion of their recreational activities. For geo-caching to reach wheelchair users, it is important that the rules for setting up accessible caches are known and accepted by at least a part of the player community. Only then will such caches be really created and available, such that the number of them will be interesting enough for wheelchair users to try to find them. Besides the benefits for the cachers, it will be then useful for municipalities and regions where it can further contribute to the development of social tourism.

Taylor and Józefowicz (2012) found that a limiting factor for wheelchair users is the need to book tickets or another service in advance. In contrast, geo-caching is available immediately (either inside or outside a municipality). Also, they found that disabled persons actively seek open-air activities, and therefore geo-caching is also highly suitable.

The aim of this paper was to set limits and recommendations for proposing caches. It is possible to revise and mark the existing caches as suitable for wheelchair users – if they meet the recommended parameters. If the measures can start the elimination at least one of the constraints defined in Table 1 (Smith, 1987, in Lee et al., 2012), our aims have been met.

The field survey, which focused on caches with terrain levels 1 and 1.5, based on the methodology prepared and used by the Prague Wheelchair Organization, provided strong doubts concerning the claim that these caches are suitable for persons in wheelchairs. The analysis of the rules that help authors of newly-established caches rate the difficulty of the terrain and actually getting the cache, showed that the rules do not contain sufficient information

regarding the movement of wheelchairs in the field. The cache authors, then, lack accurate information about what limits wheelchair users have and what obstacles are impassable for them in the countryside or in the city. Based on these findings, rules for establishing caches suitable for people in wheelchairs have been formulated, using the above mentioned methodology.

These rules are divided into two sections regarding (i) independently accessible caches and (ii) caches accessible with assistance. The individual types of caches vary only in the difficulty of the terrain: the actual reach of the cache is in both cases dependent on the person in the wheelchair. It is obvious that if the cache could be reached by an assistant accompanying the wheelchair user, it would indicate that a larger number of caches would be accessible. The goal is not only to encourage persons in wheelchairs to play geo-caching, however, but to provide them with real experiences of the game. Virtual caches for disabled persons have been proposed to make a larger number of caches, in this case rather points, reachable. This type of caches does not have a physical form, but is bound by a task to a significant place. As research with a similar topic is not available, we cannot compare the proposals and their contribution with other studies. In order to develop the proposed instruments, it is necessary that society realizes that any form of attention is a way to overcome the barriers between the world of healthy people and people with disabilities.

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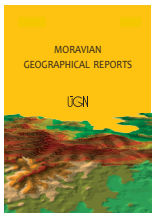

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DE GRUYTER OPEN

Regional identity and the renewal of spatial administrative structures: The case of Podolia, Ukraine

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Abstract

The relationships between territorial identities and administrative divisions are investigated in this article, in an attempt to reveal the possible role of territorial identity as an instrument for administrative-territorial reform. The study focuses on Podolia – a key Ukrainian geographical region with a long and complicated history. A survey of residents living throughout the region showed that the majority of respondents had developed strong identification with both historical regions and modern administrative units. The close interaction between "old" and "new" identities, however, caused their mutual alterations, especially in changes in the perceived borders of historical regions. This means that the "old" historical identities have strong persistence but simultaneously survive constant transformations, incorporating the so-called "thin" elements, which fits the concept of dynamic regional institutionalisation and the formation of hybrid territorial identities. Consequently, although territorial identity may be used to make administrative territorial units more comprehensible for people, the development of modern administrative units based on hybrid identities, which include both thick and thin elements, may be another feasible solution that involves stakeholders in regional development.

Keywords: *territorial identity, regional institutionalisation, administrative-territorial division, decentralisation reform, Podolia, Ukraine*

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1. Introduction

Currently, the Ukrainian government is implementing a decentralisation reform, which enables, *inter alia*, the modernisation of administrative divisions. Since the spring of 2015, the existing local urban, township and rural councils have been voluntarily consolidated into new grass-root territorial communities, following official procedures approved by the government (Udovychenko et al., 2017). The next stage of reform deals with the creation of new administrative raions (counties). Another option, currently under consideration, involves the transformation of the regional level by changing the limits of existing administrative oblasts and/or merging them into larger administrative units (regions).

The current administrative division of Ukraine is inherited from the Soviet Union and basically ignores historical, cultural and geopolitical regional differences, which existed before the establishment of the socialist system. Consequently, the "old" territorial identities, developed on the basis of historical regions, existed without any respective institutional framework for nearly a century, and therefore could evolve or disappear. So-called "new" territorial identities, however, associated for example with administrative oblasts, could have developed during the times of Soviet-originated territorial divisions. Also, one might hypothesise a complicated process of interaction between "old" and "new" identities.

The stability of any administrative division and successful territorial development largely depend on a common vision of future development strategies, which are shared by the majority of people in the territorial community and are based on a common past and common cultural values. This brings up the question: To what extent might any existing territorial identity be considered in reforming administrative-territorial divisions at different levels – or even if it should be?

Thus, the aims of this study are: first, to study the spatial patterns of territorial identity within a selected Ukrainian region; second, to clarify the relationships

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between territorial identities and administrative divisions, including the stability of historical territorial identities and the interactions of "old" and "new" identities; and third, to discuss possible proposals for changes in the administrative divisions that follow from the study results.

2. Theoretical background

The scientific literature presents several approaches to the conceptualisation of territorial identity. The Russian geographer Krylov (2010) argued that territorial identity is a complex of individual or collective representations, originating from the individual or collective (shared) mental attachments to a certain territory and/or relevant territorial community, associated with the process of local specificity interpretation. According to Krylov, territorial identity consists in the objectification of regional characteristics in the images, symbols and myths shared and reproduced by members of the local community. More often, however, territorial identity is regarded simply as an identification that links individual or community with its own living space (Tuan, 1974; Caldo, 1996). Paasi (1986) distinguishes between properly regional (territorial) identity, conceptualised as a sense of belonging/attachment to region/place, and identity of a region, being a set of its typical (or even unique) characteristics. Thus, the definition of Krylov is based on the previous definitions (including that of Paasi) but elaborates them in a more detailed fashion.

Territorial identity develops through close physical and mental connection with the place, including involvement of a person in spatial transformations (Relph, 1976). Significant determinants of territorial identity are emotional bonds with a given place, surrounding landscape, local community, material and spiritual cultural products, as well as broadly understood cultural heritage. It is common to suggest that regional identity is oriented towards the perceived past (Hague, 2005). In most cases, the concepts of "territorial identity", "spatial identity" and "regional identity", as encountered in the scientific literature, may be regarded as approximate synonyms.

In debating the role of territorial identity in Ukraine, it should be noted that we are talking about one of the largest European countries with a diversified territory in terms of landscape, political history and cultural conditions. This has resulted in the formation of a variety of historical regions, and most of them have, in due time, existed as the administrative units. These regions are characterised by a greater or lesser spatial homogeneity of landscape, cultural traits, economic specialisation and administrative sub-ordinance, which could result in strong regionalism (Keating, 1998, 2004). In Socialist countries, however, territorial division rarely reflected historical or cultural ties; on the contrary, it was drawn with the aim of creating a strongly centralised state, ignoring cultural differences (Yoder, 2003), and Ukraine is not an exception: old historical regions were split apart into modern administrative oblasts. Historical regions continued to exist in common memory, however. For example, in Poland where the state of affairs did not favour the development of any forms of local or regional identity, regional differences have always existed, although their importance has diminished as a result of large internal migration waves and population mixing (Wódz, 1995). Similarly, in Lithuania centralised management was dominant, and this prevented the development of local self-government and community traditions, the solidarity of the population declined and indifference to public affairs increased (Zigiene, 2013). Paasi (2002) argues that regional consciousness has no necessary relations to administrative lines drawn by governments.

After the collapse of the Soviet Union, Ukraine faced a process of strengthening regional identities that posed challenges for successful national development. The first challenge was political polarisation (Arel, 1995): the tumultuous events of the Orange Revolution (2004–2005) and especially the Revolution of Dignity (2013–2014) were its most noticeable consequences. For historical reasons, different parts of the country mentally gravitated toward different geopolitical formations. The annexation of the Crimea and the military-political conflict in the Donbas, lasting since 2014, although inspired by outside intervention, had, in fact, deep inner grounds: the weakening of national Ukrainian identity in favour of a regional identity and/or a strong mental attraction to Russia. On the other hand, these events occasioned both nation building and the revival of regional consciousness in Western and Central Ukraine.

Today, Ukrainian political elites have common concerns related to the possible creation of large administrative units based on historical regions: they fear the possibility of concentrating a large amount of resources that would push regional leaders to support for federalisation. Yet, actual or perceived territorial divisions are the basis for the spatial compartmentalisation of issues and problems ranging from the political to the cultural (Murphy, 1989). Another challenge is the high level of paternalism and low engagement of people in territorial development. For example, the goal of the on-going decentralisation reform is the transfer of resources and powers to the level of the territorial community, which envisages the ability (and the duty) of the territorial communities independently to elaborate a development strategy. In the vast majority of newly- created communities, however, both ordinary people and the local administration are not prepared to take on this responsibility. Instead, they expect the government to issue a ready-made territorial development strategy for each community. Therefore, the establishment of capable and stable territorial units was a challenge for most Central and Eastern European countries.

The Polish experience is perceived as inspiring in Ukraine, even though the Polish reform was carried out rapidly and centrally (Kulesza, 2002; Bafoil, 2010). On the contrary, decentralisation reform in Ukraine (at the current stage) is implemented on a voluntary basis. Thus, the experiences of Latvia and Estonia, where the reform took a very long period of time and had many faults, connected, *inter alia*, with the lack of readiness of people to take part in territorial development, should be strongly appreciated (Vanags, 2005). Negative public perceptions of the current administrative division may only exacerbate the problem: people with different views on the future hardly can achieve a common strategic vision. Some developed common territorial identity, however, may facilitate the acceptance of administrative units and the engagement of local residents in regional development (Jordan, 2003).

Territorial innovation, as Pollice (2003) argues, is successful when it comprises the results of choices shared by the local community and the authorities that govern the territory. Well-developed territorial identification and an emphasis on regional specifics may stimulate the inhabitants of problematic regions to be more active, both economically and socially (Chromý, Janů, 2003). Raagmaa (2002) offers sociological evidence that because of the common values

shared by the majority in a regional community, the process of regional re-institutionalisation and implementation of important (although quite painful) reforms can be carried out more effectively. In addition, he argues that a developed territorial identity has a positive effect on the implementation of reforms, the demographic and migration situation, as well as labour productivity, and therefore it can be considered as a tool for territorial planning, contributing to institution-building and innovative regional development. There are further opinions that territorial identity is the product of and a factor in regional institutionalisation, and therefore may be considered to be the basis for regional development (Hudson, 2005; Zimmerbauer, 2011). In Finland, even a relatively open and ambiguous historical identity of its provinces has not prevented the use of identity discourse in strategic long-term plans drawn up by the regional councils (Paasi and Zimmerbauer, 2011).

Some geographers from post-Soviet countries go further in theoretical speculation and argue that the spatial pattern of territorial identity should be regarded as the basis for the territorial organisation of society, and therefore must be considered when making geographical zoning or even reforming the administrative division (Sharygin, 2003; Trofimov et al., 2008; Pavliuk, 2006; Smirnyagin, 2007). In Ukraine, the role of territorial identity as a factor in regional institutionalisation, regional development and spatial transformations has been specified, among others, by Musiyezdov (2007), Mikheeva (2008), Korzhov (2010), and Melnychuk et al. (2014).

Unfortunately, few scientific publications problematise territorial identity as a tool for reforming administrative divisions, as well as the consequences of administrative division changes on territorial identity. Looking at the experience of the other Central European Countries, Jordan (2003) shows that most of the NUTS-2 and NUTS-3 administrative units have some kind of coincidence with spatial patterns of regional identity, but the situation is quite different from one country to another. For example, most of the contemporary Polish voivodeships correspond to historical cultural regions or sub-regions with a certain identity and inherited names; in comparison in the Czech Republic restoration to the historical lands was avoided, even though they still have distinct identities and well-identified regional capitals. According to Paasi (2001), in some countries regions may be important in governance but culturally "thin", while in other cases regions may be understood as being deeply historical and cultural entities whose existence becomes manifest not only in identity narratives, but also in numerous social and cultural institutions.

There are some studies investigating the effect of administrative division change on local identity: for example, Pult Quaglia, 2009; Hong and Junxi, 2011. Zhu et al. (2011) found out that after the cancellation of the municipal district of Dongshan (Guangzhou) in 2005, the identity of the locals had generally been enhanced, rather than vitiated. In Ukraine, Lytvyn (2015) stated the possibility of using territorial identity for improving administrative divisions, while Nagorna (2008) discussed arguments "for" and "against" implementing the federal system in Ukraine based on regional identities. Peisakhin (2013) studied the political identity of Galician, Volhynian and Podolian Ukrainians in the former Austrian-Russian imperial borderland and presented some very valuable conclusions about possible reasons for actual differences; however, this author takes the limits of historical regions for granted, whereas our aim is to establish what the people themselves are thinking about their regional affiliation.

3. Case study region

We selected Podolia, one of the key historical regions in Ukraine, for our case study. The spatial limits of Podolia may be delineated based on different criteria: physiographical, political, ethnographic, demographic, etc. One may distinguish the core, where all criteria are satisfied, and the periphery, where only some of them are fulfilled. After considering various approaches, we decided to consider Podolia as the territorial limits of Vinnytsia, Khmelnytsky and Ternopil administrative oblasts (Fig. 1). Although this

Fig. 1: Location of the case study region
Source: authors' draft (based on an open source map)

area is marked by considerable internal differentiation in terms of both natural and cultural landscapes, it meets most of the aforementioned criteria; on the other hand, its consistency with existing administrative boundaries facilitates statistical analysis of available data and practical application of the results.

Podolia is characterised by physiographic and economic integrity but, simultaneously, by significant historical and cultural diversity. During its long history, Podolia was under the rule of different states (Kievan Rus, Principality of Galicia and Volhynia, the Grand Duchy of Lithuania, Polish-Lithuanian Commonwealth, Ukrainian Cossack State, the Ottoman Empire, the Russian Empire, Ukrainian National Republic, West Ukrainian People's Republic, Polish Republic, Soviet Union, and, finally, independent Ukraine since 1991). Podolia was divided between different states for a long time: for example, in the period 1793–1917 the territory of the modern Ternopil oblast, except for the far north, was included in the Austro-Hungarian Empire, while the rest of the oblast was part of the Russian Empire. In the period 1921–1939, modern Vinnytsia and Khmelnytskyi oblasts belonged to the Soviet Union, while Ternopil oblast was connected to the Polish Republic, etc.

Accordingly, the administrative division of Podolia has changed several times. It is worth noting that the names of several administrative units stressed the relationship with Podolia. Among them are Podolian Voivodeship (1434–1793), Bratslav Voivodeship, generally referred as Eastern Podolia (1566–1793), and the Podolian Governorate (1793–1925). Parts of the study region, however, were included in the administrative units semantically associated with other historical regions (Volhynian, Kievan, and Ruthenian voivodeships, Volhynian and Kievan governorates, etc.). The modern administrative division into oblasts and raions has continually existed since 1939. The spatial limits of the most important historical and modern administrative territorial units are shown in Figure 2.

The majority of Ukrainian geographers consider all three oblasts as the Podolian human-geographical and/or economic region. These provisions are enshrined in the current national school curriculum. Some scholars, such as Pistun and Melnychuk (2010, p. 244) and Oliynyk et al. (2015), have even proposed the creation of a single administrative Podolian region by merging Vinnytsia, Khmelnytskyi and Ternopil oblasts. In the Ukrainian media, however, the term "Podolia" often refers solely to Vinnytsia and Khmelnytskyi oblasts, while Ternopil oblast, despite its internal geographic and ethnographic diversity, is referred to as part of the Western Ukraine in general and Galicia in particular.

4. Data and methods

Several approaches to the study of the territorial identity of a population can be found in the literature. The most widespread method is a sociological survey, including mass, expert and combined studies. Mass surveys are aimed at identifying the actual territorial identity of the population and need a sufficiently large and representative sample of respondents. Expert surveys search for the opinions of local "experts", namely historians, geographers, ethnographers, politicians, economic actors, public activists, etc. They are focused on details that remain unnoticed in mass surveys (especially attitudes to neighbouring territories, characteristics of local symbols, or an understanding of the "spirit of the place", etc.) and tend to show territorial identity as it "should be" from the point of view of its most expressive and conscious carriers. In this case, questionnaires introduce more in-depth and open-ended questions, and in-depth interviews are also beneficial. Combined surveys reveal both general population opinions and the opinion of experts.

Western scientific traditions have a long experience of mass surveys used in investigating territorial identities with expressed ethno-political components, in regions such as Catalonia, Scotland, Flanders, Wallonia, Quebec, etc., using instruments such as the so-called Moreno question, hierarchical questions, intensity/frequency questions and metric scales (Melich, 1986; De Winter et al., 1998; Maddens et al., 1998; Maddens et al., 2000; Chromý and Janů, 2003; Friswoll and Rye, 2009; Chromý and Skála, 2010; Wójcik, 2013). Individual respondents are asked questions about how they relate to different (sub)-national

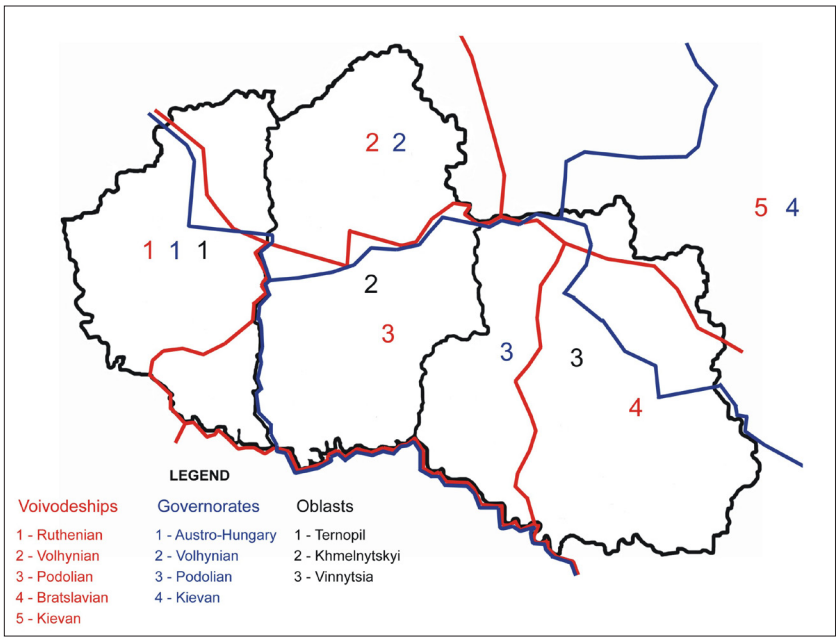

Fig. 2: Historical and modern administrative territorial units
Source: authors' interpretation of the historical record

identities. Another more comprehensive approach has been proposed by Krylov (2010), who studied the regional identities of European Russia using a large questionnaire with different blocks of questions, related to the following aspects of territorial identity: rootedness, mobility and local patriotism; reflections on local geographic specifics; community and territorial social consolidation; genealogy; the mental structuring of space, etc. Another feature of this approach is the absence of contra-posing different levels of territorial identity. Further studies of territorial identity in post-Soviet countries, in general, followed Krylov's ideas (Melnychuk and Gnatiuk, 2012; Grytsenko, 2011; Rastvorova, 2011).

A second method for this type of research is the study of territorial identity markers that is artefacts and socio-ecological factors pointing at a certain identity. Two groups of markers may be distinguished. First, there are relatively stable markers: particularities of architecture; language and customs; traditional professions and crafts; traits of the nature of the population; religious beliefs and folklore; settlement structure; macro-toponymy, etc. (Zelinsky, 1958; Shortridge and Shortridge, 1998; Weiss, 2000; Fischer, 2002). Secondly, relatively dynamic markers can be distinguished: meso- and micro-toponymy; names of enterprises and institutions; regional brands; commemorated personalities and events; the spatial behaviour of the population; spatial movement of goods and information; geography of sports fans; electoral behaviour, etc. (Shyshatskyi, 2006; Komarov, 2008; Pavliuk, 2007; Zamiatina, 2011; Melnychuk et al., 2014).

The study of spatially-anchored information flows, including official web-sites, media and social networks, is another helpful way to study territorial identity (Hale, 1984; Pavliuk, 2006; Zamiatina and Belash, 2006; Zamiatina, 2011).

For our specific case, we used a mass field survey (street interviews) of inhabitants throughout the region. The analysis presented in this paper, constitutes only a modest part of a larger comprehensive study, and follows the Krylov's approach mentioned above. The full questionnaire consisted of 40 questions designed to highlight the following aspects of 'identity': perceptions of local geographic, cultural and historical specificity; rootedness and patriotism at the local and national levels; spatial orientation and the mental structuring of geographical space; communality and territorial public self-awareness. Obviously, the complete analysis of the results goes far beyond the boundaries of this paper: from the 40 questions we have selected five items which present some direct possibility of determining the spatial pattern of territorial identity, and then relate it to the changes of administrative divisions.

The five questions are as follows:

1. Do you consider yourself …: (response options: Podolian?; Volhinian?; Galician?; Bukovinian?; Bessarabian?; Polessian?; a resident of the Middle Dnieper Region?; a resident of the Black Sea Region?; other?; none?);
2. Do you feel a special mental attitude to….: (response options: Vinnytsia?; Khmelnytskyi?; Ternopil?);
3. What city do you consider to be the central one for the area where you live? (open-ended response);
4. What areas (oblasts or their parts) do you think are composing Podolia? (open-ended response);
5. Please, indicate a place where, in your opinion, the heart of Ukraine is located? (open-ended response).

The survey was conducted from December 2013 to April 2014. A total of 1,223 questionnaires were collected and qualified for the following research procedures: in Vinnytsia oblast, 658; in Khmelnytskyi oblast, 313; and in Ternopil oblast, 252. We considered the administrative raions as basic spatial units for both the survey and subsequent calculations: the cities of regional subordination that are not capitals of administrative raions were considered as a single unit, together with the neighbouring administrative raion. Three oblast capitals were considered as separate spatial units. In each administrative raion, except those of the oblast capitals, we selected two (2) settlements, one of which was the administrative capital of the given raion (city or town), and another was a randomly selected village, located no less than 5 km from the raion capital. In the raion capital we surveyed 6 respondents: 3 males and 3 females from each age group (≤ 30; 31–60; > 60). In the village, we surveyed 9 respondents: 3 males and 3 females from each age group, plus 1 additional male respondent and 2 additional female respondents from the oldest age group (> 60). In the raions of the oblast capitals, we randomly selected two villages and carried out a survey according to the procedures outlined above. The oblast capitals have the same proportion of respondents by age and sex as raion capitals, but the number of respondents was enlarged due to the larger possibilities of making a large-scale survey; also, this allowed receiving more precise data for oblast capitals.

This approach made it possible to balance, in general, the sample of each basic spatial unit by the age and sex of respondents, to reckon with opinions both from urban and rural localities, and to evenly cover the studied region with survey points. To correct the calculation of percentages for administrative oblasts, we multiplied the number of responses by weighting factors calculated as a proportion of the population in given administrative division to the number of respondents from this administrative division.

This applied method has certain limitations that cannot be omitted in this methodological discussion. Some of them were already discussed in the relevant literature. Deschouwer et al. (2015) point out three assumptions of the typical identity survey to reckon with, while interpreting the results. The first one is the assumption of a homogenous meaning of the identities: asking the respondents about a certain identity, we do not offer them the possibility to say what exactly it means for them. The second one is that the feelings of belonging are independent from the context. The third one is that the categories offered to the respondents are meaningful. To summarise, specific categories and options used in such surveys contain assumptions about identities, clamping the respondents into certain frames of understanding.

Another question is the representativeness of the sample. Using the afore-mentioned technique to select the respondent, we looked at the average parameters and assumed that the basic demography and proportions of urban and rural population are equal in all administrative raions. In fact, the real raions differ significantly in terms of urbanisation. It should also be noted that the urban population has a much higher level of spatial mobility than the rural one. Although the studied region is more or less homogeneous in terms of the age and sex structure of the population, the Ternopil oblast had a relatively larger share of males and people under the age of 18. Some bias may be caused by the fact that the level of education,

as well as professional activities, were not taken into account; however, it is well-known that these personal characteristics may seriously affect self-identification and understanding of the region. Finally, the survey was conducted in a turbulent period of Ukrainian history, and this could affect the responses.

5. Results and discussion

5.1 Territorial identities: Spatial patterns, persistence, variability and interaction

A large majority of respondents indexed their identity with one of the three historical regions: Podolia, Galicia and Volhynia, although 9.3% noted an absence of identification with any of the historical regions. The map (Fig. 3) demonstrates the structure of respondents by their identity with historical regions (pie-charts), as well as groups and sub-groups of administrative units with special proportions of these identities (colours). The next map (Fig. 4) shows the structure of answers to the question about the location of the "heart of Ukraine" (pie-charts), as well as the groups of administrative raions having similar structures of responses (colours). An overwhelming majority of respondents preferred two cities, Kyiv and Lviv, representing the two macro-regions of the country, Central and Western Ukraine respectively. The city of Kamianets-Podilskyi, the historical Podolian capital, was chosen by only 5.8% of respondents. In all three administrative oblasts, the strongest self-identification with the respective oblast and/or its capital is observed around the oblast capital and decreases to its periphery. But, in Vinnytsia oblast, the strength of self-identification with its oblast is reduced also in the semi-periphery due to well-developed sub-regional identities around the largest second-order towns. In addition, the reported identity with an administrative oblast decreases in areas where the identity with an historical region differs from the dominant identity with an historical region in a given respective oblast. The survey revealed certain sub-regional identities, developed around second-order towns in all three studied oblasts (Fig. 5). The pattern of these identities demonstrates a good correlation with the hierarchical structure of the regional urban network.

The results show that, despite the discontinued existence of the former administrative units, residents' perceived identities with historical regions are well-preserved even at the present. Moreover, the spatial patterns of modern territorial identities display a surprisingly strong relationship with former administrative units (including the Russian Empire governorates, abolished in 1925, and the voivodeships of the Polish-Lithuanian Commonwealth, cancelled over 200 years ago!). The historical borders between these administrative units, as well as between states, can be traced easily on the maps (compare Fig. 2 with Figs. 3 and 4): for example, areas where respondents self-identify with Volhynia, once constituted a part of Volhynia Voivodeship and Volhynia Governorate. The area of identity with Galicia clearly coincides with Ruthenian Voivodeship. The area where people have the strongest self-identification with Podolia and attribute symbolic importance to Kamianets-Podilskyi, the former Podolian capital, roughly coincides with the borders of the former Podolian Voivodeship. It is easy to see some weakening of identity with Podolia within the former Bratslav Voivodeship, compared with the areas of the former Podolian Voivodeship – despite the fact that both voivodeships usually are referred as parts of historical Podolia. Also, people living within the former Bratslav Voivodeship do not attribute so much symbolic importance to Kamianets-Podilskyi as do people living within the former Podolian Voivodeship. Thus, we may conclude that identities with historical regions, as well as mental patterns shaped by the former administrative divisions, are very stable in this part of Ukraine. This supports the arguments of Wodz (1995) and Paasi (2002) on the persistence of historical informal regions in the minds of people.

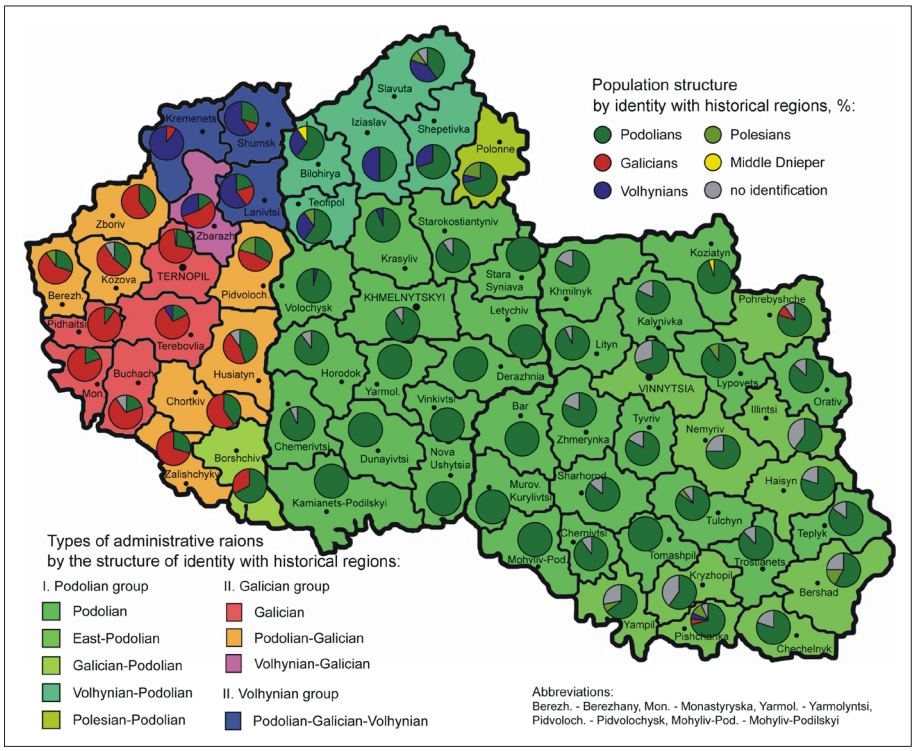

Fig. 3: Spatial pattern of identity with historical regions
Source: authors' survey, 2013–2014

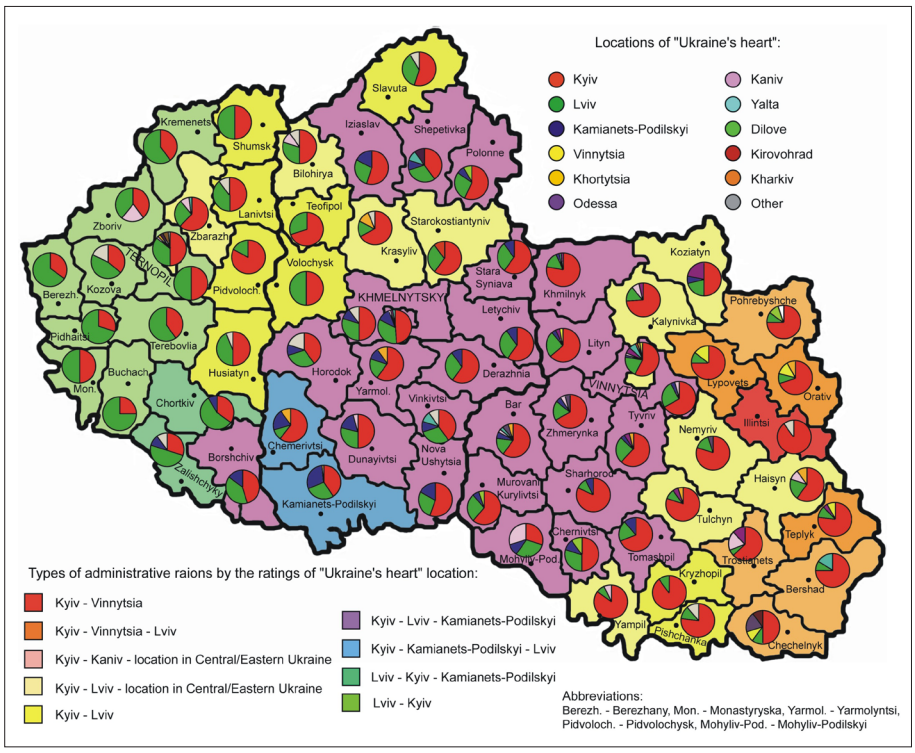

Fig. 4: Location of the "Heart of Ukraine": Respondents' perceptions
Source: authors' survey, 2013–2014

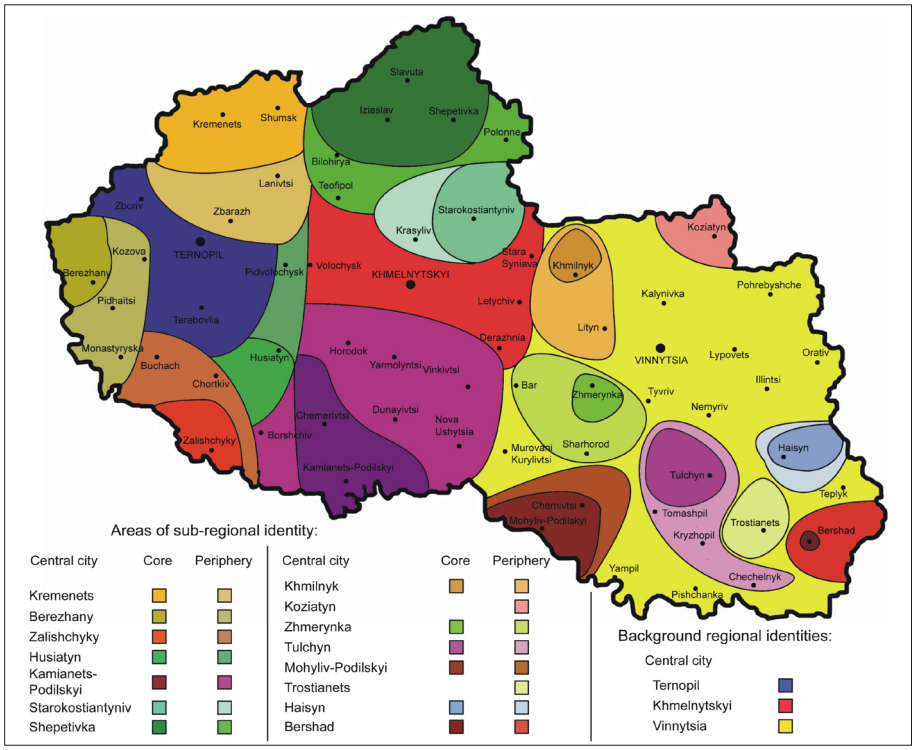

Fig. 5: Spatial pattern of sub-regional identity
Source: authors' survey, 2013–2014

The so-called "old" territorial identities, however, are not absolutely constant and may transform under the influence of new administrative divisions. The current predominance of identity with Podolia in the north of Khmelnytskyi oblast (within historical Volhynia) and in the north-east of Vinnytsia oblast (within historical Middle Dnieper Region), is a spectacular example of this phenomenon. In addition, to a certain extent Podolian identity has spread throughout the entire Ternopil oblast, although only its south-eastern part belonged to historic Podolia. This has happened because these two oblasts are traditionally positioned as Podolian ones in public discourse (including the media, as well as in educational and popular historical and geographical literature), while Ternopil oblast is referred to as Podolia in

school handbooks. This stimulates the inhabitants of these oblasts, even living outside historical Podolia, to identify with this region. Here we may trace a positive feedback between the two identities: for example, a resident of the historical Middle Dnieper Region may argue in the following way:

> "I am a resident of Vinnytsia oblast; Vinnytsia oblast is one of the Podolian oblasts; therefore, I am Podolian".

In Ternopil oblast, however, none of the identities with historical regions strongly dominates, and the oblast capital is located in its "Galician" part – therefore the oblast is not perceived as "typically Podolian", and the positive relationship described above does not work.

On the other hand, "old" identities may influence the spatial pattern of "new" identities. This is illustrated by the northern parts of Khmelnytskyi and Ternopil oblasts. In both cases, the identity with their own oblasts is weakened because of the strong identities with historic Volhynia. Moreover, areas of sub-regional identity around Shepetivka and Kremenets (Fig. 5) also coincide with historic Volhynia. People may reason something like this:

> "I am Volhynian, and this is important for me; Khmelnytskyi oblast is widely referred as a Podolian one; therefore, I would like not to identify myself with Khmelnytskyi oblast, but I would like to identify with Shepetivka, because this is the largest city in Volhynian north of Khmelnytskyi oblast".

Another example is strong self-identification with Khmelnytskyi oblast in the south-eastern corner of Ternopil oblast, because the majority of people there feel themselves to be Podolians. This situation is contrary to that described above, but both of them are possible: the actual way of thinking depends on what identity is considered to be more important and therefore constitutes a starting point of argument. Empirical evidence shows that people are more likely to identify them initially with oblasts as "new" administrative units, however, which have clear boundaries and practical importance in everyday activities.

Additionally, we applied analysis of variance (main-effect ANOVA; software: Statistica 10.0) to test the relationship between different administrative divisions (former and modern) and contemporary territorial identity with historical regions. Existing administrative raions were determined to be the cases. The list of three independent variables (factors) includes the location of a certain administrative raion with respect to:

1. the voivodeships of the Polish-Lithuanian Commonwealth (Podolian, Bratslavian, Volhynian, Kyivan, Ruthenian);
2. the governorates of the Russian Empire (Podolian, Volhynian, Kyivan, territory of Austro-Hungarian Empire); and
3. the contemporary oblasts (Vinnytsia, Khmelnytskyi, Ternopil).

Dependent variables were the following:

1. proportion of respondents, self-identifying with each historical region (Podolia, Galicia, Volhynia);
2. proportion of respondents considering each of the cities (Kyiv, Lviv, Kamianets-Podilskyi).

The results showed that modern administrative oblasts have the greatest impact on the spatial distribution of respondents self-identifying with Podolia; the impact of voivodeships in this case is smaller, but still significant, while the impact of governorates is insignificant. The spatial distribution of people self-identifying with Volhynia, however, is determined primarily by the configuration of the former Volhynian Governorate, while the distribution of contemporary Galicians is specified principally by the configuration of the former Austro-Hungarian Empire, i.e. by the state borders rather than the limits of administrative units. The special mental attitude to Kamianets-Podilskyi as the "heart of Ukraine" is defined primarily by the borders of voivodeships, while in case of Lviv modern oblast boundaries are significant, and in the case of Kyiv none of the factors are significant. These findings indicate that identity with Podolia is no longer limited to historical limits of the respective region and is spreading far beyond, while people, considering themselves as Podolians, have different mental attitudes (e.g. Kamianets-Podilskyi is no longer the incontestable symbolic place for inhabitants of Eastern Podolia).

Thus, evidence from Ukraine indicates that historical identities are sufficiently stable and need very long time intervals (at least several decades, but usually centuries) for crucial changes, except for situations associated with a total change in the population due for example to military actions, deportation, etc. Those already-shaped territorial identities, however, have a great potential for variability and further modification through interaction with "new" identities generated by changes in administrative divisions. With time, the spatial patterns of "old" and "new" identities are mutually adjusted; this process results in the formation of new "hybrid" identities and regions, inheriting several features from both "old" and "new" predecessors. This kind of regional institutionalisation conforms to Paasi's analytical model (2003) as it appears to be continuous and cyclical, so leading to the formation of a more or less stable regional core (both territorial and symbolic) and dynamic periphery.

Odehnal and Šerý (2012) underline the significance of regional names, because the use of a specific name in communication assumes that the participants understand the name and know what exactly is hidden under that name, even if the name is different from the official one, e.g. administrative or political. This study shows that the names of the regions play the role of a conservative backbone in the process of the continuous reconfiguration of perceived regions. The names and nomenclature of the basic historical regions remain unchanged from the time of their first origin, but their spatial borders are understood differently over time. In fact, self-identification with the names of historical regions constitutes the basis for regional identity in this part of Ukraine, but at different times (and in the same epoch – for different people) the concepts of these basic regions have quite different meanings. This suggests that the list of historical regions, formed in the 14–16th centuries, has fixed a more or less stable set of possible regional identity options, but the real territorial coverage of these regions may vary greatly over time. It should be underlined that these large-scale changes are mediated by the emergence of later administrative-territorial units and identities with them. This correlates with the results of Chromý at al. (2004), which concluded that traditional historical regions persist for a long time in the minds of people, and that their centres are clear but the borderline is fuzzy and often equated with administrative boundaries. The factual boundaries play an important role in shaping regional identity because they help people define and perceive "their" region (Vaishar and Zapletalová, 2016).

Another topic for discussion flowing from this research is the change in the nature of identity with historical regions in contemporary Ukraine. In the past, this identity was shaped by the ethnographic traits of local populations, including local dialect, mode of dressing, housing, folklore, etc. Nowadays, all of these elements of self-identification do retain some importance for rural populations, but urban residents have more or less unified cultural backgrounds. For example, the typical Podolians and Galicians may speak the same standard language, wear the same clothes bought in international retail chains, live in standardised Soviet-era blocks of flats and almost never take part in local folk customs. Thus, for the majority of people today identity with historical regions is not taken for granted, but constitutes a free choice based on information obtained from different sources, from school education to the media. In some cases, political preferences are also important for taking decisions. For example, a resident of Ternopil, supporting a far-right party, has a larger probability for self-identification with Galicia rather than Podolia, because right-wing nationalism is more typical in Galicia. Another important factor is religion, as Greek-Catholic residents of the north of Ternopil oblast have more grounds to identify with Galicia (traditionally a Greek-Catholic region), while Orthodox residents have more reasons to associate themselves with Volhynia (traditionally an Orthodox region).

Therefore, the majority of contemporary residents seem to have a kind of "hybrid" territorial identity, combining both old and new elements. The ingredients of such a "hybrid" identity may be some mixture of ethnographic traits, actual self-identification with and mental attachment to certain region(s), a list of personally-significant (valuable) places, electoral preferences and certain views of life in geopolitical terms, the choice of religion (or, at least, attitude to different religious denominations), etc. All these items can be mixed, often in a rather bizarre and confusing form: for example, a person may have traditional ethnographic traits and religion inherited from the one historical region but, simultaneously, strong self-identification with another historical region, including electoral and geopolitical preferences. Also, it is possible that a person could have self-identification with multiple regions simultaneously. The data point to a rather continuous reconfiguration of the existing regions rather than their erosion and disappearance; however, we can assume that territorial identity was more clearly defined and spatially fixed in the observed past than the present. These findings are in line with other evidence about the multiplicity and coexistence of regional identities (Ivic, 2010), as well as the absence of the single identity narrative in a region, but often an overlapping of political and cultural identities (Kaplan, 2000).

5.2 Territorial identity and administrative reform

The spatial pattern of sub-regional identity may be applied in dividing the study region into new larger raions (counties). This process is supposed to be completely 'painless' as these identities do not imply any political connotations and generally reflect public views on the territorial gravitation to sub-regional functional core areas. In addition, sub-regional identity should be taken into account when determining the boundaries of territorial communities: if people have perceptual attitudes to the different sub-regional centres, the area should be divided into different communities, and vice versa. Moreover, this step, with few exceptions, does not require changes in oblast boundaries.

The next, more radical step may include changes to oblast boundaries based on identities with historical regions, to make administrative units more uniform in terms of territorial identity. Are these changes able to be recommended, what are any possible threats, and is there any reasonable alternative? There are arguments on both sides.

On the one hand, according to Boisen et al. (2011) and Terlouw (2012), specific regional identity has become a central concept for promoting local competitiveness: government officials, policy makers and various commercial and non-commercial stakeholders are convinced that a coherent, strong and attractive place identity will help to promote the economic development of their city, region and/or country.

Paradoxically, territorial identity becomes even more important in these times of globalisation and neoliberal ideologies: regions need to mobilise support from regional stakeholders, such as municipalities, local companies and inhabitants. While traditional administrative regions are based on hierarchical power relations, the new forms of regional cooperation depend more on voluntary collaboration and coalition building; therefore, communicating a distinct regional identity and spatial imaginary to stakeholders outside the administration becomes particularly important for generating support for any regional development strategy (Healy, 2006; MacLeod, 2001). Paasi (1986) sees the name of the region as the most important symbol forcing the region to constantly institutionalise and reproduce itself. Therefore, the name of a particular region acts as an important tool for identifying individuals, who are not only able to name their region but also to identify with the community inhabiting the region.

On the other hand, the formation of hybrid identities, partially hidden behind the old names of traditional historical regions, may display the gradual transition from traditional and historically-rooted "thick" identities to more transitory and economically-anchored "thin" regional identities. These new identities may compete or build on older more traditional regional identities, but sometimes may also overlap and reinforce each other (Terlouw, 2009). Moreover, hybrid regional identities combining a locally-specific mix of 'thick' and 'thin' elements and linking up with regional identities at other relevant scales, appear to be the most effective regional identities for regional administrations facing the challenges of both globalisation and the decline in collective identities, such that regions can use different forms of identity for different groups of stakeholders (Terlouw, 2012; Hofstede, 2014). Boelens et al. (2017) consider regions as even fundamentally scale-less instruments, confronting problems and challenges that are shared by multiple central actors, independent of territorial boundaries.

In some studied cases, regional administrations implemented selective downloading of characteristics from the nations and regions to which they belong ("thick" elements) and the uploading of specific qualities from the cities and areas within their boundaries ("thin" elements) (Terlouw and van Gorp, 2014). In other cases, however, the secondary identity of a municipality is too weak and indistinct to support the primary local identities (Terlouw, 2016). Thus, the formation of hybrid identities, which is more or less typical for this case study region, opens up new opportunities for effective territorial governance, when successful branding of administrative regions and the consolidation of stakeholders do not need a strong correlation with historical identities.

Thinking about the further evolution of "mutated" historical identities and identities with the contemporary administrative oblasts, we may point out two different regional contexts. The first possibility is when an administrative oblast is strongly associated in public discourse with a certain historical region. Therefore, it is possible that over time the identity with the historical regions become almost homogeneous. For example, in Vinnytsia oblast this process has already finished, and we can assume that in a few decades the majority of residents in the northern part of Khmelnytskyi oblast will identify themselves with Podolia. Therefore, the homogenisation of administrative units in terms of their identity with historical regions, which now requires a radical change of oblast boundaries, will eventually happen without external deliberate intervention. Ternopil oblast represents another possibility, i.e. a territory without one dominating identity with an historical region and a powerful internal dividing factor of religion. In these circumstances, it is more likely that existing differences in self-identification with historical regions will be long-lasting. Consequently, changes in the limits of existing oblasts may be a more effective solution in this case.

Concerning the option of creating larger administrative regions to replace the existing oblasts, it is important to note that such a solution will lead frequently to competition between the former oblast capitals for the right to be the capital of the newly-created administrative unit. For example in this case study, simultaneously three cities could present themselves as the capital of Podolia. It should be emphasised that Podolians, by self-identification, living in different oblasts, have different ideas about any possible Podolian capital. Consequently, a Podolian administrative region, if created, will have internal disintegrative factors from the very beginning.

With regard to possible ethnic cleansing resulting from such a reform, we should mention that Ukraine is not such a case. This follows from the evidence that people identifying themselves with different historical regions do not constitute separate ethnic groups. Certainly, they present some deviations in local or regional cultural traits from the national "standard", as well as specific religious or political preferences, but these factors have never been crucial for mutual understanding as a single ethnicity. For example, Western Ukraine, including Galicia, has been almost constantly politically divided from the rest of the Ukrainian lands since the 12th century, and today differs in traditions, dialect, religion and political preferences; however, despite all these factors, the dramatic history of Ukraine presents no examples of confrontation between residents of Western Ukraine and other Ukrainian regions specifically on these grounds, and the ideas about a separate Galician ethnicity is subject to speculation only from time to time by extremely marginal politicians. The only possible "threat" involved may be the unification of the population on the basis of identity with historical regions within the newly-formed administrative units. But the very same processes are already happening within currently existing oblasts, as shown above.

Therefore, such unification is inevitable: the question here is to choose the better option between the two extremes:

1. the unification of identity within the existing oblasts created during the Soviet regime, without reference to local geography and history; and
2. the unification of identity within slightly adjusted historical regions, characterised also by high physiographic and economic homogeneity.

In fact, the first option implies the creation of fundamentally new informal regions, having only common names with their historic predecessors, while the latter option implies the revival of historical memory. Theoretically, both ways are possible and may have some risks: the first option provides for inconsistency between historical narratives (legends, heroes, valuable places) and the actual contour of things, while the second option may threaten the stability and integrity of the existing administrative unit.

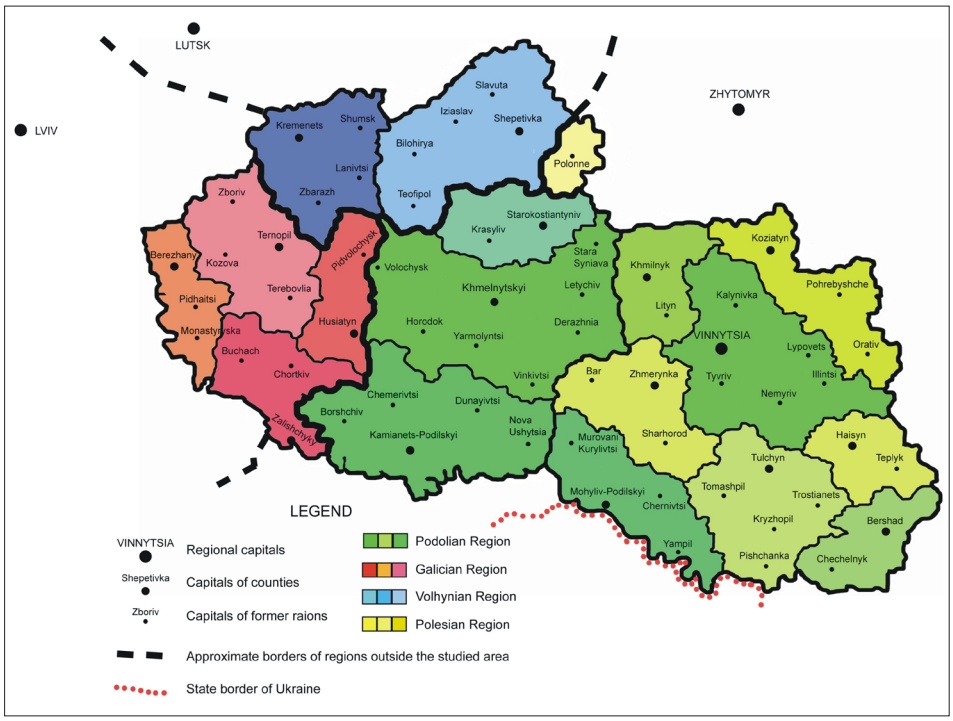

Fig. 6: Proposed administrative division of the study region
Source: authors' elaboration

Thus, we cannot claim that an administrative division, based solely on the identity with historical regions, is the best one for the study region. Depending on the government-selected scenario of reform, however, it is possible to give a series of practical recommendations. If the unitary structure of the state is a fundamental provision, then the oblasts will remain the basic administrative units responsible for shaping territorial identities, and therefore only slight partial refinement of the oblast boundaries is advisable (e.g. in the south-eastern corner of Ternopil oblast, which may be joined to Khmelnytskyi oblast). But, if it comes to a federal system (as in Germany) or a significant increase in the level of regional autonomy (as in Spain), it is advisable to ensure the formation of large, economically viable regions with common public values and prospects about future development. In this case, territorial identity with historical regions may be a "good tip" for reformers. The map (Fig. 6) represents one of the possible solutions, providing for a three-level administrative division: newly-created regions (possibly with federal rights), counties and communities (the latter are not displayed on the map).

6. Conclusions

A large majority of the surveyed inhabitants have developed strong identification with both historical regions and modern administrative units. Existing hierarchical levels of territorial identity are interrelated and cannot be considered separately, since changes at one level automatically trigger changes at another. It is very likely that spatial patterns of territorial identities of different hierarchical levels and of different origins become mutually adjusted with time. This process leads to the formation of new hybrid regions (stable historical core, where "old" and "new" identities act in a coherent manner, and a more dynamic periphery, where these identities are contesting each other), as well as hybrid identities, integrating "thick" and "thin" elements.

Thus, it seems that in Ukraine territorial identity tends to play a major role in the modern regionalisation process, in line with theories of new regionalism, considering the region not as a given essence or a historical relic, but as a social construction that is constantly (re)created and changed (Keating, 1998). Revitalisation of the "old" identities, related to the historical regions, and their interaction with "new" identities, developing on the basis of the modern administrative units, may be a good illustration of the concept of dynamic regional institutionalisation, as proposed by Paasi (1986; 2003).

The results suggest that the spatial pattern of territorial identity (including identity with historical regions) can be used to make territorial administrative units more consistent, stable and understandable for people. It is impossible, however, to propose one common solution for all national and regional contexts: specific scientific recommendations should be based on a scrutinised study of local specifics. Also, flexible regions, consisting of heterogeneous identity groups and multiple power structures, may be more economically, socially and culturally effective entities than traditional regions. This does not mean neglecting any territorial identities, but rather a shift to 'soft' identities with more "thin" elements. Therefore, any blind redesigning of the spatial administrative structure according to models dated from hundreds of years ago, is just as unacceptable as a complete disregard of the historical background.

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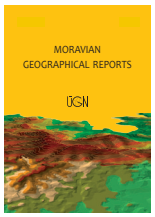

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Visibility and perception analysis of city monuments: The case of Bratislava city centre (Slovakia)

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Abstract

City monuments attract tourists, especially at places with efficient viewpoints. The conditions of visibility of eight historical monuments in the city of Bratislava were evaluated using GIS on a 3D landscape, employing the criteria of distance, impressiveness, size and the number of visible monuments. The visual quality of 15 selected viewpoints was verified by surveying more than 300 respondents about their views of the monuments from similar locations. These approaches allow us to assess the conformity of visual quality analysis conducted in objective and subjective ways. The most attractive viewpoints ranked by observers were remote from the historic town and provided views of several monuments, as well as a comprehensive panoramic view of the centre of Bratislava. The approaches to assessing visual quality analysis presented in this study represent a comprehensive way of defining and verifying which places are the best for effective sightseeing of a city's monuments.

Keywords: *visibility analysis; visitor perceptions; viewpoints attractiveness assessments; sightseeing guidance; Bratislava monuments, Slovakia*

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1. Introduction

The image of a city held by a broad range of visitors such as tourists and business persons, is a phenomenon of interest to those visiting any given city. Monuments are important for a city's image, as they attract tourists (Zemła, 2016). Thus, the efficient organisation of movement and orientation in a city is a primary concern of decision makers such as city planners and architects, as well as tourists and tourist guides. The rapid growth of urban tourism has led to an increasing demand to develop measures that cope better with a large number of visitors (Bauder and Freytag, 2015). Convenient sightseeing in cities can be oriented to selected monuments and landmarks or to objects related to urban tourism (Ashworth and Page, 2011; Edwards et al., 2008; Garnero and Fabrizio, 2015). Thus, the planning of sightseeing in a city raises the question of how to find a convenient sightseeing route and the best places for seeing the monuments (Di Lorenzo et al., 2012).

Perceptions of an urban environment are multi-dimensional, as they depend on the individualities of observers, inhabitants and tourists – subjects, in the most general sense. Compiling mental maps of differentiated visual quality by defining how a city's inhabitants perceive the city's main visual elements is one of the most influential approaches in the analysis of city perceptions (Lynch, 1960). Regarding selected American cities, Lynch (1960) showed that although individual differences in perception are psychologically interesting, there is a prevailing general image common to the majority of a city's inhabitants. The inhabitants' shared evaluation of – or collective agreement about – the city's visual quality was determined by "the interaction of a single physical reality, a common culture, and a basic physiological nature" (Lynch, 1960, p. 7). Lynch (1960) suggested accepting some preconditions for agreement in search of the visual quality of the city or environment, including the city's legibility of a constructed (physical) context and the imageability of the city.

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According to Morello and Ratti (2009), the differences are as follows: legibility is the clarity of the cityscape, and imageability is that quality in a physical object that gives it a high probability of evoking a strong image in any given observer. Dalton and Bafna (2003) use visual perception analysis to distinguish between imageability and intelligibility, highlighting the importance of the subject/observer's visual perception. Put simply, imageability and intelligibility refer to the sequence of an observer's analysis of the image of a city, while legibility can be assessed by the primary visual perception of the physical condition of a city's monuments, connected with the analysis of visibility and viewshed. The physical state of a city as a primary object of visual perception can be assessed by objective criteria – in architecture (Benedikt, 1979; Rød and van der Meer, 2009) or in city planning (Batty, 2001), for example – to find the best places (points) to view selected monuments. An objective approach takes into account general, conventional knowledge of visual perception (Granö, 1929; Bell, 1999; Daniel, 2001; Sevenant and Antrop, 2007), using the conceptual foundations and synergetic tools of Geographic Information Systems (GIS) to analyse visibility and the visual qualities of a city (Nijhuis et al., 2011a; Van Lammeren, 2011; Garnero and Fabrizio, 2015; Fisher-Gewirtzman, 2016; Lin et al., 2017).

Is the selection of these viewpoints in terms of sightseeing trips sufficient, or is further evaluation required? These viewpoints should be analysed from the viewer's position in terms of visibility conditions and as a reflection of the viewer's (subject's) comprehensive sensorial effects. Lothian (1999) notes that the objectivist physical paradigm was part of the philosophy of the aesthetics of landscapes, but he concludes that landscape quality and its aesthetic assets are the results of the notion that landscape quality lies in the "eyes of the beholder," a notion derived from the subjectivist psychological paradigm. In this sense, a city's image has an objectivist dimension (size, shape, arrangement of buildings and objects), the architecture of the city in a spatial extent, and at the same time a city's image also has a subjectivist dimension (genius loci, architectural style, city life and rhythm) perceived by humans (individuals) in the time horizon (see Jacobs, 2011; Fisher-Gewirtzman, 2016). In a similar fashion, Nijhuis et al. (2011a) distinguish between the physiology of perception and the psychology of perception.

We will try to present visual perceptions in terms of both objective and subjective approaches, in order to compare the computational outcomes to the perceptual responses.

2. Motives and aims

The aims of this paper are to use the aforementioned approaches in an evaluation of the visual perceptions of the monuments of Bratislava's city centre (see Fig. 1). Representative monuments are interpreted as landmarks in Bratislava that are interesting for visitors and tourists in terms of the organisation of efficient sightseeing. We designed our research in an attempt to establish a connection between the objective and subjective perspectives of experiencing urban scenic quality; namely how the external aspect (physical condition) of the urban environment (legibility) might be combined with the subject's internal reception (imageability and intelligibility) of its scenic quality (Amedeo et al., 2009). The organisation of an effective visual contact requires knowledge of the visibility of monuments in terms of their physical arrangement in a city (urban fabric) as the primary prerequisite of visual perception (visibility conditions). It is also necessary to verify the quality of the visual perception of monuments and how these options of visibility (physical arrangement of the city) eventually influence the imageability (records of perceptions) and intelligibility (interpretation) of viewers regarding their particular perceptions.

The prerequisites for the convenient visual perception of selected monuments include viewpoints (observer points), places from which the monuments are visible, the distance to the observed monument, the visible side (legible, impressive), and the visible size (area) of the monument. Based on these prerequisites, answers to the following questions are sought:

- What are the practicable viewpoints from which observers can view the monuments?
- Where are the most attractive viewpoints of a relevant part of a monument being viewed from a certain distance according to measured/objective criteria?

The attractiveness of the viewpoints is understood in the context of the visibility (visual quality) of the seen monuments. The first step for visitors to construct a cognitive image of the physical disposition of a city is to analyse the visibility and visual qualities of monuments. This cognitive image is connected with the most important sense for visual analysis – eyesight. Its assessment is based on prerequisites that are close to the objectivist or physical paradigm for the cognition of quality (Lothian, 1999). An attempt to analyse them and to answer the questions according to the "measured/objective approach" (Daniel, 2001; Oťaheľ, 1999; Nijhuis et al., 2011) are the first aim of this paper.

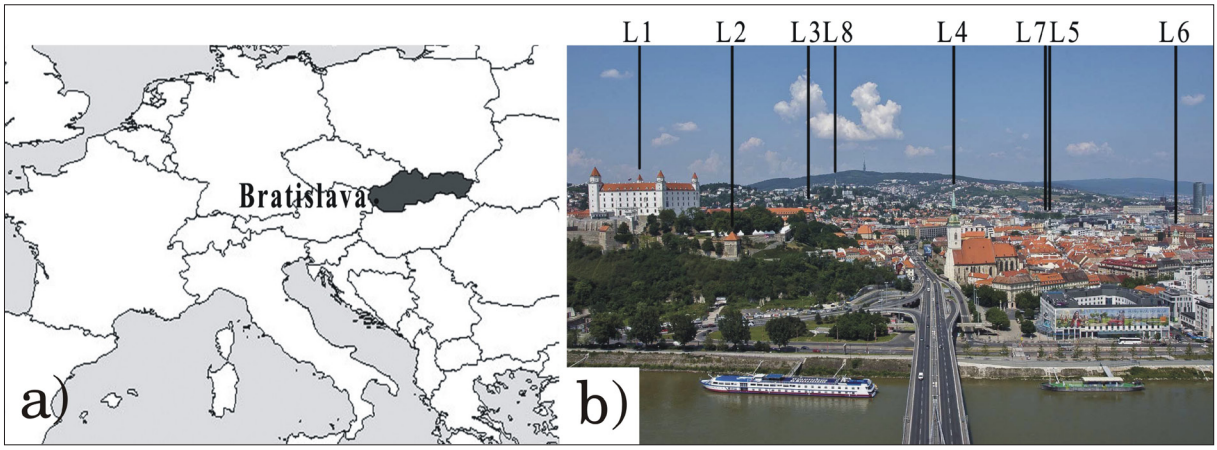

Fig. 1: Study area (a) location of Bratislava, (b) Bratislava city centre (L1–L8 landmarks, see the text)
Source: authors' elaboration; photo: J. Lacika

What are the imageability and intelligibility image of monuments and the city for visitors and inhabitants? The significance of a city's image is broader in connection with humans and their individualities, mental states, and behaviours (Bell, 1999; Daniel, 2001; Jacobs, 2011; Lothian, 1999; Nijhuis, Van Lammeren and Van der Hoeven, 2011; Saarinen, 1976), which specifically include the generally-accepted prerequisites of vision and complement the results of the visibility, viewshed, and visual quality of city analyses. They point to the significance both of the perceiving subjects and imply the inherent complexity of inhabitants and visitors, and also of the specificities of external conditions (e.g., the above-mentioned physical elements, climatic conditions, and life in the city). These are the presumptions that motivated the analysis of the image of a city's monuments in terms of comprehensive perception, which entails a "behavioural/subjective approach" (Daniel, 2001; Lothian, 1999; Nijhuis et al., 2011; Oťaheľ, 2003) because "the subjectivist paradigm judges beauty from the interpretation by the mind behind the eyes" (Lothian, 1999, p. 178).

Hence, the second aim of this study is to evaluate the replies of respondents about their subjective perceptions of the city's monuments and to find answers to the following questions:

- Are the selected monuments actually impressive?
- Which city monuments are considered impressive by observers, and what is their order of significance?
- Which monuments do observers see from the selected viewpoints and places of enquiry?
- What is the judgement of observers of objectively-assessed viewpoints about which monuments are considered most attractive, and which do they consider to be the most attractive viewpoints?

We have tried to answer the following overall research question: Is there an agreement between the results obtained by visibility or visual quality analysis, according to a measured/objective approach, and the analysis of respondent perceptions, following a behavioural/subjective approach, of the monuments of Bratislava city centre?

The third aim of this paper is more practical: to assess and compare the results of both approaches for finding the best places for sightseeing. Verification and delimitation of the best viewpoints are important prerequisites for realising effective sightseeing of selected city monuments.

3. Materials and methods

3.1 Study area

The study area in Bratislava comprises the Old Town and the wider Bratislava city centre (an area of approximately 2.5 km^2). The selected monuments are notable for their historical and cultural value and are visible from several parts of the city due to their height, which is their dominant feature (see Figs. 1 and 2): Bratislava Castle (L1); Sigismund's Gate (L2); the Luginsland Bastion (L3); St. Martin's Cathedral (L4); St. Michael's Gate (L5); Old Town Hall (L6); the Presidential (Grassalkovich) Palace (L7); and Slavín (L8). This selection also respects the general consensus that arises from the authors' experiences and an overview of materials, including leaflets, websites and tourist guides that describe the interesting monuments of Bratislava.

In addition, Bratislava is a post-socialist city, characterised by the gradual development of new lifestyles, changes in demographic structure and behaviours, social and economic changes, the polarisation of society and technological changes. The development of the service sector especially affected the city centre, where specialised shops and financial and business services are concentrated. The development and redevelopment of real estate mainly brought about the revitalisation of historical buildings and a more-efficient use of space, including through tourism (Ira, 2003). One of the most distinctive, dominant features of the city is the castle built on top of the hill located close to the city centre, along with the castle walls, gates and bastions. Outer fortifications consisted of brick walls with two gunner bastions: Luginsland and Sigismund's Gate. The historical core of the city had city walls, including St. Michael's Gate, which was constructed around the 14th century. St. Martin's Cathedral, which is a National Cultural Monument, was also built in the 14th century and became the coronation church of the kings of Hungary in the 16th century. The Old Town Hall and its tower dominate the square in the centre of the Old Town. Grassalkovich Palace, built beyond the Old Town in the 18th century, is now the seat of the President of the Slovak Republic. Another dominant monument of Bratislava's centre is the Slavín military cemetery and monument to honour the Red Army soldiers who died in the effort to liberate the city in April 1945.

3.2 Visibility analysis

Visual analysis in the domain of physiognomic landscape research starts with a digital landscape model (DLM), which includes a digital terrain model (DTM) and a model of land cover (urban fabric, vegetation, etc.). A DLM uses numerous geometric attributes and indicators to describe the visual properties of the landscape or city (e.g. Nijhuis et al., 2011; Ode et al., 2008; Roos-Klein Lankhorst et al., 2011; Van Lammeren, 2011; Garnero and Fabrizio, 2015; Fisher-Gewirtzman, 2016; Lin et al., 2017). To analyse the geometry-related spatial characteristics of visible urban environments, we defined a set of all points visible from a given point in space. A similar concept of the so-called isovist was proposed by Benedikt (1979), who used 2D and 3D city models, DTM and GIS for measuring the visibility of urban spaces (Morello and Ratti, 2009; Nijhuis, Van Lammeren and Van der Hoeven, 2011). Viewshed polygons developed through isovist allow the calculation of the element's geometric properties (e.g. area, perimeter, number of vertices) and its abstraction in 2D space (Meilinger et al., 2012). In general, the visibility of urban spaces is determined by the viewer's physical circumstances: viewpoint and visible field (viewshed), delimited isovists, and lines of sight (Fisher, 1995).

Several authors (e.g. Bishop, 2003; de Floriani et al., 1994; Kidner et al., 1997; Llobera, 2003) dealt with the application of landscape visibility and urban elements. Other examples can be found in terms of city planning (Batty, 2001), architecture (Benedikt, 1979; Rød and van der Meer, 2009), landscape planning (Fisher, 1995), tourism (Fyhri et al., 2009) and landscape aesthetics (Nijhuis, 2011; Janečková Molnárová et al., 2017). The physical disposition of the city (particularly the terrain, urban fabric, greenery, traffic signs, advertising boards, etc.) modifies the isovist field (viewshed). A visual quality analysis will be attempted in this study by defining the particular conditions and application of the above-mentioned tools.

Visibility is limited by the physical disposition (urban fabric) and terrain of the city. Another prerequisite is the analysis of the optimal distance of the view between the observer and the selected monuments (Bertamini et al., 1998). Digital datasets (EUROSENSE Ltd.) generated by methods of aerial photogrammetry were used in this study, including the stereoscopic DTM, which comprises a network of altitude points and terrain edges, a 3D digital building model comprising polygons of roofs, and orthophotomaps from 2008 with a pixel size of 25 cm. An ESRI ArcGIS desktop v9.0 with 3D Analyst extension was used in all auxiliary operations. Computation of the visibility of selected landmarks was processed in the GRASS GIS using the r.los statement (GRASS Development Team, 2010). The

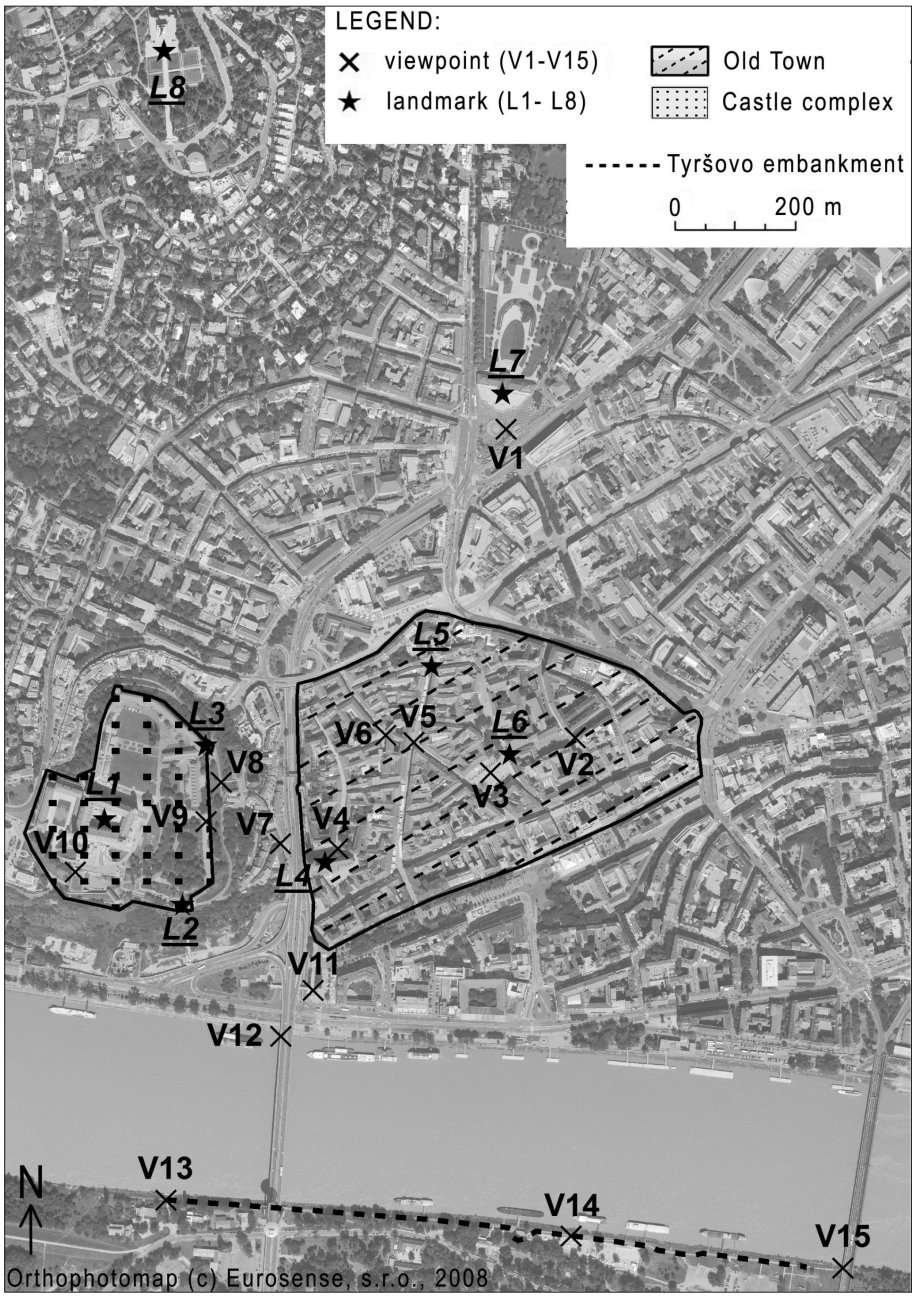

Fig. 2: Study area, location of viewpoints and landmarks
Source: authors' elaboration; Ortophotomaps 2008 © Eurosense, Ltd.

Criteria of visibility			Attractiveness of viewpoints/score
Distance from monument	Side of monument	Visible size of monument	
< 100 m	front	entire	4 – very attractive
< 100 m	rear	at least one third	3 – medium attractive
100–1,200 m	front/rear	at least one third	2 – little attractive
> 1,200 m	front/rear	at least one third	1 – very little attractive

Tab. 1: Attractiveness of viewpoints according criteria of monument visibility
Source: authors' elaboration

environment requires the adaptation of data entry to what is referred to as a 3DLM, which contains a DTM raised by 165 cm – the average level of an observer's eyes (Hlavatá and Oťaheľ, 2010) – and a 3D model of buildings. Other barriers (greenery, traffic signs, advertising billboards, etc.) were not included in the DLM or, consequently, in the visibility analysis.

The viewshed was analysed and measured in the GIS using the 3DLM, which includes the DTM and a bird's-eye model of the roofs of buildings in the city. The computation of r.los considers DLM, which takes into account only DTM and shading by existing buildings, that is, the places or viewpoints from which a walking tourist can expect to see the monuments and places from which the monuments cannot be seen. Those viewpoints were classified as uncertain viewpoints (Fig. 3). Viewpoints that were accessible to the walking public were classified as verified viewpoints (Fig. 3). Each viewpoint is represented by a 1.5×1.5 m square (approximately 2.25 m^2). The attractiveness of each selected viewpoint (places of enquiry, V1–V15, see Fig. 2) was assessed in GIS according to the criteria of the visibility of monuments (see Tab. 1) in terms of comprehensive visual perception.

The attractiveness of the viewpoints actually represents the conditions of visibility (visual quality) with respect to the contemplated monuments. This included the distance from the monument, the view of the impressive side of the monument, the visible size of the monument (Granö, 1929; Nijhuis et al., 2011; Sevenant and Antrop, 2007; Garnero and Fabrizio, 2015), and the number of visible monuments. To determine what would be considered very attractive, for example, we assessed viewpoints less than 100 m from specific locations and from which a view of an entire monument from the front (impressive) side was possible. For very attractive viewpoints, we also used the precondition of the distance of visual perception with respect to the effect of central vision, which comprises the inner 30° of an observer's vision (Spector, 1990) or the highest degree of acuity (Nijhuis et al., 2011). We found such an approach especially important in searching for an optimal proximity to the monument, depending on its height. A very attractive viewpoint would be one in which the entire monument is seen in a visual cone of 30° and the distance of optimal visual perception can be up to about 100 m (Fig. 4).

If a viewpoint satisfies the distance criterion of less than 100 m and at least one-third of the monument is seen from the rear side, then it was assessed as medium attractive. In addition, we also analysed a farther-away "landscape" of a distance of more than 1,200 metres as the limit for perceiving an object with the naked eye (Granö, 1929; Nijhuis et al., 2011; Sevenant and Antrop, 2007). If a viewpoint is at a distance of more than 100 m and less than 1,200 m and at least one-third of the monument is seen, then it was assessed as little attractive; if it is at a distance of more than 1,200 m, then it was assessed as very little attractive (Tab. 1). The individual attractiveness grades were assigned scores from 1 (very little attractive) to 4 (very attractive), and the resulting score was computed for all viewpoints (V1–V15) as the sum of multiples of the viewpoint attractiveness score (1–4) by the number of visible monuments (L1–L8).

3.3 Research on perception of a city's monuments

Human perception of a landscape or city is subjective and connected with each person's particular individuality. Nijhuis et al. (2011) differentiate the approaches to landscape perception in four paradigms and two types of models, drawing upon works by Zube et al. (1982), Lothian (1999), and Daniel (2001). The first type, called expert models, represents a typical approach to the study of human perception from the classic work of Lynch (1960). The psychophysical approach is one of three approaches of a second type of model: public preference (Nijhuis et al., 2011). This approach for testing general public perceptions of a landscape or city is a typical behavioural approach that addresses emotional, sensorial and intuitive individual perceptions and imaginations (Appleton, 1975; Cañas et al., 2009; Daniel, 2001; Lothian, 1999; Oťaheľ, 2003; Saarinen, 1976; Fisher-Gewirtzman, 2016).

Research on city perceptions with respect to visitors and inhabitants is very important for urban tourism, which is one among many social and economic forces in urban environments (Ira, 2003). As travel has grown enormously and continuously over the past 20 years in post-communist cities (Church and Coles, 2007), many urban areas are attracting more visitors. In particular, there is high demand for tourism related to the architecture, social activities, and historical and cultural monuments in cities. The visitor preferences are usually evaluated using visitor surveys, which ask tourists about what they actually do. These surveys consistently reveal the popularity of rather vaguely-articulated activities, such as "sightseeing", "wandering about", "taking in the city" and "getting among the people" (Ashworth and Page, 2011). These activities give opportunities for city-perception research, especially for finding the best places for seeing a city's monuments.

In our research, surveys were conducted in on-site interviews about visitors' perceptions. Interviews enabled us to collect data on residents' and visitors' perceptions of

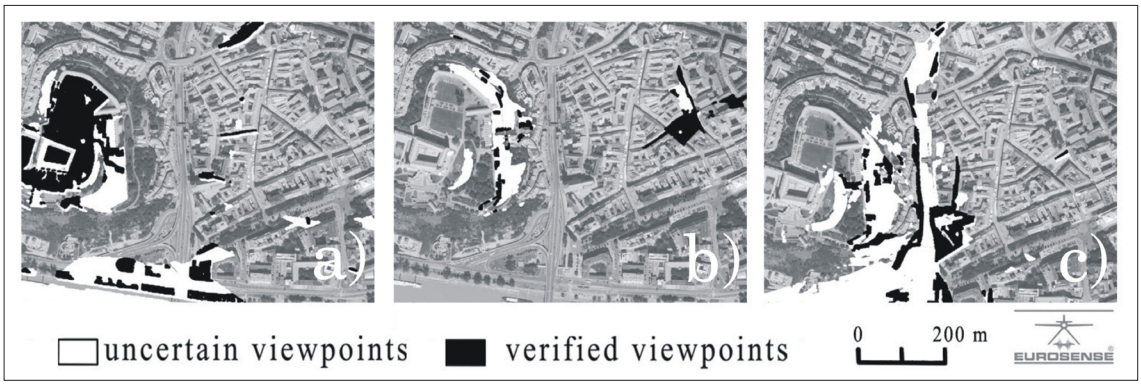

Fig. 3: Uncertain and verified viewpoints to see: (a) Bratislava Castle, (b) Old Town Hall, (c) St. Martin's Cathedral Source: authors' elaboration; Ortophotomaps 2008 © Eurosense, Ltd.

historical and cultural monuments in Bratislava. The survey included questions related to selected places and reasons for visiting, the frequency of their visits, and the attractiveness of the view of individual monuments. Visitors were also asked to rank representative locations and the attractiveness of places and monuments in the city of Bratislava (selected questions are in Tab. 2). The survey questions were developed from experience gained from focus group meetings conducted prior to designing the questionnaire. Respondents were interviewed in person. On-site surveys were conducted in the 15 selected localities near or farther away from monuments, specifically at viewpoints V1–V15 (Fig. 2: for location name see Tab. 3) in the city centre. Respondents who participated in the survey were asked to rate the attractiveness of views of the selected monuments from the selected viewpoints: little attractive, medium attractive, and very attractive. The questionnaire was asked of a sample of 305 respondents, stratified according to gender and age, about the different localities related to the 15 selected viewpoints. IBM SPSS Statistics 21 (2011) statistical software was used in the analysis.

4. Results

4.1 Results of the visibility analysis

Uncertain viewpoints (water surfaces, private plots, floors of buildings, and transport communications) were verified in the terrain and were selected as verified viewpoints only if they were accessible to the walking public (Fig. 3).

The attractiveness of the visibility of selected monuments was evaluated only for verified viewpoints and for various visual qualities (Fig. 4). Flat determination of the ideal observation distance from a monument does not take into account the size (height) of the observed monument and conditions of the surrounding terrain in terms of relief and the urban fabric. For that reason, a "line of sight" with a viewpoint on its circumference from which the whole monument is observable under a 30° vertical angle (the most ideal view in terms of eye optics and perception) was computed for each monument.

The "line of 30° vertical view angle" runs at different distances from the monument in relation to the relief and urban fabric (see Fig. 4). The attractiveness of verified

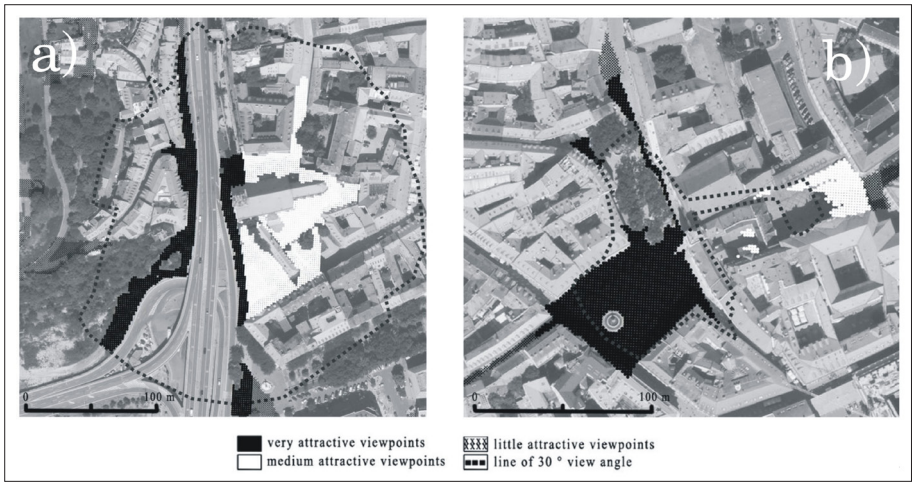

Fig. 4: Attractiveness of viewpoints (a) views of St. Martin's Cathedral, (b) views of Old Town Hall Source: authors' elaboration; Ortophotomaps 2008 © Eurosense, Ltd.

Viewpoint No.	Question No.	Question	Replies (in %)
V1–V15	1	Reason of visiting this place?	I spend my leisure time here – 31.1, Tourist – 32.1, Passer-by – 35.7
V1–V15	2	How often do you visit this place?	Regularly – 27.2, From time to time – 24.6, Seldom – 25.2, First time I am here – 23.0
V1–V15	3	Does this place offer a nice view of interesting monuments of Bratislava?	Positive replies of all respondents – V1(31.8), V2(85.4), V3(90.9), V4(47.4), V5(80.0), V6(56.5), V7(60.0), V8(55.0), V9(52.2), V10(10.0), V11(61.9), V12(60.0), V13(60.0), V14(85.7), V15(94.4)
V1–V15	4	Which of representative cultural or historical objects of Bratislava do you recommend to see to a visitor?	L1(49.7), L4 (11.6), L8 (8.8), Devín (5.3), L5 (3.2), National Theatre (3.4), L7 (2.9), and Primatial Palace (2.3)
V1–V15	5	Order representative cultural and historic objects of Bratislava according to importance.	Replies of all respondents – L1 (58.7), L4(10.8), L8 (6.9), Devín (5.0), Slovak National Theatre (3.2), L5 (2.9), L7 (2.6), and Primatial Palace (1.3)
V1–V15	6	Is the Castle (L1) one of representative monuments of Bratislava?	Yes – 96.4 all respondents: 95.2 inhabitants of Bratislava: 100.0 visitors from surroundings less than 50 km: 96.0 living outside Bratislava
V1–V15	7–13	Is the L2 (L3, L4, L5, L6, L7, and L8) one of the representative monuments of Bratislava?	L2 yes – 28.9, (L3 – 26.2, L4 – 91.8, L5 – 77.4, L6 – 52.1, L7 – 85.9, L8 – 76.1)

Tab. 2: Interpretation of respondents' replies to selected questions (V1–V15; for names of monuments L1–L8, see text; location in Fig. 2.). Source: authors' elaboration

viewpoints was assessed using the objective criteria of comprehensive visual perception (see Tab. 1). Distances within 100 m from each monument were differentiated as very attractive and medium attractive viewpoints and were graphically indicated (see Fig. 4). The highest values of attractiveness included the following viewpoints as places of enquiry: V1, V2, V3, V4, V5, V7, V8, V10 and V11. Viewpoints from greater distances than 100 m have been assessed as little attractive and very little attractive and included the following places of enquiry: V6, V9, V12, V13, V14 and V15 (see Tab. 3).

All 15 selected viewpoints (places of enquiry) were evaluated further by the number of visible monuments and the criteria of visibility (Tab. 1). Analyses showed that Bratislava Castle is the most-exposed monument because it is visible from 10 viewpoints, St. Martin's Cathedral is the second most-visible with visibility from nine viewpoints, and the Presidential Palace is the least exposed because it can be seen from only two viewpoints (Fig. 5a). The final score of visibility conditions (visual quality) of all 15 selected viewpoints ranged between 2 and 12 (see Tab. 3).

Viewpoint No.	Location	Value of attractiveness and number of monuments				
		Very-4	Medium-3	Little-2	Very little-1	Total
V1	In front of the Presidential Palace	1	0	3	0	10
V2	Primate´s Square	0	1	0	0	3
V3	Hlavné Square	1	0	1	0	6
V4	Outside St Martin's Cathedral	0	1	1	0	5
V5	Michalská St. (intersection of Sedlárska St. and Ventúrska St.)	1	0	0	0	4
V6	Subway of the University Library	0	0	1	0	2
V7	In front of the House of the Good Shepherd	1	0	0	0	4
V8	Below the Luginsland bastion	1	0	3	0	10
V9	Lower Castle terrace	0	0	6	0	12
V10	Terrace before the entry to the Castle (panoramic view of the Danube and Petržalka)	1	0	0	0	4
V11	Terrace staircase leading to the Bridge of the Slovak National Uprising	1	0	2	1	9
V12	New Bridge (bicycle lane over the Danube)	0	0	2	0	4
V13	Boatyard (right bank of the Danube)	0	0	3	0	6
V14	Au Cafe (Tyršovo Embankment)	0	0	5	1	11
V15	Old Bridge	0	0	1	4	7

Tab. 3: Attractiveness of viewpoints (V1-V15, location in Fig. 2) according to visibility of monuments
Source: authors' elaboration

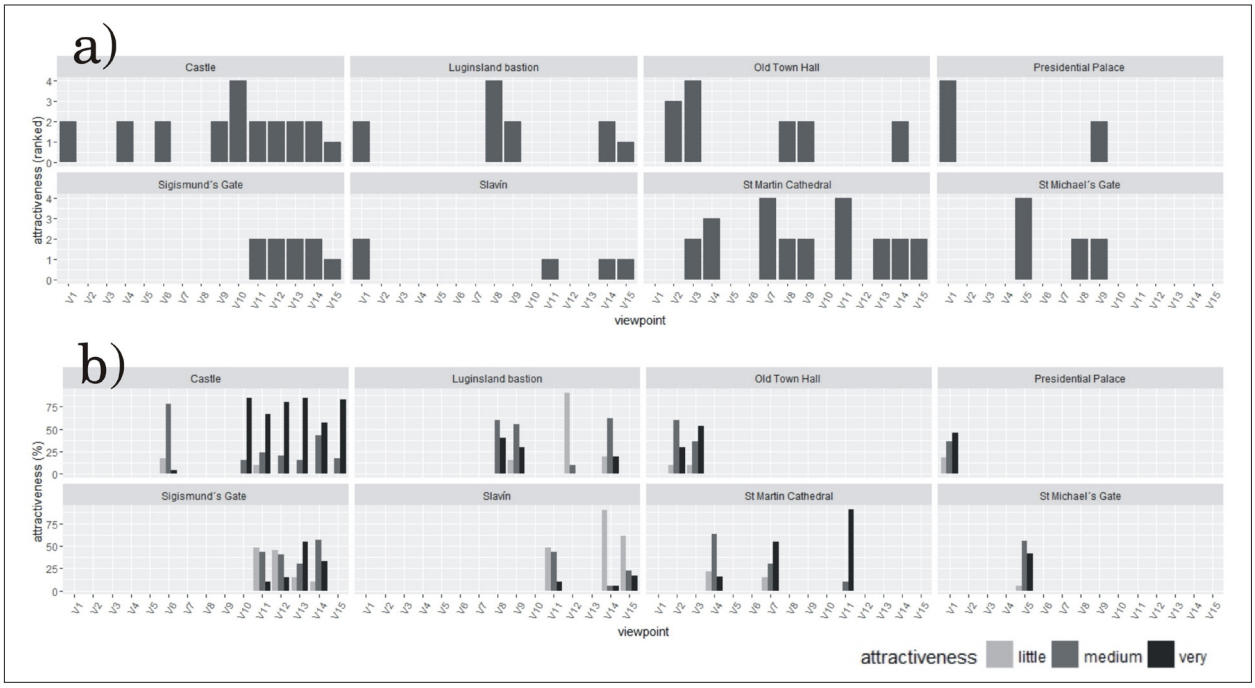

Fig. 5: Attractiveness of viewpoints (V1–V15, location in Fig. 2) (a) according visibility of monuments, (b) according respondents' perception of monuments. Source: authors' elaboration

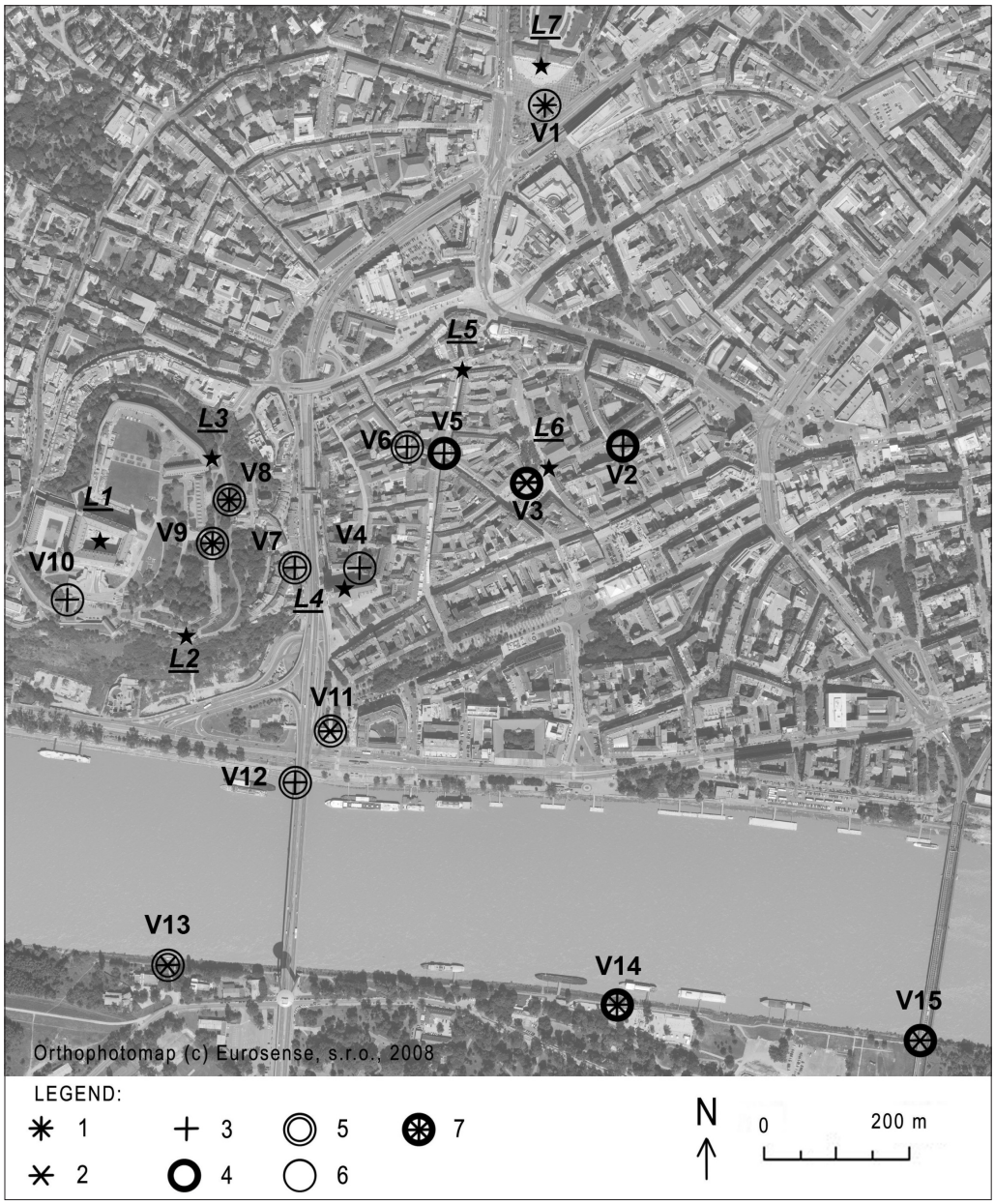

Fig. 6: Assessment of viewpoints (V1–V15, see Tab. 3) according to the visibility conditions and respondents' perception of city´s monuments for identification of the best sightseeing places. Legend: 1 – best visibility conditions, 2 – medium visibility conditions, 3 –worst visibility conditions, 4 – best quality perception, 5 – medium quality perception, 6 – worst quality perception, 7 – assessment according to both approaches (example viewpoint V14 – with the best visibility conditions and best quality perception)
Source: authors' elaboration, Ortophotomaps 2008 © Eurosense, Ltd.

Way of assessment	Value of viewpoints (in score and %)
Objective approach (visibility of monuments)	
Best conditions of visibility (score ≥ 10)	V1(10), V8(10), V14(11), V9(12)
Medium conditions of visibility (score 6 – 9)	V3(6), V13(6), V15(7), V11(9)
Worst conditions of visibility (score ≤ 5)	V6(2), V2(3), V5(4), V7(4), V10(4), V12(4), V4(5)
Subjective approach (perception of monuments)	
Above average rate of positive replies (> 80%)	V5(80.2), V2(85.4), V14(85.7), V3(90.9), V15(94.4)
Average rate of positive replies (50 – 80%)	V9(52.2), V8(55.0), V6(56.5), V7(60.0), V12(60.0), V13(60.0), V11(61.9)
Below average rate of positive replies (< 50%)	V10(10.0), V1(31.8), V4(47.4)

Tab. 4: Attractiveness of viewpoints (V1–V15, see Tab. 2) according visibility and respondents' perception of monuments, location in Fig. 2.
Source: authors' elaboration

Attractiveness of viewpoints (V1–V15) was computed as the sum of multiples of the viewpoint attractiveness score (four categories, see Tab. 1) by the number of visible monuments. All viewpoints were classified into three groups according to the obtained total score (Tab. 3). Viewpoints V2, V4, V5, V6, V7, V10 and V12 obtained a score ≤ 5 and were assessed as having the worst conditions of visibility (Fig. 6). The medium conditions of visibility (score 6–9) applied to viewpoints V3, V11, V13 and V15, while the best conditions of visibility with a score ≥ 10 are related to viewpoints V1, V8, V9 and V14.

Viewpoints V6 (score 2) and V3 (score 3) were assessed as the least attractive places, with the lowest scores of the city's monument visibility conditions, while viewpoints V14 (score 11) and V9 (score 12) were assessed as places with the best visibility conditions of all selected monuments of the city (Tab. 4, Fig. 6).

4.2 Results of visitors' perceptions

The sample of respondents (n = 305) comprised inhabitants, tourists and visitors, asking about their perceptions of the city's monuments. Specifically, we surveyed visitors (visitors from neighbouring municipalities up to 50 km away – 17.7%, and visitors outside Bratislava – 40.7%), and residents of Bratislava (41.3%). Regarding the demographic characteristics of the respondents, the average age was 33.2, 13.2% of respondents had primary, 45.2% secondary, and 41.6% higher education, and the survey sample consisted of 50.2% male and 49.8% female. The reasons for visiting the place of contact with the respondents (one of the viewpoints and simultaneously the place of the on-site interview) were split into approximately equal thirds: spending leisure time; being a tourist; or being a passer-by. The frequency of visits was classified into four categories (see Tab. 2).

For the most significant results of the questionnaire, we considered the replies to question No. 3: whether the viewpoint offers nice views of interesting monuments in Bratislava. In total, 65.2% of all respondents referred to all 15 places as those with nice views. Positive replies of all respondents distinctly differed according to the place of questioning (see Tab. 2, Question No. 3). Finally, responses were divided into three groups. (see Tab. 4). The first group contains viewpoints V10 (the lowest rate of 10.0%), V1 and V4, with a distinctly below-average rate of positive responses (less than 50%), and it represents viewpoints with the worst quality of perception as assessed by the subjective approach (see Fig. 6, Tab. 4). Viewpoints V9, V8, V6, V7, V12, V13 and V11 (50–80% positive replies) represent the group with medium quality of perception. The third group consists of viewpoints V5, V2, V14, V3 and V15 (the highest rate of 94.4%) with distinctly above-average rates of positive replies (over 80%) and the best quality of perception (see Fig. 6, Tab. 4).

The questions concerning the representative monuments of Bratislava and the order of their significance were used for finding the best places for sightseeing. With regard to question No. 4, almost one half of respondents (49.7%) recommended that potential visitors see the Castle (L1) as a representative, cultural and historical monument. Approximately one-tenth of respondents mentioned St. Martin's Cathedral in second place, and Slavín in third place (see Tab. 2). As far as the sample of respondents' ranking of monuments (question No. 5), the Castle was afforded the first place (58.7% of respondents), followed by St. Martin's Cathedral, Slavín, Devín, the Slovak National Theatre, St. Michael's Gate, the Presidential Palace, and the Primatial Palace (see Tab. 2).

Additional important results of respondent perceptions were analysed in terms of replies to the question about what type of view of a particular monument is offered by a given viewpoint (Fig. 5b). Most respondents gave high marks to the St. Martin Cathedral from viewpoint V11 (90.5%), and the Castle from viewpoints V10 (85.0%), V13 (85.0) and V13 (83.3%). A high percentage of respondents also reported that the view of Slavín from viewpoint V14 is little attractive (90.5%, see Fig. 5b).

Viewpoint No.	What disturbs	What pleases
V1	Traffic, noise, smog, scruffy environment	Place to relax, a fountain, architecture
V2	Scruffy buildings, advertisements	Quiet place, greenery
V3	Tourists	Fountain, coffeehouses, silence, peaceful atmosphere
V4	Scaffolding, road, traffic	Greenery, historical nature
V5	Waiters	Good environment, atmosphere, historical buildings
V6	Billboards, posters	Castle
V7	Cars, rush, refurbishment of the Cathedral	View of historical centre, relative tranquillity
V8	Cars	View, silence, history
V9	Trees impeding the view	View of the city, panorama
V10	Petržalka (large-scale housing estate)	Panorama
V11	Noise, traffic on the New Bridge, refurbishment of the Cathedral	Night lighting of the Cathedral and Castle
V12	Busy roads, crossroads, bridge	River Danube, view of Castle and Petržalka (large-scale housing estate)
V13	Unkempt areas, neglected greenery, scaffolding	Castle, Cathedral, river, greenery
V14	Gallery, unkempt areas, scaffolding, building site	Historical buildings, Castle, river, greenery
V15	Gallery, unkempt embankment, Old Bridge, port	Castle, historical buildings, river, greenery, Old Town

Tab. 5: Interpretation of respondents' replies regarding the quality of viewpoints
Source: authors' elaboration

Comparing the results of both approaches (see Tab. 4), there was found a significant relationship in the assessment of the viewpoint V14 (Tab. 4) between the best visibility conditions (score 11) and the best quality of perception (85.7%) and in the assessment of viewpoint V10, which had low measured visibility conditions (score 4) and the worst quality of respondents´ perception (10.0%). In the assessment of the most other viewpoints no significant relationship was found. The results of both approaches represent a comprehensive way of defining and verifying the best places for effective sightseeing of the city's monuments (see Fig. 6).

5. Discussion

The results of the visibility analysis indicate the optimal viewpoints of comprehensive visual perceptions regarding the distance, the visible side in terms of legibility and impressiveness, size (height), and the number of visible monuments. Justification for this approach is found mainly in the evaluation of visibility conditions, such as with city buildings in the works of architects and urban planners, for example Benedikt, 1979; Batty, 2001; Rød and van der Meer, 2009; Garnero and Fabrizio, 2015; Fisher-Gewirtzman, 2016; and Lin et al., 2017; or in the physiognomic landscape research of landscape architects, such as Nijhuis, 2011; Ode et al., 2008; and Van Lammeren, 2011. An important question, however, is whether the visibility conditions (visual perception) of the city monuments are sufficient in terms of other more subjective aspects of perception (see Daniel, 2001; Jacobs, 2011; Lothian, 1999; Nijhuis et al., 2011), and mainly in the context of tourist interest (Fyhri et al., 2009; Zemła, 2016)? To answer this question, we looked to the results of the second part of our research, in which we used the objective approach to compare and verify our interpretation of the responses to the questions from the on-site interviews.

The viewpoints ranked most highly by the objective approach were viewpoints V1, V8, V9 and V14 (Fig. 5a, Tab. 3). Viewpoint V1 (score 10) is, according to respondents, one with the worst quality of perception (31.8%, Tab. 2, Fig. 5b). This indicates that not all visitors and tourists also appreciated the number of visible monuments (see Tab. 3), because they may not have known where Slavín (L8) and Luginsland (L3) were located. The benefit of visibility analysis, however, is the complexity of evaluation it affords for all conditions of selected monuments. The low ranking of respondents' perception for viewpoint V1 is probably due to the noise and disturbance of nearby transport (see Tab. 5). The psychology of perception is mainly influenced by biological and individual perception factors (Jacobs, 2011). An exception from this assumption is the view of the Presidential Palace, which was evaluated by most respondents as very attractive (45.5%, Fig. 5b).

Viewpoint V9 (score 12) ranks best according to the objective approach to visibility analysis. From that viewpoint, tourists can spot the Castle (L1), the bastion (L3), and four additional monuments in the city centre (L4, L5, L6 and L7), although, because of the distance, the visible parts of the monuments were evaluated as little attractive; viewpoint V9 also provides a panoramic (comprehensive) view of the historic core (the Old Town). Sightseeing from this location requires some knowledge of the history of monuments and their locations in the city, so that it might be more important for locals or guided groups. This approach and ranking also determine the significance of the viewpoint regarding the efficient, albeit "distant", sightseeing of Bratislava that it affords. An analysis of respondent perception according to the subjective approach showed that the viewpoint is of medium quality (52.2%, Tab. 2). This ranking was certainly also affected by the influence of trees that impede the view (Tab. 5). Conversely, the benefits of viewpoint V9 might be the freedom that visitors have to move along the whole terrace and the chance to locate the best views of the Old Town that are devoid of the disruptive effect of greenery. According to the subjective analysis of respondent perception, V11 offers the best view of the St. Martin Cathedral (90.5%, Fig. 5b), but only a medium-quality perception (61.9%, Tab. 2), which was probably affected by the disruptive effect of the traffic noise on the bridge (see Tab. 5).

Viewpoint V14 was second best for visibility conditions because it captures five monuments (L1, L2, L3, L4 and L6) and the distant Slavín (L8, see Tab. 3 and Fig. 5a). Respondents appreciated the calm spot on the bank of the River Danube, which offers a nice view of the Castle and the historic city core, and they conferred on it a third place ranking (85.7%, Tab. 2).

Viewpoints in the historic core do not offer as many chances to see the selected monuments, but they do disclose other historic buildings, as appreciated by tourists (see Zemła, 2016). Viewpoint V3 is evaluated as medium

Fig. 7: (a) View of Castle from viewpoint V10, (b) Views of Castle from viewpoint V6, location in Fig. 2
Photo: J. Oťahel'

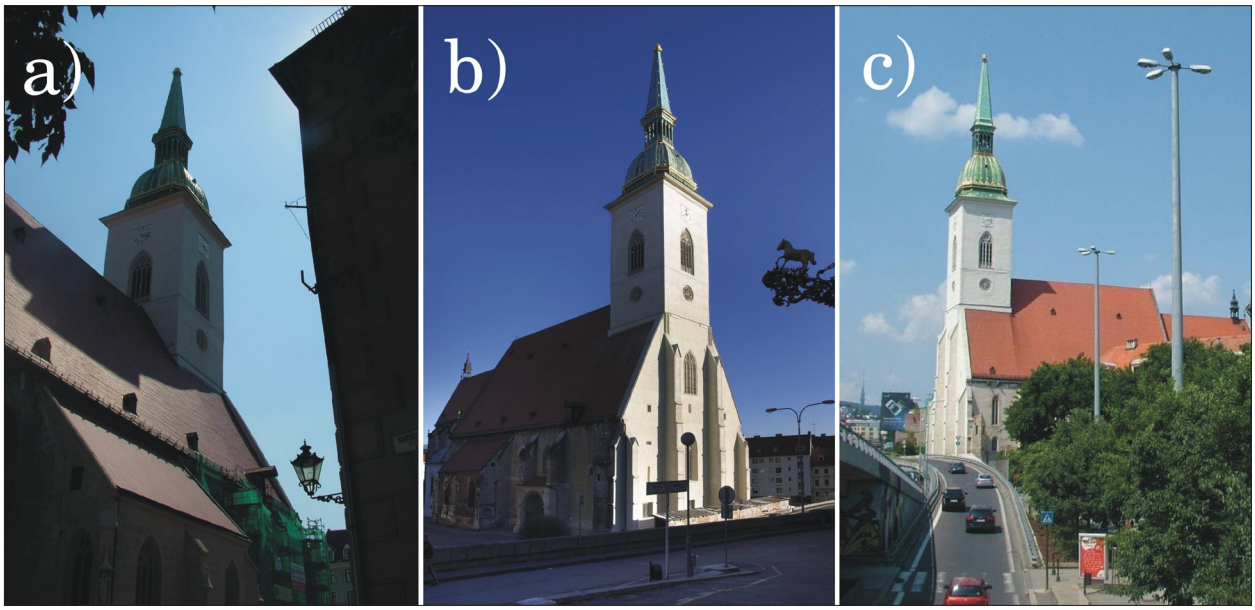

Fig. 8: Views of St. Martin's Cathedral (a) from viewpoint V4 (medium attractive), (b) from viewpoint V7 (very attractive), (c) from viewpoint V11 (very attractive) – location of viewpoints in Fig. 2. Photo: J. Oťahel'

attractive according to the visibility analysis (Tab. 3, Fig. 5a) because it facilitates the view of only two monuments (L4, L6), but it is the second best with respect to the positive replies of respondents (90.9%, Tab. 2). Likewise, viewpoints V2 and V5 are among the worst in visibility conditions, but the subjective approach ranks it among the best in terms of quality perception (over 80%, Tab. 2). Viewpoint V6 (Tab. 3) ranks worst in the objective approach, but regarding the surrounding historic buildings (such as the Clarisse Church, Fig. 8b), it received a much higher score according to the subjective approach (56.5%, Tab. 2) with a medium attractive view of the Castle (Fig. 5b).

Comparisons of both approaches showed a similarity of the research results related to the viewpoints within a distance of less than 100 m from monuments (in the frame of comprehensive perception, see Fig. 4). The viewpoint and place of enquiry of viewpoint V4, for example, is located in the medium attractive visibility area regarding the distance, being very close to the Cathedral (Fig. 8a). This fact is reflected in the responses to survey questions asked at the place of enquiry (see Tab. 2, Fig. 5b). Accordance of the visibility assessment with the respondent's perception is evident for viewpoint V11 (Figs. 5b and 9c). The similarity in the assessment of the visibility and the respondents´ perception was found in the example of viewpoint V7 (Tab. 4, Figs. 5a and 5b). The view over the busy traffic of Staromestská St. (Fig. 8b) has been mentioned as a disturbing effect on the viewpoint V7 (see Tab. 5, Fig. 10a).

The consistency of both assessments was found in perceptions of the Old Town Hall. According to visibility analysis, the visual perception from the legible (impressive) side of the monument was preferred. This preference was confirmed by responses to survey questions asked from the reverse side of Old Town Hall in viewpoint V2 (Fig. 9a, see Tab. 3). Different results were gained by evaluating the perception of the Old Town Hall from its impressive side on Hlavné Square (viewpoint V3, Tab. 3). Only one-half of the respondents judged the view as very attractive (Fig. 5b), because they perceived a large number of tourists as having a disturbing effect on this viewpoint (see Fig. 9b, Tab. 5).

The disturbing influence of street restaurants reduced the very attractive view of St. Michael's Gate from viewpoint V5 on Michalská St. (Fig. 5a, 10b, Tab. 4) to the level of medium attractive (Fig. 5b). Sigismund's Gate and Luginsland bastion were probably perceived as part of the Castle fortification because they were not quoted separately as impressive (representative) monuments (see Tab. 2).

Fig. 9: Views of Old Town Hall (a) from viewpoint V2 (medium attractive), (b) from viewpoint V3 (Hlavné Sq., very attractive) – location of viewpoints in Fig. 2. Photo: J. Oťahel'

6. Conclusions

The visibility conditions of eight monuments in the central area of Bratislava have been analysed in the first part of this paper. Using a data-driven approach, we computed practicable viewpoints for the observation of monuments to find very attractive viewpoints for each monument in its immediate vicinity (up to 100 m, see Fig. 4). The attractiveness of the viewpoints (visibility conditions and qualities) was measured by virtue of the monument's visibility criteria. The quality of visual perception identified using an objective approach was verified in 15 selected viewpoints, according to the results of the subjective respondent perception in the second part of this paper. According to the data, viewpoints that are rather remote from the historic Old Town and that provide views of several monuments (Fig. 11) and a comprehensive panoramic view of Bratislava's central area, were ranked best.

According to survey respondents, viewpoints in the historic Old Town (V3, V2, V5, see Tab. 4) or more remote viewpoints on the opposite bank of the River Danube

Fig. 10: Disturbing impact of views (a) from viewpoint V7, (b) from viewpoint V5 – location of viewpoints in Fig. 2 Photo: J. Oťahel'

Fig. 11: View of the historical centre and of the Danube from Lower Castle terrace (V9). Photo: J. Lacika

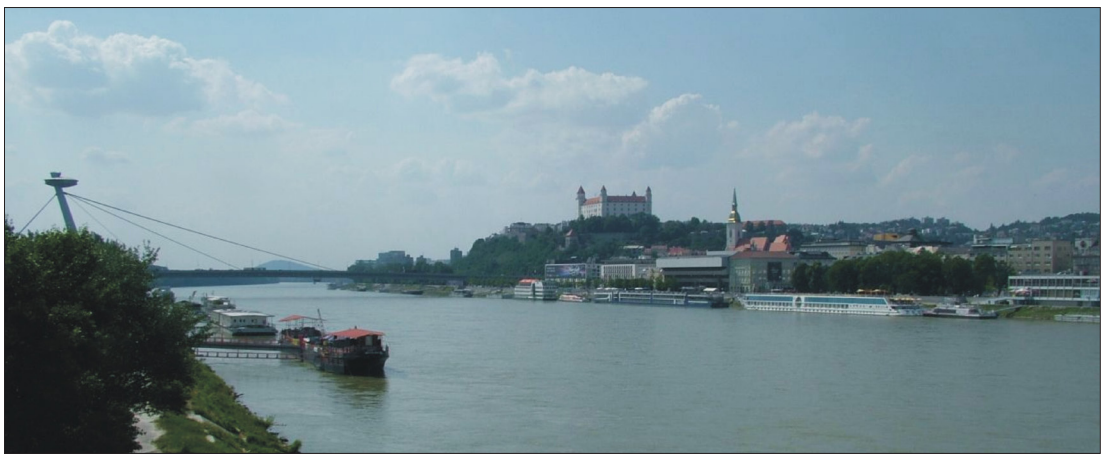

Fig. 12: View from the Old Bridge (V15). Photo: J. Oťahel'

(V14, V15, see Tab. 4), which offer panoramic views of the city (Fig. 12), were marked positively and are among those with the highest quality perception of the city.

A comparison of the two approaches pointed to the valuable assets of visibility analysis for the assessment of viewpoints in terms of visibility conditions, attractiveness and the number of selected monuments. The independent (objective) visibility of monument analysis is considered as one of possible approaches to predict human perception and behaviour in urban environments (see Nijhuis et al., 2011; Van Lammeren, 2011; Fisher-Gewirtzman, 2016).

The assessment of viewpoints with the best visibility conditions makes it possible to propose effective viewing places and possible sightseeing routes. The assets of the subjective approach are appreciable for verifying very attractive viewpoints (with the best visibility conditions). Respondents' perceptions (human responses) are influenced by biological, cultural and individual factors (Jacobs, 2011). Using the described data-driven approach, therefore, could largely help to effectively design questionnaires that have high informative value for minimum costs. Respondents' perceptions, however, also pointed to the significance of the location of viewpoints for determining which environs were perceived as having either positive effects or negative disrupting effects. The viewpoints are classified by the best quality perceptions. This indicates that effects such as traffic, public movement intensity and soundscapes, need to be taken into account in further research. Generally, a subjective approach verifies to some extent and corrects also to some extent the results of an objective one, in this case.

Coupling an objective approach to the analysis of visibility conditions for city monuments with the verification of assessments concerning the attractiveness of viewpoints based on the perception of visitors and tourists using a subjective approach, has been presented here for the case of the central area of Bratislava, as a possible way to plan for the best locations for efficient sightseeing in cities.

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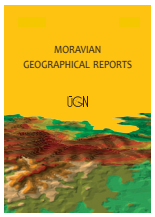

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The development of peripheral areas: The case of West Pomeranian Voivodeship, Poland

Martin KEBZA [a *]

Abstract

The process of peripheralisation of outlying areas is discussed in this article using a case study of West Pomeranian (Zachodniopomorskie) Voivodeship in Poland. Emphasis is placed on the relationship between these peripheral areas and metropolitan core areas. Scalar and vector data on selected indicators in the years 2005 and 2015 for gminas (communes, territorial units NUTS 5) are presented. The values for both years were observed as well as the change between them. A composite indicator based on the calculated data was developed, and it served as the basis for categorisation of metropolitan, 'semi-peripheral' and peripheral areas, which were further defined on the basis of their intrinsic properties and location in the region. The development of such peripheral areas is assessed more generally in the conclusions.

Keywords: *periphery, metropolitan area, regional development, West Pomeranian voivodeship, Zachodniopomorskie, Poland*

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1. Introduction

The process of peripheralisation is discussed in this article – the development of peripheral areas with a certain cohesion but also related to larger cities during the metropolitanisation process. Peripheries, commonly understood as one of the poles of development axes, are also usually the result of delimitation processes. In other words, as an understanding of their status as the result of regionalisation at various hierarchy levels. Factors of peripherality may extend beyond the marginal position of geometric distance, e.g. an unfavourable physical- and socio-geographic position, turbulent historical development or even an insufficiently developed settlement system. Naturally, such peripherality aspects might overlap.

For our purposes, the West Pomeranian Voivodeship in the northwest of Poland is studied as a case of an interesting area with a very diverse historical context and with a specific socio-geographic location within Poland and Central Europe. It is also internally differentiated primarily on the basis of the settlement system. There are some works that also deal with particular peripheral regions. For example, Chreneková et al. (2015) focused on the Žilina Region, Ślusarczyk and Herbuś (2011) dealt with the Silesian voivodeship, and Bański and Czapiewski (2015) whose research concerned the Mazovian region of Poland. All of these areas face problems, either because of their remoteness, post-war population movements and subsequent changes, or their negative values on various socio-economic indicators.

Transformational changes that occurred after 1989 are significant for the current form of the West Pomeranian Voivodeship (WPV), as much as for the entire former Eastern Bloc. There were often cases of corporate collapse during the transition, even in Poland. On the other hand, a great place to invest had been unlocked. Transnational corporations (TNCs) and their foreign direct investment (FDI) actions have played a major role in post-socialist countries, but they have had only a small effect on regional development (Hardy, 1998). Actually, there are also some visible endogenous processes within the settlement system of post-socialist countries, such as metropolitanisation. According to Smętkowski et al. (2009), Poland is the most polycentric country in Europe because it contains 17 cities accommodating more than 200,000 inhabitants. Metropolitanisation is necessarily related to peripheralisation, which means that divergent processes are taking place at the lowest hierarchical level of the municipalities.

Poland is interesting because it is the only EU country that has not experienced a recession since the 2008 crisis and has grown economically every year (Duszczyk, 2014).

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According to the GUS (2016), however, most of the voivodeships have displayed a decline in growth or even a slump since 2011.

The contemporary WPV has its beginnings in the reform at the turn of the millennium, when the total number was reduced from 49 to its current 16. The present form of the Polish NUTS 2 units was created, among other reasons, for greater efficiency of regional policies (Chidlow et al., 2009). Regarding its position in the higher hierarchical structures, there is often a rather vague vision of the territory as 'average', and compared to other problem regions it is relatively uninteresting. Its national and transnational significance can be derived from more complex works that deal with Poland itself, but may be more or less generalised.

Seclusion and isolation, or rather distance from the main concentration area of Szczecin, is significant for the WPV, especially compared to the potentially lagging eastern Polish regions (Bański, 2010). This is also confirmed by Stelder (2014), who perceives the WPV strategic centres of Szczecin and Świnoujście as being on a blind transport branch extending from the Warsaw–Berlin axis. Some authors, however, have pointed out that Szczecin can benefit from its position as a traffic junction with a relatively good connection to Berlin (Smętkowski et al., 2009). This is due to the historical context of the region. The current highway A6 was originally built in 1937 (GDDKiA, 2016) as a planned connection between Berlin and Kaliningrad, known under the deeply rooted name Berlinka. Only a small part of this project was realised, however, and it contains the mentioned highway and the road DW142. On the other hand, Barjak (2001) evaluated the German post-socialist regions, which are adjacent to WPV, as having outdated industrial infrastructure, labour market problems, few economic capabilities and little potential for growth.

The current study of Poland and its regions should be interesting for other Central European geographers, due to its significant polycentric settlement system and strong regional centres, which counterparts in neighbouring countries generally lack. Such a system is also one of the strong determinants of regional development. In addition to gains in academic knowledge and any discussion of research results, the paper should be beneficial for peripheral areas in terms of development and settlement systems planning.

2. Theoretical background

One of the accompanying manifestations of regional development is spatial polarisation. Scientists have been involved since the introduction of Christaller's Central Place Theory and the research has subsequently developed throughout the post-war period (Pileček and Jančák, 2011). The evolution of polarisation has several phases that could be understood in a similar fashion to Friedmann's (1966) phases of national development – preindustrial, transitional, industrial and post-industrial, each of them having specific regional policy needs. Post-socialist countries are unique because of their 40-years of 'unnatural' evolution, which led to equalisation. The return to 'natural axes' of development occurred after the economic and social transformation following 1989.

Hospers (2003) distinguishes three ideal categories in the European economic-social system – core services areas, intermediate industrial areas and peripheral rural areas. The claims of Barjak (2001) are in indirect accordance, assessing the industrial areas as a necessary foundation for the economy. Such areas are actually not among the most advanced and, according to this author, it is appropriate to develop services within these regions. It should be noted that services cannot be developed universally.

It should also be mentioned that this contribution specifically describes the Central European environment, focusing primarily on Polish, Czech and Slovak literatures.

According to Kuhn (2015), a periphery is a sparsely populated outskirt and it is determined by its distance from a centre. Schmidt (1998) indicates that a periphery is an area that did not go through successful integration into dominant structures or processes. But many factors can contribute to the formation of peripheries. Schmidt (1998) also presents six ways in which to understand a periphery: geometric, ecological, social, economic, cultural and political. Havlíček (2007a) also mentions the malfunctioning of functional and spatial relationships. There are also disadvantage for peripheries, which can be grouped into three fundamental categories, namely causal, contingent and associated (see Copus, 2001; Copus and Scuras, 2006). A position on the border might also be an opportunity, however, especially if the area is intersected by a transport corridor (Stryjakiewicz, 1998). This author also proposed a relatively optimistic suggestion that the 'grey economy' that can grow in the border areas helps the overall development of those areas. Peripheries are sometimes associated with the countryside, but this notion is also rejected by some authors. For example, Blunden et al. (1998) or Hedlund (2016) classify more rural areas as having a variety of characteristics rather than simply a peripheral status.

Just as there is not only one countryside, there is not only one periphery. For example, Czyż (2002) distinguishes between peripheries with low and average levels of socio-economic development. Although there might be several types of peripheries that depend on their environment or location, all of them have common disadvantages, which are mentioned above. These can include transport and travel costs or weak influences of government (Copus, 2001). The public sector is often tied to many problems. For example, Barjak (2001) mentions persistent centralist tendencies in the Polish context. In addition to whole peripheries, typical partial problems in such areas (or rural areas) are also studied. Szymańska et. al. (2009) examined population age structure (the aging problem), while other authors have dealt with economic or financial issues. For example, in relation to finance, Bečicová and Blažek (2015) discuss cumulative mechanisms, such as regional drainage or selective lending business, which may adversely affect peripheries.

In publications on peripheries, the term 'margin' is often mentioned, for which the authors have differing approaches. The prevailing perspective, however, views marginal areas as escalated peripheries affected by total isolation, which are non-productive and are not integrated into markets (Pileček and Jančák, 2011). According to Leimgruber (2004), marginal areas lie 'on the margin of a system or outside of the system'. Areas with similar characteristics are referred to as 'lagging regions' by Blazyca et al. (2002). It is possible to extend the concept of core-periphery to a more segmented version, which includes core (metropolitan area), semi-metropolitan, semi-periphery, periphery and marginal areas. Sokol (2001) considers a similarly modified concept, but semi- and marginal areas are replaced by more types of 'super-peripheries', while using the continental scale. For Eastern Europe, the term 'New Periphery' appears in the context of post-transformation inclusion into the global capitalist system (Kagarlitskii, 1999).

The opposite of peripheral, or possibly marginal areas, are cores. According to Hospers (2003), the core region, particularly in the case of the Blue Banana, is distinguished by higher household incomes, lower unemployment rates and a developed infrastructure. In short, it differs in demographic, economic, infrastructural, cultural and educational aspects. It is however an extreme example of a 'central megalopolis' in Europe. According to Smętkowski et al. (2009), such a centre, which can be understood as a metropolis, develops on the grounds of population concentration in a sprawling area. There is also the mutual isolation of some urban activities (shops in shopping malls) and the growth of research and development potential. Metropolitanisation also affects the economic situation and the concentration of job opportunities. Regional economies de-specialise and the gap between the core and the periphery widens.

Smętkowski et al. (2009) also wrote specifically about Polish metropolitan areas. In addition to the above-mentioned phenomena, they also discuss their negatives, which include insufficient metropolitan spatial planning, inefficient transport systems including the lack of service in the suburbs, and the increasing pressures on the environment.

Other authors discuss the delimitation of metropolitan areas. A metropolitan area is supposed to have more than 0.5 million inhabitants, the maximum distance from the city is 50 kilometers, and principles of continuity and compactness are applied (Biczkowski et al., 2014). According to Smętkowski et al. (2009), a metropolis is usually a city with over one million inhabitants (similar to Gaussier et al., 2003), and a regional metropolis has more than 0.5 million inhabitants. Other attributes are needed in addition to the core, namely a suburban area, as well as selected features, such as connectivity with other cities whose centres operate as 'hubs' of transport, services or financial institutions. In their own definition, however, they applied criteria similar to legal regulations.

Metropolitan areas generally appear in the literature as points of growth. As Biczkowski et al. (2014) state, metropolitan areas primarily influence their surroundings and develop them further, while the remaining 'unaffected' regions decline relatively.

3. Data and methods

WPV has been chosen for several reasons:

a. in the literature it is usually overlooked because at higher levels of regional analysis it is considered as rather 'ordinary' (except by Minarčíková, 2015, whose work concerns the regions of the Czech Republic, Poland and Slovakia). Authors tend to focus on more problematic regions, particularly in the east of the country, e.g. Podkarpackie, Podlaskie and Lubelskie (Lewandowska et al., 2015); Silesia (Ślusarczyk and Herbuś, 2011); and Mazovia (Bański and Czapiewski, 2015). Similarly, research has concentrated on the evaluation of the entire state, where detailed regional characteristics are interpreted sparsely (e.g. Bański, 2005, 2010; Barjak, 2001; Blazyca et al., 2002; Chaberko et al., 2012; Chidlow et al., 2009; Czyż, 2002; Zborowski et al., 2012);

b. It has been neglected in the development of major transport routes. Since 1990, no highways have been built and the construction of expressways has prevailed in the form of bypasses (GDDKiA, 2016) and the region is thus relatively poorly connected with the rest of Poland;

c. Due to the highly eccentric nature of Szczecin, which is the 7th largest city in Poland (GUS, 2016) and which also serves as a provincial city, it assumes the role of the administrator and main supplier of services. Biczkowski et al. (2014) label it as a metropolis;

d. It is a settlement system in which secondary regional centres are relatively few in number;

e. It has an interesting historical-geographic context, particularly from the perspective of the borders that have changed and have been through eras of closed and re-opened visa relations (Stokłosa, 2013). The region was until 1945 developed in a Germanised milieu, but a significant geopolitical change followed when the boundaries of Poland were changed and the area of the country shifted to the west. This was also connected with its demography: seven million Germans had to leave the new Polish area, while six million people (Poles and migrants from USSR) re-settled there (Fassmann and Münz, 1994).

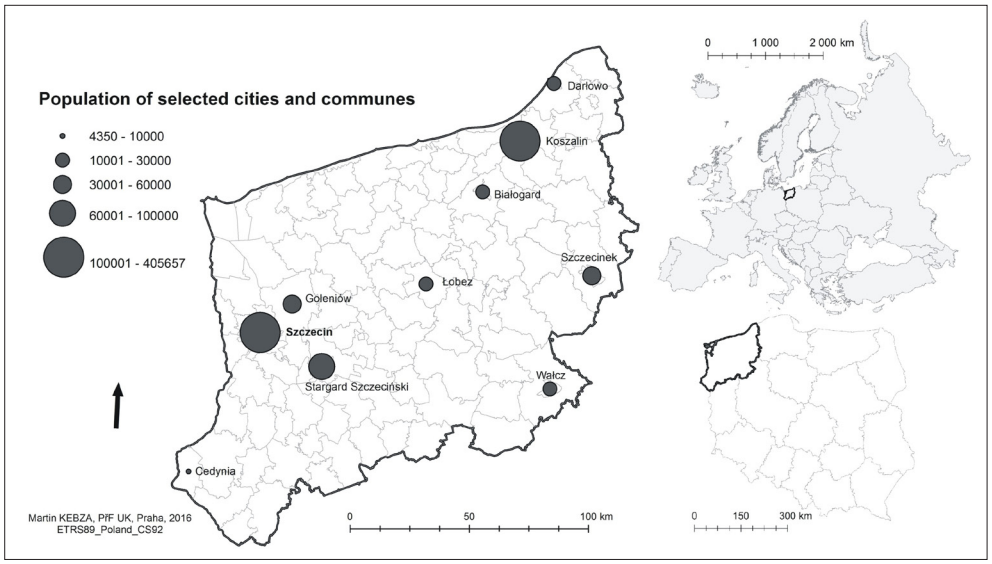

Fig. 1: Selected cities in the WPV and their population and location of WPV within Europe and Poland
Note: Szczecin is a growth stimulating core with expanding agglomeration and Koszalin (on a level of close Słupsk or Lubusz voivodeship capitals) is a significant regional centre (cf. Bański, 2010)
Source: author's elaboration based on data from GUS (2016)

In Central Europe, research that deals with regional socio-economic differentiation tend to use NUTS 2 or NUTS 3 units for their analysis (e.g. Kubeš, Kebza and Nováček, 2016; Nováček, 2014). Such units may be important for regional policy. Some authors also use smaller units, e.g. Chaberko et al. (2012), Chreneková et al. (2015) and Zborowski et al. (2012). It is more appropriate to focus on individual topics than the entire socio-economic differentiation. A number of older works thematically linked with Poland naturally use the old divisions of voivodeships (Barjak, 2001), or combine both regionalisations (Chidlow et al., 2009; Czyż, 2002). In this paper, the NUTS 5 territorial units (gmina) were used. While the use of larger territorial units carries the advantage of having access to better statistical data, the approach used here should provide a much more detailed view of regional socio-economic structure. Data for some important indicators, which would be suitable for such research, are however not available (e.g. average monthly salary).

Polish NUTS 5 areas are relatively generalised units containing a relatively large number of often very small settlements, one of which usually has a departmental role. In comparison, in countries such as the Czech Republic an enormous number of separate municipalities (NUTS 5) exist. On the other hand, gminas are sufficiently large. The smallest population unit in the WPV gmina for 2015 is Nowe Warpno with 1,655 inhabitants (GUS, 2016), so the analysis should not be affected by extreme values, for example when examining population development, such as in the discussed Czech municipalities with tens or hundreds of inhabitants. In the WPV there are 114 gminas. It is common in Poland for some gminas to have the character of another gmina's suburb that has central functions, e.g. Walcz or Szczecinek, and bear the same name. The level of gminas should represent organic spatial units with their own inner processes and differentiation.

For this research project, data from 2005 and 2015 were used, with the exceptions of net migration rates from 2014 and the number of university students from 2013, both because of the lack of more recent data. The work is not only about regionalisation, but also about monitoring the development of certain polarisation processes of socio-economic differentiation in the region. The data used in this study were obtained mainly from the Central Statistical Office (GUS). Distance measurement was done through the web portal mapy.cz, in a manner similar to Halás and Klapka (2015).

The study data are divided into two basic groups: scalar and vector. The scalar group includes the unemployment rate, net migration rate and age dependency ratio. The vector group includes kilometric road distance from selected services that are or may be somehow essential to everyday life and socio-geographic organisation within the voivodeship. Essentially, it is the availability of the centres of trade, education and labour. A disadvantage of such small territorial units is the lack of statistical data. Most of the studied indicators are not registered before the decade studied and some other indicators are registered only for larger areas. Other authors also agree that research is limited by databases (e.g. Minarčíková, 2015), especially in terms of economic indicators. Dostál and Hampl (2008) mention a suitable economic aggregate calculated as the average monthly wage multiplied by the population of employed people, if the GDP values are not available (also used in Kubeš, Kebza and Nováček, 2016). Unfortunately, for such small territorial units there were no available data for the GDP, not even for the average monthly wage. The only indicator, which is herein considered as economic, is the unemployment rate. It is a very widely-used indicator that can highlight the seriousness of the problems in the region from an economic perspective, while also overlapping with the social perspective (Nováček, 2014).

This study used two socio-demographic indicators that may illustrate the condition of the territory (peripherality). An important factor is population growth, which is better represented by the net migration rate from the perspective of territorial attractiveness. It can strongly recognise depopulating areas, as well as growth areas, especially suburban regions. A very significant problem associated with migration is the outflow of young people, who are heading to larger cities or abroad. Moreover, Bański (2005) mentions that a post-productive population is typical in peripheries. To express this problem, the age dependency ratio was used. It would be interesting to use other indicators such as the proportion of university graduates (as in Kubeš, Kebza and Nováček, 2016). The problem is again, however, the lack of data, which in addition to contemplating the time slice, must provide monitoring of continuity.

Because the literature is in agreement (Havlíček, 2007b; Pileček and Jančák, 2011) that peripheries are dependent on cores, distance was measured as a demonstration of the relationship between them using the designated three vector indicators that give relatively greater freedom for data collection. This is more or less similar to the approach of Halás and Klapka (2015), who also considered distance (distance-decay functions) to Slovak regional centres. This work does not include the distance to the administrative centres of Poland since most residents do not possess the immediate objective of commuting and can act rather symbolically. In addition, this is typically the largest city of the region with a high concentration of services so such measurements could be somewhat duplicate.

Indicator	Based on	Measure unit
Unemployment rate	Number of unemployed persons	%
Net migration rate	Number of migrants	%
Age dependency ratio	Number of persons in post-productive age	%
'Trade'	Size of GLA	k_s
'Education'	Number of students	k_s
'Labour'	Number of occupied posts	k_s

Tab. 1: Overview of indicators that were used for the analysis
Source: author's conceptualisation

Trade is appraised as one of the basic services. According to van Leeuwen and Rietveld (2011), it is a key element in providing services. In some form, it might even exist in a rural landscape, while according to these authors, its departure leads to problems. Current trends, however, are moving towards territorial trade concentration and de-specialisation in large-format retail centres. They, as Spilková (2012) has also discussed, are becoming a kind of relaxation zone for an ever-increasing group of people for their practicality and availability. The size of trade centres was measured by the size of GLA, the rental area of relevant shopping malls. These data were obtained from the Polish Council of Shopping Malls (Polska Rada Centrów Handlowych, 2016). Although the sheer size of the area is not necessarily a determinant, the size of trade centres is a noticeable indicator of significance.

Institutions of tertiary education are undoubtedly one of the major elements forming cores. Their significance can be imagined on multiple levels: by the status of universities and colleges as hierarchically the highest centres in Central Place Theory (Christaller, 1933); as an intelligence and innovation incubator; or as a city attractiveness factor for the young residents who are concentrated there and may settle after graduation (Zborowski et al., 2012). The size of educational centres was derived from the number of students studying at the university, which is located in the centre. That number may also reflect demographic changes, but also the prestige and reputation of the university as perceived by students. Naturally, some prestigious universities prefer quality of education over quantity of students. In Poland however, the public universities that are financed by the number of students are dominant. The data were obtained from the Central Statistical Office yearbooks, which offered the data of the most recent years (GUS, 2006, 2014). This indicator also partially stands for the proportion of university graduates in the population discussed above.

The labour centres were defined according to the number of occupied posts (NoOP). It was assumed that such a centre had at least 25,000 NoOP, so the cities with more regional or trans-regional impact had been selected. Even though the level of 25,000 NoOP was set down subjectively, smaller centres would have had a too low value of the k_1 coefficient (explained below). Vector indicators could be synthesised into usable forms on the basis of absolute values (GLA, the number of students, NoOP) by determining coefficients of centres' range (k_1) and coefficients of centres' power (k_2).

$$k_1 = 1.5 + \ln(6)\frac{n}{10{,}000} \qquad \text{(where n = GLA)}$$

$$k_1 = \frac{n}{200} \qquad \text{(where n = number of students)}$$

$$k_1 = \frac{n}{1{,}000} \qquad \text{(where n = NoOP)}$$

The coefficient of the centre's range is a value corresponding to a kilometric reach of the radius in which the centre has an impact on other gminas. Gminas may be influenced by multiple centres, where the values are added up, but also beyond the reach of the centres (which is rare). In gminas it is necessary to distinguish distances from the centres; the coefficient of the centre's power determines the degree of an individual centre's influence in gminas. For central gminas that have logically zero distance, the natural logarithm was used instead of kilometres, which also performs the role of a weight in calculating the composite coefficient (k_s).

$$k_2 = \frac{k_1}{d} \qquad \text{(where d = distance)}$$

The k_1 coefficient was obtained differently for each indicator because of the nature of the data and due to their real impact. For trading centres' k_1, a logarithmic function was used since the availability of services for people is more important than its dimensions. Cities with the largest shopping malls are theoretically disadvantaged. The education and employment centres' k_1 were counted as linear functions, where the numerator was the indicator's absolute value and the denominator value was 200 for education and 1,000 for labour. While the data source for trade centres was an area, these two indicators' importance, in terms of the real 'human' capacity, grows with each person, as evidenced by funding universities.

$$k_s = \sum_i (\ln k_1) * m$$

(where m = k_2 for each considered city)

Values of trade, education and employment centres were calculated with the composite coefficient (k_s), as well as with the values of the inverted unemployment rate, inverted age dependency ratio and net migration rate. Three methods of data evaluation were used in this study, while the final categorisation is based on the intersections of the results. The methods are deviations from the median, z-score and rank method. The difference of the latter-mentioned method is that it does not respect the differences between values. These three procedures were applied to each indicator, and the result was a composite indicator for each method, which is equal to the arithmetic mean of the individual gminas. The average deviation from the median, the average z-score, and the average rank for each gmina were evaluated.

4. Results

The aim of this section is to present and interpret the processed values of indicators and the results of the three methods mentioned (deviations from the median, z-score, rank method), which are shown in maps (Figs. 2–4). The results are also compared with existing research. For example, Barjak (2001) evaluated the former Szczecin Voivodeship as average in economic capabilities, human resources and technological progress, while the former voivodeships of Koszalin, Gorzów and Piła, which now partially complete the current constitution of WPV, were conceived as average in economic capabilities and having labour market problems. Although this is a rather generalised statement, it is possible to proceed with it and to monitor its development.

The labour market in WPV is a problematic area. According to GUS (2016), WPV recorded a 13.3% unemployment rate, one of the four most affected regions in 2015. In 2005, it was the worst after Warmian-Masurian, with 25.6% unemployment. As these values suggest, within a decade the situation has improved significantly, similar to all other voivodeships. Large problems with unemployment were stated by Korcelli et al. (2008). The unemployment rate both in Poland and WPV was affected by Poland's entry

into the EU in 2004, when it decreased until the economic crisis in 2008 and then increased for the next four years, but never reaching 'pre-EU' values (GUS, 2016).

In 2005, the spatial distribution of the unemployment rate had a clear east-west gradient. Szczecin and its surroundings had the most favourable values. There were very low values of unemployment in the city of Police, which is tightly linked to Szczecin, and is also an important industrial city and a source of jobs. Similarly, low values were also recorded in other larger cities and their surroundings. A higher unemployment rate was measured in the central-eastern part of the region in areas with no significant job centres. A decade later, the spatial pattern had changed only slightly. The positive areas around Szczecin and Kolobrzeg increased and an improvement occurred around Cedynia. Relatively worse values were recorded in the eastern part of the voivodeship. The smallest relative change occurred in the stable area of Szczecin and Kołobrzeg, the large triangle between Goleniów, Łobeż and Stargard, as well as in the border area near Szczecinek. As Máliková et al. (2015) have indicated, the entire Polish borderland is improving from the perspective of unemployment, which complies with the observed data.

Between 2005 and 2015, migration was naturally linked to suburbanisation. There are distinct suburbanisation streams around Szczecin, as well as Koszalin. In 2005, there were also relatively high values in the seaside, above average in voivodeship boundaries and the lowest in the central area. In 2015, concentration areas also appeared along the newly-built expressway S6 leading to the sea, and surprisingly also near Wałcz. Again, less favourable values are located in remote gminas and also in the above-mentioned industrial Police. The most noticeable positive change is in the Wałcz migration area, and likewise in the Koszalin suburbs. On the other hand, changes in Szczecin suburbs are small.

Migration may also be related to the age dependency ratio. In 2005, the smallest values were in western Szczecin suburbs, as in Koszalin. Suburbanisation is less reflected in smaller towns. Other values form a kind of mosaic with a rather limited territorial pattern. High values were recorded in Szczecin and several remote gminas. A decade later, concentration into a few zones is an obvious phenomenon. Low values are typical for the suburbs of larger cities. High values are concentrated in Szczecin and Koszalin. As in 2005, the central area exhibits high values, as well as the coastal cities of Świnoujście and Kołobrzeg in 2015. One could generalise three types of areas with a concentration of elderly people. Firstly, remote areas experiencing an outflow of younger people. Secondly, locations with a pleasant environment, such as the seaside or in Pojezierze Drawskie. Finally, cities providing a greater selection of services, such as health care.

Traditionally, a problematic issue is education. Loss of students, whose numbers are measured by this indicator, is very noticeable. It is assumed that a large contributor is the declining number of members of the 20–24 year age demographic group, who form the major portion of students. By 2013, this group's numbers had fallen to 75% of their 2005 values, and the number of university students decreased by 64%. Students' requirements for a better image of universities or other 'soft' aspects may also have a certain importance.

The university city of Szczecin (61,696 students) and the college city of Koszalin (13,225), had favourable values for the year 2005 according to GUS (2006). Along with the surroundings of these two centres, Wałcz had favourable values, which reflects the relative proximity of other university centres that have an influence on WPV. These are namely, Poznań (111,182), Gdańsk (56,715), Toruń (37,866), Bydgoszcz (25,961) and Slupsk (8,129). The central coastal part of the voivodeship, where a below-average number of better-educated people reside, was also recorded by Korcelli et al. (2008), and its southwest corner had the lowest values. In 2013, Szczecin and Koszalin had the highest values that are spatially 'connected' through the axis of higher values, which flows through Wałcz. The southwest, northwest and northeast had low values. The above-mentioned decrease of students is very large and significant. According to GUS (2014), the number of students decreased to 39,129 in Szczecin, 8,626 in Koszalin and 94,399 in Poznań. In Toruń and Bydgoszcz, the number of students fell to 28,034 and 20,080 respectively, and so their k_1 coefficients were too low to influence WPV, as in Słupsk, where the number of students dropped to only 3,306. The only city where the number of students increased was Gdańsk (62,586).

In contrast, trade centres experienced a significant shift associated with ever-increasing demand. In 2005, shopping malls in WPV were located in the three largest cities, with the

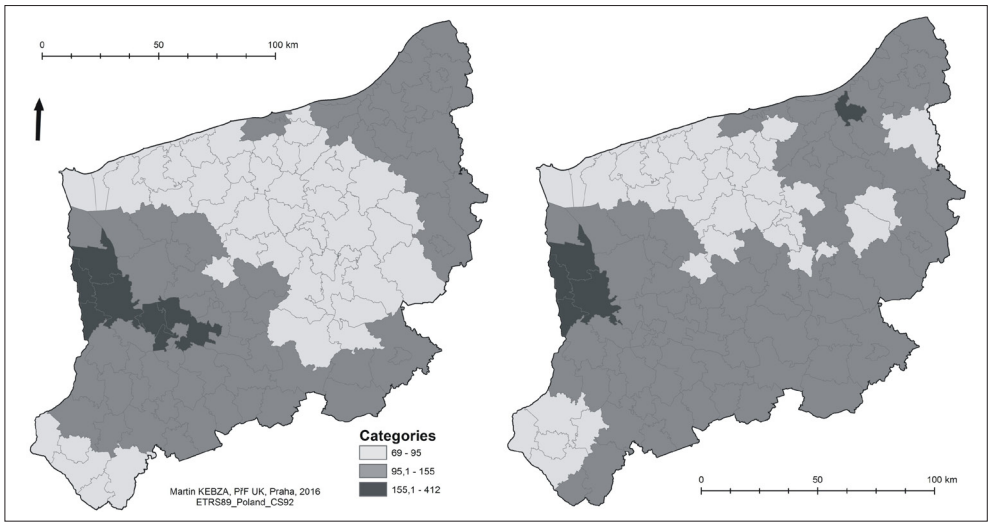

Fig. 2: Average values of all indicators' deviations from the median in 2005 (left) and 2015 (right)
Source: author's elaboration

dominant role of Szczecin. Several shopping malls are located there, the largest and also the largest in the voivodeship, was the 'Galaxy' centre, which opened in 2003 (Polska Rada Centrów Handlowych, 2016). Koszalin and Stargard played a rather minor role. The influence of Poznań entered into the voivodeship. It already had a highly-developed network of shopping malls and includes the territory of suburban gminas, which were combined with their centre for this research. Gdańsk, and much more faintly Gorzów Wielkopolski, had an influence. The highest values are thus recorded mainly in the western half of the voivodeship, particularly around Szczecin and in the northeast. The lowest values were in the central north, partly seaside area and Świnoujście.

In 2015, there was evident expansion and diffusion in the extension of the existing base, as well as the building of new shopping malls in relatively small towns (Świnoujście, Szczecinek). The shift even occurred in Stargard, but much more noticeable in Szczecin itself. The GLA area of Koszalin, where 'Atrium', the largest shopping mall in WPV (Polska Rada Centrów Handlowych, 2016), opened in 2008, had increased fivefold. This trend was similar in other regions, while some cities (Piła, Bydgoszcz, Słupsk, Gdynia) began to influence WPV with their values. The most dominant centres remained Poznań and Gdańsk. The strongest values were found near Szczecin, Koszalin, Wałcz and Szczecinek. The lowest values appeared near Cedynia and the central-northern part of the voivodeship. The highest relative changes occurred in Świnoujście due to the construction of the shopping mall, the area around Koszalin and the entire eastern part of the voivodeship also experienced a greater change.

Seven labour centres have been defined in the voivodeship for 2005 and eight for the year 2015. A further seven centres outside the voivodeship are under consideration. A decline in the number of occupied posts was noticeable, especially for the largest of them. Smaller centres experienced stagnation or weak growth. In 2005, Szczecin and its surroundings had the highest values, as well as neighbouring Police or Stargard. The influence of other centres, especially Koszalin, Szczecinek or Kołobrzeg, is obvious. Central, southwestern and west coast areas recorded low values. The spatial pattern is similar for 2015. Goleniów became an employment centre with enhanced values for its surroundings, which logically experienced the largest relative change.

Some areas with a clearly defined place in the hierarchy became evident in the presented results of using these methods (Figs. 2, 3 and 4). Szczecin and its surroundings

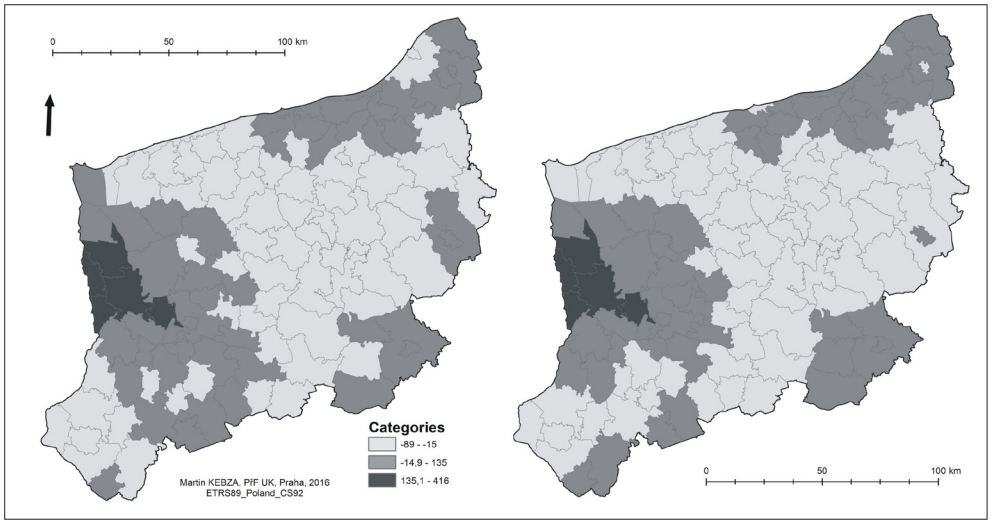

Fig. 3: Average values of all indicators' z-score in 2005 (left) and 2015 (right)
Source: author's elaboration

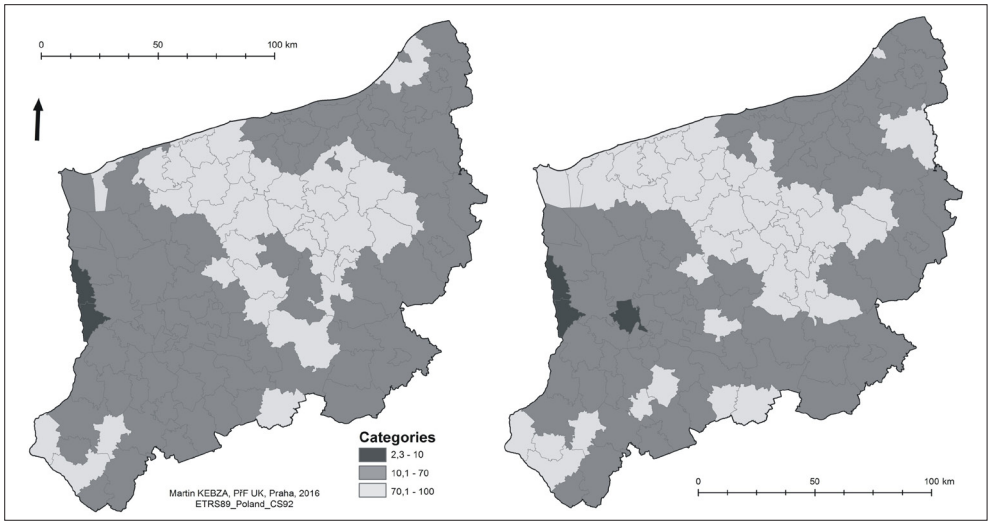

Fig. 4: Average values of all indicators' rank in 2005 (left) and 2015 (right)
Source: author's elaboration

stand out the highest due to positive values associated with their own sizes and also the industrial background of Police. Other regionally developed areas are the wider Szczecin and the surroundings of Koszalin. The value of Wałcz and its surroundings, which is at the very edge of the voivodeship and very far from the provincial city from a spatial point of view, paradoxically also extended. At the other end of the spectrum, there is the problematic central part of the voivodeship without any major leading city and the southwestern part of the voivodeship, which is linked to the border with Germany.

The evaluation of Koszalin with its surroundings as peripheral enclaves (Czyż, 2002) might sound somewhat odd. It is indeed a very progressive part of the voivodeship (Fig. 5) and may be understood as an enclave in the periphery. The difference in relative change indicator values between the western and the eastern half of the voivodeship is also interesting, but that might be attributed to Szczecin and its surrounding area's saturation.

On the basis of the analysed data, it was possible to proceed to a typology of the gminas in the WPV (see Fig. 6). The typology is based on the concept of growth poles (core–periphery; i.e. metropolitan area–periphery), while the periphery was divided into several groups. Bordering peripheries (BP) are located at the border of the voivodeship or are closely linked to it, and bordering peripheries with Germany (BPG) is a special sub-group bordering with Germany. These gminas were excluded because of the possible presence of boundary effects and their potentially different character. Another group is Pleasure peripheries (PP), gminas with a dominant role of tourism, including gminas proximity to the seaside or to Szczecin Lagoon (Bański, 2005). Last and most intriguing, is the group of Inner peripheries (IP) that fills the underdeveloped area that is not adjacent to any current administrative boundary, while not playing a dominant role in tourism, although there may be a location with appropriate localisation or realisation factors.

Besides these groups, Metropolitan and Semi-metropolitan areas are also defined. Furthermore, disparate groups of gminas with various values, here called Rest of Areas, could be understood as semi-peripheries in Wallerstein's concept. This group included developing gminas at secondary provincial centres (especially Koszalin), but also remote and edge areas benefitting from their position among several metropolitan areas in different voivodeships (e.g. Wałcz).

The metropolitan area (MA) is a relatively broad concept: one is defined in this paper, Szczecin Metropolitan Area. In addition, the provincial city also includes three other gminas (Dobra, Kołbaskowo, Kobylanka), which are characterised by high values most likely stemming from their proximity to Szczecin. Two other gminas were identified as 'semi metropoles' that are very similar to MA in their attributes. It is an area with positive values on the level of metropolitan areas, but it is a characteristically distinct unit. Police, which is immediately connected to Szczecin and has even shared public transport, is an important industrial city and cannot be viewed as a typical suburb in the centre's hinterland. Moreover, some indicators derive mainly from the presence of industry (e.g., unemployment rate). Unlike other gminas in the Szczecin MA, there is also a lack of suburban urbanistic character.

The second gmina (city) included in semi-metropolitan areas is Koszalin, which forms a smaller but developing pseudo-metropolitan region, yet the population is insufficiently large, as in Koszalin itself. Also, other cities (Goleniów and Stargard) might be considered in relation to this category. Goleniów is particularly important due to the presence of modern industry and the international

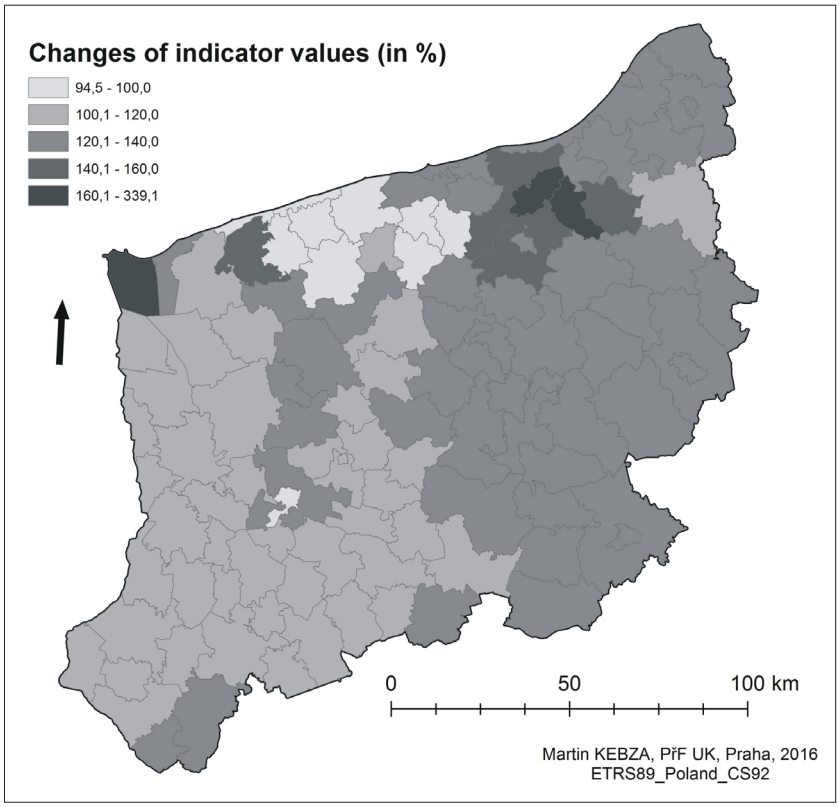

Fig. 5: Average change of all indicators values between 2005 and 2015
Source: author's elaboration

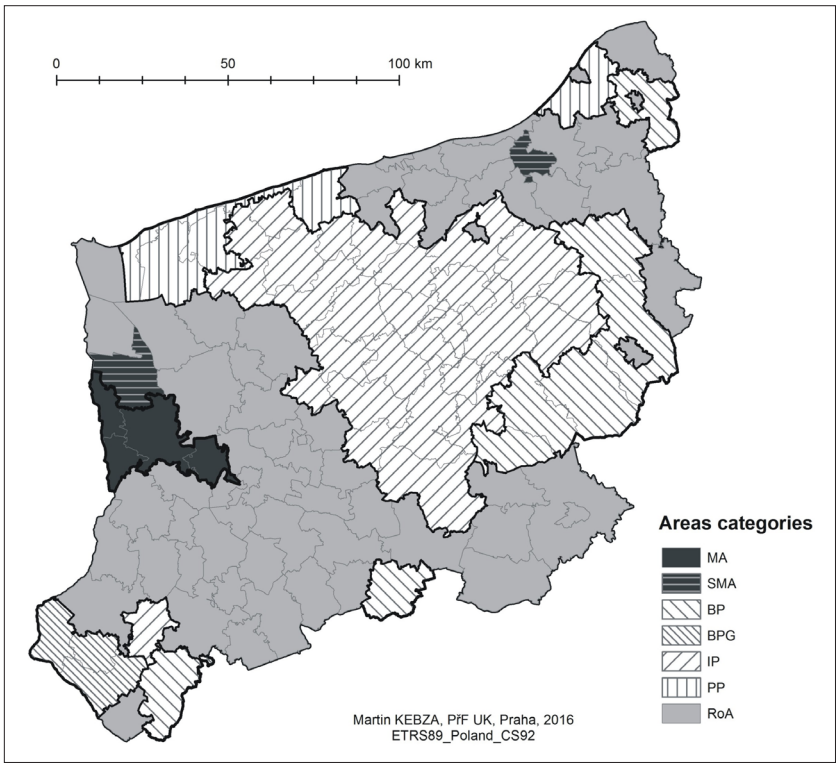

Fig. 6: Typology of areas (Legend: MA – Metropolitan area; SMA – Semi-metropolitan areas; BP – Peripheries at a border; BPG – Peripheries at a border with Germany; IP – Inner peripheries; PP – Pleasure periphery; RoA – Rest of areas). Source: author's elaboration

airport serving Szczecin, which has long been isolated. Kołoś et al. (2012) proposed linking the city centre with buses, but in 2013 a railway station near the airport was opened, which conveniently combined not only Szczecin, but also Kołobrzeg and thus the sea. Stargard is another large city, which is well connected to Szczecin, but has relatively poor socio-demographic characteristics. Both cities lack positive values for integration into this category, however.

The eastern part of the IP is relatively developing (see Figs. 5 and 6), and it is possible that in the future the area of IP may shrink or move. What is also interesting is that the IP recorded the smallest population growth (see Tabs. 2 and 3), as the decade decrease was at the 99.05% level. The work of Chaberko et al. (2012) is devoted to the problem of social exclusion and poverty. The poor and prosperous regions were defined in their research. One of the poorest regions of Poland partly overlaps with the definition of IP and BP in Figure 6. Czapiewski (2005) came to a similar conclusion. By monitoring living conditions, this author negatively evaluated the WPV central part related to the herein defined category of IP. Markuszewska (2015) also expressed a high rate of rural community decay in the region, as well as in the BPG, while in the MA it is the lowest. Generally, the IP can be viewed as a transition zone between the spheres of influence of Szczecin and other centres, especially the Tricity area.

Similarly, we may consider the BP, but in the literature this concept (at the boundaries of administrative units) is often understood as an inner periphery. Compared to the IP, however, it had significantly better results, even though its population is similarly decreasing. The issue of Pojezierze Pomorskie (Drawskie) is also associated with IP. According to Korcelli et al. (2008), it is a marginalising and physically inaccessible area of the former state farms. On the other hand, Bański (2010) considered this Lakeland as developing significantly in terms of tourism. BPG is also problematic because of its underdeveloped infrastructure (Korcelli et al., 2008). Due to unfavourable resulting values, it is not

2005	Area (km^2)	Population	Composite Indicator (Deviations)	Composite Indicator (Z-score)	Composite Indicator (Rank)
MA	638	435,232	245.98	287.27	7.90
SMA	350	149,302	170.81	148.62	25.93
BP	2,788	80,092	94.92	– 17.16	74.55
BPG	545	16,106	90.16	– 28.26	74.48
IP	6,119	227,405	85.33	– 50.33	84.77
PP	896	52,831	78.80	– 13.90	78.88
RoA	11,127	717,990	105.19	6.96	56.00

Tab. 2: Selected characteristics and average values from analytical results: 2005
Source: author's elaboration

2015	Average change of all indicators (%)	Population	Composite Indicator (Deviations)	Composite Indicator (Z-score)	Composite Indicator (Rank)
MA	114.50	443,821	232.23	270.46	10.79
SMA	133.10	149,588	169.30	112.03	25.50
BP	140.61	79,521	101.30	– 36.76	64.11
BPG	116.61	16,070	88.75	– 37.55	84.45
IP	130.05	225,248	93.53	– 42.40	76.68
PP	123.11	53,403	89.26	– 10.40	68.92
RoA	132.47	727,513	105.94	6.70	49.01

Tab. 3: Selected characteristics and average values from analytical results: 2015
Source: author's elaboration

possible to confirm the assumption of the positive influence of boundary effects. BPG is also the only compact unit, but this is obviously because of its small size.

A special case is the PP ("pleasure periphery"), which is not decreasing despite the weak resulting values. The development of tourism and an increasing share of post-productive population indicate the definition of this group. The largest category is the RoA, which contains some of the larger or medium-sized cities (e.g. Stargard, Świnoujście), the broader suburbs of Szczecin (e.g. Goleniów, Gryfino, Nowe Warpno), Koszalin's suburbs and many gminas distant from the centrse, but with relatively better resulting values. This group is highly variable. While a further division of the gminas is not the subject of this article, other studies of these areas might be appropriate.

5. Discussion

The main discussion questions concern the manner of facilitating the development of the defined peripheries. Good solutions tend towards convergence and equalised polarisation, or to concentrate on 'recovery islets' and spillover effects. This is called the dilemma of "equality × efficiency" (Bański, 2010), and decisions about this strategy may have long-term consequences. As Bański (2010) has mentioned, Poland behaves in a similar fashion to the theory of polarised development: first, saturate several major cities, then investors' interests spill over into the lower hierarchical levels. Such a trend can also be observed in the processes investigated here: Szczecin is a relatively saturated core without major socio-economic changes (Fig. 5), and Koszalin is a smaller center with a steeper rise. As Bański (2010) stated, investment in nodes and zones of activity and innovation are the most effective. The problem of WPV lies in its eccentric core position and the position of other major centres at the edges of the voivodeship, although some may form theoretical strips of activities (Szczecin–Goleniów–Świnoujście; Koszalin–Szczecinek–Wałcz).

In IP, there are several larger towns, the most populated of which is Gryfice with 24,000 inhabitants. Other interesting towns in this category are Drawsko Pomorskie, which is tied to the military industry, and Świdwin, which is located approximately in the middle of the voivodeship and is also situated on the railway line linking Szczecin with Koszalin. With the continuation to the Tricity, it forms one of the two main lines of top priority (Bański, 2010). Transport infrastructure can actually be an important factor in development processes. But as Bański (2010) added, the development of these traffic routes cannot be carried out without external sources of infrastructure and innovation funds.

It may actually be difficult to develop peripheral areas from the outside. Activating impulses from the inside and accessing external networks can be more fundamental. Even so, external impulses are also necessary for effective development. The meaning of a centres' network connectivity is emphasised by Bański (2010), because of the ability to prevent the 'tunnel' effect – when potentially developing areas become areas of transit. It may apply particularly to the areas bordering the major transport corridors. Traditional major ports are also interesting for this coastal region, especially Szczecin and Świnoujście, followed by Police. Much smaller ports may also have an interesting role in development, and the evolution of such ports is described by Noteboom and Rodrigue (2005).

Another perspective can be the development of innovation and activity zones in the form of "edge cities", in this case the Central European derivatives thereof. Garreau (1991) describes them, for the North American context, as developing units on the outskirts, with a quaternary sector, relatively lower buildings than in downtown areas, white-collar jobs, malls or airports. He also stated that their population is often higher than in central cities. Goleniów particularly suggests this for this researched regional context: a town with an international airport has potential in respect to PP (a 'pleasure periphery' – direct links with the maritime centres of Świnoujście and Kołobrzeg, but also with Szczecin).

According to Hospers (2003), it is important to have an understanding of the geographical context of the area. This can be a springboard for new combinations in market orientations, while expressing skepticism over the copying of successful projects in other countries or regions. It is important in this context to express regional identities, which could change in the development process. Their possible influence is discussed by Semian and Chromý (2014). It is questionable, however, how regional identity is developed in such uprooted areas compared with the middle of eastern Poland. A focus on the market is also important. In Korcelli et al. (2008), gminas are distinguished by their function and market orientation. This distinction in WPV, however, has created a diverse structure, which is not necessarily a disadvantage. Lack of innovation is understood as a core factor of peripheralisation (Kuhn, 2015). Innovation can be supported next to classical hierarchical spatial diffusion as a diversification of local economies or the transfer of new technologies into current activities. The problem may also be a lack of finance. Kagarlitskii (1999) states that after the first decade of post-socialist transformation, countries got into trouble due to a shortage of investment that remains in the cores, which are not present in the East. Another perception of the lack of resources can be discussed by cumulative mechanisms, particularly by selective lending

2005	Unemployment rate (%)	Net migration rate (%)	Age dependency ratio (%)	Education (k_s)	Trade (k_s)	Labour (k_s)
IP	21.64	– 0.46	16.74	37.60	7.55	48.41
PP	16.83	– 0.40	15.83	31.80	3.63	41.79
BP	19.59	– 0.10	16.62	40.96	10.92	59.33
BPG	17.89	– 0.28	16.34	35.61	12.57	39.87
MA	9.27	2.68	13.30	169.05	50.98	189.88
SMA	11.46	– 0.26	14.35	111.20	24.90	147.03
RoA	16.22	– 0.10	15.79	48.09	13.41	68.35

Tab. 4: Average values of indicators in delimited parts of the WPV 2005
Source: author's elaboration

2015	Unemployment rate (%)	Net migration rate (%)	Age dependency ratio (%)	Education (k_s)	Trade (k_s)	Labour (k_s)
IP	11.67	– 0.52	19.30	29.76	27.78	51.52
PP	9.28	0.06	20.72	24.89	24.80	43.93
BP	11.53	– 0.57	19.75	31.42	36.47	58.07
BPG	9.71	– 0.59	18.14	26.14	25.50	44.23
MA	4.91	1.90	16.11	114.51	102.70	228.96
SMA	6.12	– 0.35	22.00	79.17	73.25	140.25
RoA	8.71	– 0.15	18.99	34.18	34.80	69.95

Tab. 5: Average values of indicators in delimited parts of WPV 2015
Source: author's elaboration

to entrepreneurs (Bečicová and Blažek, 2015). Most authors note that the competition for clients is so strong that such mechanisms are suppressive. They also reflected on the example of the Moravian-Silesian region in the Czech Republic in which all surveyed entrepreneurs from peripheral areas received the credit.

The turning point of negative causalities, such as depopulation as part of the process of peripheralisation, is the influx of 'Floridan' (Florida, 2005) creative populations. Due to the competition of human capital, such an influx might not happen everywhere, universally. The human capital issue is also important because of its connection with economic capabilities (Barjak, 2001). Among other possibilities, reference to the problem of reducing the number of students suggests itself. Rather pessimistic views also argue that potentials and strategies of endogenous development are often unclear, especially in peripheries where power or innovation capacity is lacking (Kuhn, 2015).

Another 'everlasting' question is whether the results of natural evolution are convergence or divergence, cannot be clearly answered on the basis of the information used in this project. From the perspective of differentiation, the concept of 'convergence-divergence' is instead replaced by 'concentration-diffusion', in which the core stabilises and then expands (Bański, 2010). In terms of the regional context discussed here, a stabilisation of Szczecin has already taken place and is currently reflected in the smaller Koszalin. As such, a downward shift within the settlement system hierarchy is evident.

6. Conclusions

The issue of peripheries, their position in the region or their development in WPV, which is one of the sixteen Polish NUTS 2 units, has been discussed in this paper. Several specific factors and processes might be seen in the process of peripheralisation, manifested in the case study region. These include the eccentric position of Szczecin and its turbulent historical development. Within this quite specific context, the author sought to describe WPV, which has been relatively neglected in the geographic literature because of its specifics that are however equally interesting for other more discussed Central European regions. Some universal generalisations can hardly be offered due to the conceptual orientation of the article. Therefore, according to this author, it would be appropriate to develop this research at a higher (national) scale level, while maintaining necessary details and employing the principles of comparison.

This research project was limited in particular by data availability, and therefore a rather small number of indicators was used, which, however, had been selected to express the complexity of the socio-economic situation. The problem is that the data for suitable indicators is only available for territorial units at a higher aggregate level than gminas (NUTS 5). Another problem is the often relatively short temporal aspect of the measurement. Therefore, this contribution focused on just one decade, which actually coincides with Poland's entry into the EU in 2004 and the subsequent dynamics of economic development.

Metropolitan and semi-metropolitan areas, 'semi-peripheries' and peripheral areas were defined using scalar and vector data. They have been divided into several types according to location or nature. All of the regional delineations, however, are just a passing spatio-temporal construct. It is unclear how long they can persist and what may be left in the future. Such 'heritage' of regions is particularly conspicuous in Poland with connections to the pre-war arrangement of borders, but also at the scale of the entire country. Due to the territorial reform

at the turn of the millennium in Poland, it is questionable whether the previous voivodeship division has left any mark on the formation of peripheries within the new divisions, where the former administrative border zone found itself in the 'inland'.

Despite all the unfavourable characteristics and submitted proposals for development, it would be incorrect to understand peripheries as something negative, but rather as a natural part of regional systems. It can also be appealing to live in the distant and perhaps even tranquil countryside.

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MORAVIAN GEOGRAPHICAL REPORTS

Aims and Scope of the Journal

Moravian Geographical Reports [MGR] is an international peer-reviewed journal, which has been published in English continuously since 1993 by the Institute of Geonics, Academy of Sciences of the Czech Republic, through its Department of Environmental Geography. It receives and evaluates articles contributed by geographers and by researchers who specialize in related disciplines, including the geosciences and geo-ecology, with a distinct regional orientation, broadly for countries in Europe. The title of the journal celebrates its origins in the historic land of Moravia in the eastern half of the Czech Republic. The emphasis for MGR is on the role of 'regions' and 'localities' in a globalized society, given the geographic scale at which they are evaluated. Several inter-related questions are stressed: problems of regional economies and society; society in an urban or rural context; 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. Theoretical questions in geography are also addressed, especially the relations between physical and human geography in their regional dimensions.

The MGR journal publishes the following types of papers:

Original scientific papers are 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 150 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.

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Detailed Guide for Authors is available at the journal webpage:

http://www.geonika.cz/EN/research/MGR_instructAuthors.pdf

Fig. 6: One of houses in Borne Sulinowo, a former military town hidden in the West Pomeranian Voivodeship (Photo: M. Kebza)

Fig. 7: Nowe Warpno, the least populated gmina (municipality) in the West Pomeranian Voivodeship (Photo: M. Kebza)

Illustrations related to the paper by M. Kebza