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THE ANALYSIS OF THE LIVING PREFERENCES IN SLOVAKIA IN THE LIGHT OF SUSTAINABILITY

Analýza preferencií bývania na Slovensku z hľadiska udržateľnosti

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Annotation

The objective of the paper is to investigate the point of view of living preferences in Slovakia. Using a new measurement scheme of these preferences and various types of sustainable development indicators, we analyzed the preferences of where people would like to live with a sample of almost 500 respondents from various regions in Slovakia. Among the methods employed are questionnaire survey and statistical analysis. From our research, we have found a strong desire for smaller community living arrangements that extend even down to the level of village living. The strongest influence on the living preferences have number of cars and length of roads, municipal waste and built-up areas (negative correlation) and positive influence has citizens´ participation on the management of the region.

Key words

living preferences, sustainable development, regions of Slovakia

Anotace

Cieľom príspevku je preskúmať pohľad na preferencie bývania na Slovensku. Pomocou novej schémy merania týchto preferencií a rôznych typov ukazovateľov trvalo udržateľného rozvoja sme analyzovali preferencie, v ktorých regiónoch by ľudia radi žili, na vzorke takmer 500 respondentov z rôznych regiónov Slovenska. K použitým metódam patrí dotazníkový prieskum a štatistická analýza. Z nášho výskumu sme zistili silnú preferenciu po menšom komunitnom životnom štýle, ktorá siaha až na úroveň života na dedine. Najsilnejší vplyv na preferencie bývania majú: počet áut a dĺžka ciest, komunálny odpad a zastavané plochy (negatívna korelácia) a pozitívny vplyv má účasť občanov na riadení regiónu.

Klíčová slova

preferencie bývania, udržateľný rozvoj, regióny Slovenska

JEL classification: *R11, R23, I31, Q56*

1. Introduction

Krueger and Savage (2007) suggested a city-region's competitiveness is based not only on production, but social reproduction. These issues as well as the policy measures adopted by many city-regions are frequently couched in a discourse of 'sustainable development'.

Already in 1991 Lele stated that sustainable development emerged as the latest development catchphrase. A wide range of nongovernmental as well as governmental organizations have embraced it as the new paradigm of development. His literature review revealed that the concept of sustainable development lacks consistency in its interpretation, including an incomplete perception of the problems of poverty and environmental degradation, and confusion about the role of economic growth and about the concepts of sustainability and participation (Lele, 1991).

Sustainable development is such development of society, that meets the needs of the present generation, that does not compromise the ability of future generations to meet their own needs, in which each human being has the opportunity to develop itself in freedom, within a well-balanced society and in harmony with its surroundings (Brundtland definition in Borowy, 2013).

It is important to differentiate the concepts of growth (material increase in size) and development (improvement in organization without size change). One problem is that current measures of economic well-being at the macro level (i.e. Gross National Product) measure mainly growth, or at best conflate growth and development (Costanza and Daly, 1992).

Since then, lot of studies and research have been conducted to create a set of indicators and methodologies how to measure sustainable development. In this paper we focus on sustainable development indicators in the perspective of sustainable regions and correlate these indicators for Slovak regions with the results of living preferences survey conducted in 2018.

2. Sustainable development of regions and sets of indicators

Sustainable development, if it is to be an alternative to unsustainable development, should imply a break with the linear model of growth and accumulation that ultimately serves to undermine the planet's life support systems (Redclift, 2002). This is true also for urban development, achieving cities that are sustainable is a must in the current rapidly urbanizing world. In 1950 less than a third of the world´s population lived in urban areas. By 2003 that proportion had risen to 48%, the predictions are that by 2030, 61% of the population will be urbanized (Jenks and Dempsey, 2005).

Around the world, cities have grown to mega-proportions with currently 512 cities having a population of over 1 million (UN, 2018). It would seem that concentrated agglomeration is an economic necessity and a continuation of the urban evolution based on Marshall's concept of proximity reducing transport cost (Marshall, 1920). This is also connected with a decline in population in the countryside, causing depopulation in large areas of many countries, especially in Central Europe If cities are only destined to get bigger, it imposes an important question: is growth of the cities (even the smart cities) sustainable?

In this paper we argue the unsustainable urbanization with the concept of nostalgianomics which might be more sustainable. Nostalgianomics presents a concept that nostalgic sentiment can be used as an economic and creative force as an incentive for investment, especially in areas overlooked by modern convention of social planning (Cole et al., 2019).

Based on the author´s research from 2018, respondents from Slovakia where asked where they would like to live. The area around Bratislava has low favorability, yet villages score highly. Suburb living around a regional city (in Slovakia, this means a population between 70 and 80 thousand) are seen as having the highest utility. In general, we can say that the respondents had a preference for less crowded and less urban settings. Suburbs of small cities, small towns, and villages have significant utility and desire, even among the young. In this paper, we analyze the living preferences in Slovakia, i.e. the most popular regions in correlation with the sustainability indicators of Slovak regions.

2.1 Sustainable development indexes and indicators

There is a large selection of indicators, however they can mostly but be divided into three main groups — social, environmental and economical. Alternatively, a fourth institutional area could be added. The indicators are then

linked to indexes such as, for example, The Sustainable Society Index (SSI), which includes 21 indicators divided into 7 categories in 3 dimensions – Human health, the environment and economic welfare. (www.ssfindex.com/ssi/indicator-description/). Slovakia achieved a score of 8.3 in 2016, ranking among countries with relatively high sustainability (see Figure 1).

Fig. 1: SSI for Slovakia in 2016
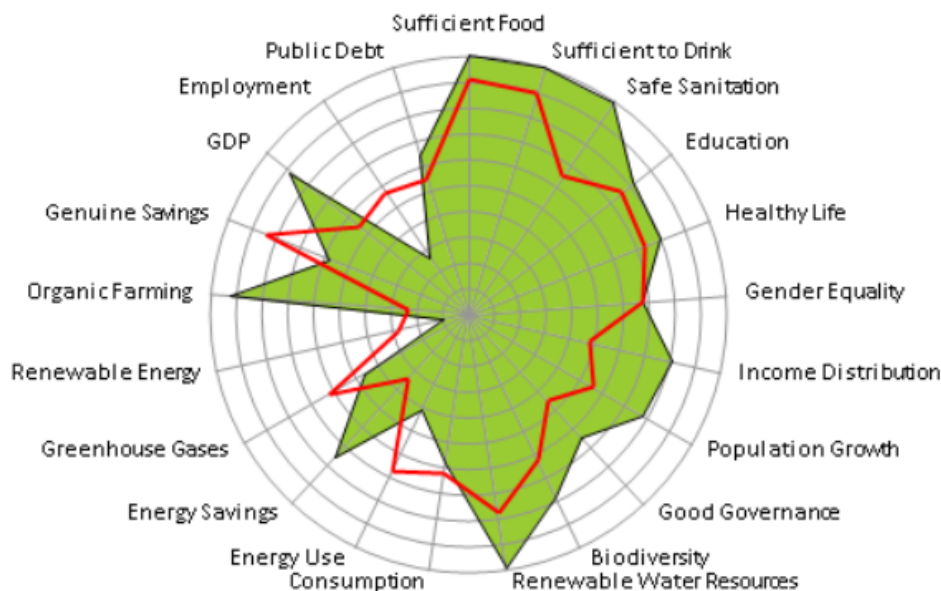
Source: The Sustainable Society Index (2016)

The spider graph in figure 1 shows the score of each of the 21 indicators of the country in green, on a scale of 1-10 (10=sustainable, 1=not sustainable). The red line is the weighted average score of all countries.

The Global Sustainable Competitiveness Index (GSCI) measures the competitiveness of countries in an integrated way. It is calculated based on 111 measurable, quantitative indicators derived from reliable sources, such as the World Bank, the IMF, and different UN agencies, the 111 indicators are grouped into 5 sub-indexes: Natural Capital, Resource Efficiency & Intensity, Intellectual Capital, Governance Efficiency, and Social Cohesion. In this index, Slovakia ranked in the 18th place out of 180 countries (GSCI report, 2017).

Based on OECD´s Better Life Index from 2017, Slovakia ranks above average in social connections, civic engagement and work-life balance, but below average in health status, income and wealth, education and skills, environmental quality, subjective well-being, housing, personal security, and jobs and earnings (OECD, 2017).

The European Union even has an indicator for sustainable cities and communities (called SDG 11) which envisions cities as environmentally resilient human settlements, which drive sustainable development, stimulate innovation and foster community cohesion and personal safety. SDG 11 calls for safeguarding the world's cultural and natural heritage and supporting positive economic, social and environmental links between urban, peri-urban and rural areas. It also stands for enhanced international cooperation and support to least-developed countries for building sustainable and resilient buildings. Monitoring SDG 11 in an EU context focuses on progress made in enriching the quality of life in cities and communities, in fostering sustainable transport and in alleviating adverse environmental impacts. SDG 11 contains 11 subindicators, including people living in poor housing condition (Fig. 2), air pollution, rate of overcrowding, level of recycling of municipal waste, artificial land cover etc. (Eurostat, 2017).

Fig. 2: SDGI Subindicator of the population of households living in poor housing condition
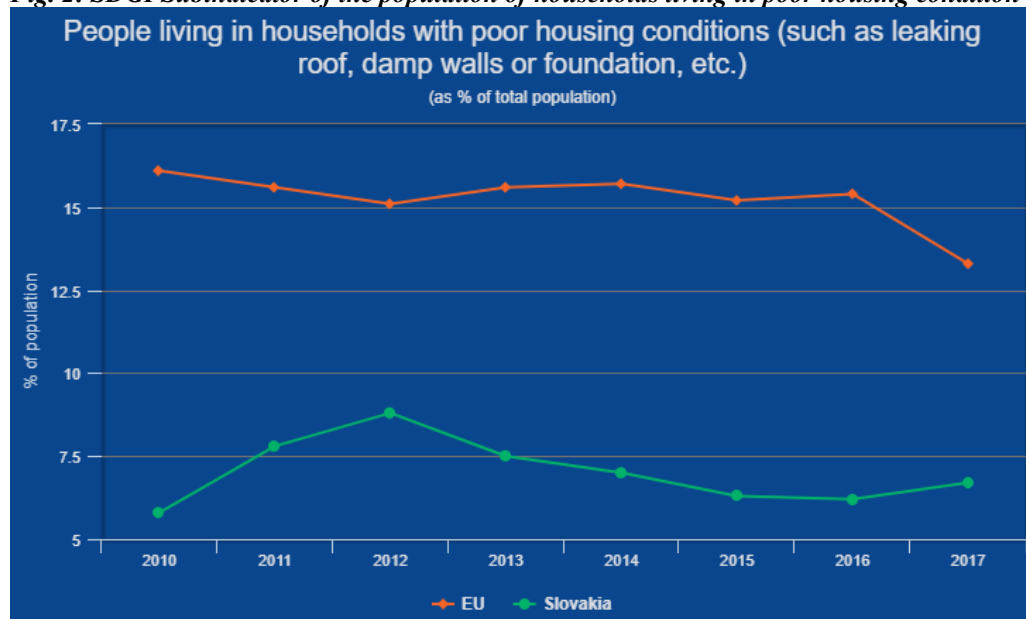
Source: Eurostat (2017)

The problem is that all these international indexes and indicators are available for the country as a whole rather than the regional and/or local level. In Slovakia, in 2005, an initiative was drafted in SAE for a new set of TUR indicators and their structure and presentation, taking into account the indicators of Agenda 21, the RIO+10 indicators of the process, the EU Lisbon indicators, the EU strategy indicators for TUR-2001 2006) and indicators monitored and evaluated at the UN level as UN CSD indicators.

Currently, a new set of national indicators is being prepared to monitor the Agenda 2030 (2015) objectives and, as a consequence, the update of the TUR indicators was completed in 2016 (the last year being 2015). Again, however, it is an assessment of sustainability at the level of Slovakia as a whole, not regions or municipalities.

3. Goal and methodology

The goal of the paper is to investigate the point of view of living preferences in Slovakia in correlation with sustainable development indicators. As already stated, there is a problem with availability of indicators at the local level. In 2006, Hudeková designed a set of indicators to monitor the sustainable development of cities, however, these are defined in a theory, but not being collected in practice:

- Topic 1 – Transport as main indicators: traffic situation, population mobility
- Topic 2 - Urbanism and construction as main indicators: sustainable urbanism, sustainable building
- Topic 3 - Environment, landscape and biodiversity as main indicators: environmental quality, Sustainable land use and biodiversity
- Topic 4 - Environment burden and environmental footprint as main indicators: city contribution to global climate change, ecological footprint
- Topic 5 - Socio-economic situation of the city as main indicators: social situation, economic situation and attractiveness of the city
- Topic 6 - Management as main Indicators: environmental and social management of local government and enterprise, citizen participation in public life.

Based on the above, we looked for indicators that were available at a more localized level and compiled an overview of sustainable development indicators in the following regions (table 1):

Tab. 1: Indicators of sustainable development at the regional level

Region \Indicators	1st Theme			2nd Theme			3rd Theme		4th Theme	
	Transportation and mobility 2017			Urbanism and construction 2017			Environment		Land environmental impact 2017	
	Road network in km	Accidents	Number of Vehicles	Municipal waste (in tons)	Municipal waste (in tons)	Completed family homes	Emissions of pollutants 2016 (in tons)	Air quality 2017	Municipal waste (in tons)	Built-up area (in km²)
Bratislava region	802.23	1,985	526,859	324,714	324,714	2,605	680.20	18.59	324,714	172.99
Trnava region	1,946.20	1,373	360,352	280,807	280,807	2,841	1,810.10	19.78	280,807	296.01
Trenčín region	1,886.55	1,210	330,767	222,573	222,573	3,677	3,831.00	18.78	222,573	241.06
Nitra region	2,590.69	1,650	422,877	314,739	314,739	3,564	30,346.00	19.21	314,739	385.60
Žilína region	2,050.77	2,045	367,593	274,936	274,936	5,256	6,296.80	20.54	274,936	264.89
Banská Bystrica region	3,209.60	1,335	339,438	225,051	225,051	2,786	6,390.90	20.63	225,051	341.99
Prešov region	3,189.32	2,041	361,388	238,309	238,309	4,019	4,363.80	24.63	238,309	322.66
Košice region	2,381.44	1,572	368,374	255,824	255,824	2,365	5,968.50	22.60	255,824	344.58

Region /Indicators	5th Theme						6th Theme			
	Social situation 2017				Economic situation		Self-government management		Citizens' participation	
	Number of citizens	Population density (per km²)	± pop. from migration	Total change in population 2017	GDP per capita 2016 (at current prices in thousands €)	No. of unemployed 2017 (registered job seekers)	Funds available for the social area 2017 (in €)	Funds earmarked for the environment 2017 (in €)	Voter participation at regional election 2017	Participation budget score
Bratislava region	641,892	314.9	6,673	8,946	35,790.1	11,732	52,914,218	7,605,570	31.34%	1
Trnava region	561,156	135.49	1425	1,216	16,297.77	9,824	23,488,315	23,760	24.74%	0.5
Trenčín region	588,816	130.63	-490	-1,452	12,802.91	13,199	23,372,181	669,188	26.32%	1
Nitra region	680,779	107.15	-592	-2,087	12,923.85	17,949	41,895,530	0	26.84%	0.5
Žilína region	690,788	101.48	-411	245	12,888.9	19,311	39,889,383	0	33.84%	1
Banská Bystrica region	651,509	68.82	-990	-1,721	10,917.47	34,300	28,860,677	0	40.30%	0.5
Prešov region	822,310	91.73	-1,523	1,516	9,069.69	46,501	29,413,355	3,512,732	29.40%	1
Košice region	798,103	118.24	-370	1,114	11,754.07	42,767	30,200,744	0	26.73%	0

Source: SHMU, (2017), The Statistical Office of the Slovak Republic, Results of regional election in 2017 and budgets of the regions for 2017

The air quality indicator was assessed as the average amount of air pollution according to the limited values for protection of human health for 2017 (SHMU, 2017). The Citizen Participation Indicator was assessed on the basis of participation in regional elections and whether the city had a participatory budget mechanism in place, allowing citizens to take part in decision-making of public finances (0 - none, 0.5 - but only for a regional city, 1 - at the regional level). Other measurements were taken from sets of indicators for given themes from the website of the Ministry of the Economy of the Slovak Republic, which is evaluated at the national level. For the regional level, data was obtained from the Statistical Office of the SR and were the most up-to-date (2016 or 2017).

To fulfill the objective of the paper, we correlated the indicators in Tab. 1 with the results of research focused on the living preferences of Slovaks. A survey was conducted in September - November 2018, the total number of respondents was 496 from all over Slovakia. The survey was widely disseminated through social media and mass e-mail. Respondents were asked to rank 1) hand-drawn pictures of streets and 2) historic micro-regions of Slovakia. For the purpose of this contribution, the second question is a substantial one. We wanted to find out which region the Slovaks would choose for living. They should select 3 of the 25 historical regions of Slovakia, which they find attractive for life and living. From these evaluated responses, the historical regions were then aggregated into 8 geographically similar regions.

4. Results

The lower the score, the better ranking of the region based on living preferences of the respondents, i.e. the region that is more popular for living. Due to limited length of this paper, we present only the results where correlations where significant (tab. 2). For some correlations, we adjusted the indicators, e.g. we added as an indicator the number of vehicles per number of inhabitants.

Tab. 2: Indicators of sustainable development correlated to living preferences

Region/Indicators	Rating of Regions	Road network in km / Area of regions in km^2	Number of vehicles / No. of citizens	Transport of goods (in thousands of tons) / Road network in km	Municipal waste (in tons) / 1 citizen
Bratislava region	2.76	0.42	0.82	16.15	0.506
Trnava region	2,.2	0.46	0.64	3.33	0.500
Trenčín region	3.07	0.42	0.56	9.12	0.378
Nitra region	3.14	0.41	0.62	1.51	0.462
Žilína region	3.96	0.30	0.53	3.55	0.398
Banská Bystrica region	3.78	0.34	0.52	0.76	0.345
Prešov region	3.31	0.35	0.44	1.97	0.290
Košice region	3.21	0.35	0.46	1.92	0.321
Correlation coefficient		-0.917197378	-0.591850739	-0.50942049	-0.5610753034

Region/Indicators	Rating of Regions	Built-up area / Area of regions	Population density (per km^2)	Voter participation at regional election
Bratislava region	2.76	0.090	314.9	31.34%
Trnava region	2.72	0.069	135.49	24.74%
Trenčín region	3.07	0.054	130.63	26.32%
Nitra region	3.14	0.061	107.15	26.84%
Žilína region	3.96	0.039	101.48	33.84%
Banská Bystrica region	3.78	0.036	68.82	40.30%
Prešov region	3.31	0.036	91.73	29.40%
Košice region	3.21	0.051	118.24	26.73%
Correlation coefficient		-0.823728104	-0.618454952	0.721376146

Source: authors

The first observed strong indirect dependence (-0.917) occurs in the road length indicator. It follows that the more roads in the region, the worse the rating. It can be assumed that this is due to busy and dusty environments, although

the air quality indicator did not appear to be significant in the analysis (-0.002, i.e., a very weak to no correlation). The issue of transport and mobility is also related to the number of vehicles on the road per capita, with a medium-strong indirect dependence (-0.592), as well as for the indicator "transport of goods (in thousands of tons) / road network in km" (-0,509). Similarly, the volume of municipal waste / population (moderate indirect dependence of – 0.561), built-up area in relation to the total area of the region (high correlation of – 0.824) and also the population density per km^2 itself (-0.618) could have a negative impact on living preferences. The only sustainability indicator that significantly affects living preferences is participation in regional elections, where a strong direct dependency (0.721) has emerged from the analysis, i.e. the higher the turnout, the higher the county gained. This indicator belongs to the social management of regional government and the result indicates that a region where citizens are more involved in public affairs is more preferred for life, i.e. people create a public choice environment in which they want to live (choose politicians who represent their interests).

5. Conclusion

In the paper we presented the point of view of living preferences in correlation to sustainability indicators at the regional level in Slovakia. The biggest problem in analysis of these correlations was in low availability of data on sustainability indicators at the regional level. The lack of data on sustainability indicators is a long term issue. There are many methodologies for international comparison, but these are focused on national data only. At the moment, the Slovak methodology at the national level is being revised in accordance with Agenda 2030. Although a methodology for regional and local sustainable development indicators was proposed as far back as 2006 and pilot tested on six municipalities (Hudeková, 2007), there is no continuity in using these indicators nor using in all regions or municipalities in Slovakia. Some municipalities try to measure and evaluate their own indicators of sustainable development, but these are very seldom, with random years of evaluation.

From our analysis, there are several substantial findings:
- living preferences are negatively influenced by the transportation and mobility (the more roads and more vehicles, the less popular the region is);
- living preferences are negatively influenced by urbanism (the more municipal waste and more built-up area, the less popular region is);
- living preferences are positively influenced by citizens´ participation on the management of the region (the higher participation at the regional election, the more popular the region is).

Transportation and mobility are very important from the point of view, that owning a car in a big city is problematic; not so much in a small town. No one would move to smaller towns without a car as bus/train connections are limited (almost non-existent on weekends) Bus transport does not satisfy all transportation needs and therefore the need to own a car is quite big (number of cars per 1000 inhabitants in Slovakia was 295 in 2009, 347 in 2010, 390 in 2016 – The Slovak Statistical Office). Commuting could be reduced by using the means of telework (Murray Svidronova et al., 2016) and thus the amount of cars could be lower and the regions more attractive.

Urbanism is being driven by corporate desires/needs, not individual desire/needs. The needs of corporation and individuals are both questionable, but it is the individual that is being asked to make the greater sacrifice – most of the build-up areas are due to the developers´ activity on previously undeveloped land. The corporations are also bigger producers of municipal waste (Soukopová et al., 2017).

From the point of view of citizens' participation, it can be stated that this indicator not only contributes to the sustainability of regions but also to living preferences. This confirms the need for social innovations in the public sector, involving citizens in providing public services (see, for example, Merickova et al., 2015). Further research in this area could focus on this area and link social innovations with nostalgianomics to address abandoned objects (seek innovative solutions to re-use and repurpose abandoned objects by involving citizens).

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