ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume 64 233 Number 6, 2016
http://dx.doi.org/10.11118/actaun201664062141

FACTORS AFFECTING DEVELOPMENT OF RURAL AREAS IN THE CZECH REPUBLIC: A LITERATURE REVIEW

Jakub Straka[1], Marcela Tuzová[1]

[1] Department of Marketing and Trade, Faculty of Business and Economics, Mendel University in Brno, Zemědělská 1, 613 00 Brno, Czech Republic

Abstract

STRAKA JAKUB, TUZOVÁ MARCELA. 2016. Factors Affecting Development of Rural Areas in the Czech Republic: a Literature Review. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 64(6): 2141–2150.

Rural development is a topic that is frequently discussed, but there is no consensus on how to measure it. Various criteria exist such as economic, social, cultural or environmental, which can be used to assess rural development. Therefore the main question addressed in this paper is to identify what factors and indicators are suitable for scrutinizing development of rural areas under the conditions of the Czech Republic. For this purpose, articles focused on Czech rural regions were analysed. Fourteen most frequently used indicators were identified based on the comprehensive analysis of the selected Czech studies.

Keywords: rural areas, rural development, regional development, factors of rural development, indicators of rural development

INTRODUCTION

The aim of the paper is to analyse articles focused on Czech rural regions and to identify factors and indicators which are used to examine the development of the Czech Republic.

There are number of economic, social, cultural or environmental factors and indicators that can be used to assess rural development. This can make it difficult to choose the ones that would be suitable for describing development of rural areas. Although the phenomenon of rural development has been discussed by many authors, authorities and institutions for decades, there is still no consensus on how to measure it. This phenomenon is also often misinterpreted and misunderstood. Especially in media (rural) development is frequently considered as positive development of Gross Domestic Product (GDP) per capita or regional GDP per capita. However, this approach is not correct mainly because it is a very narrow conception for measurement of regional development. Regional GDP, primarily focused on economic development, says nothing about living standards of population or social, cultural and environmental development of the region. Based on the fact, measurement of development using GDP per capita has been criticized by researchers over the last few decades (e.g. Mankiw, 2000; Michalek & Zarnekow, 2012). It is obvious that knowledge how to objectively measure rural development is a main goal of many subjects.

Current state of research in the Czech Republic is still insufficient and findings about this issue have two main deficits. Firstly, it is unclear which factors and indicators should be used for measuring Czech rural development, and secondly, what level of region (e.g. county – NUTS 3 or Local Administrative Unit – LAU 2) is appropriate for rural development assessment. The aim of this paper is to eliminate these deficits and find answers to these questions.

While rural development is one of the main goals of the EU development policy, there does not exist a unified approach on how to define and measure it. Firstly, there are many similar terms associated with the development as rural, regional, remote, local, peripheral etc. which make the definition difficult. Secondly, there are many differences among EU countries in economic, social, cultural

and environmental factors causing that there is no consensus on how to define rural areas and at what level – local (usually municipalities) or regional. Thirdly, there is neither consensus on which of the mentioned factors are suitable for characterizing the rural development (Clark *et al.*, 1997) and whether to use weights to distinguish importance of factors.

Chromý *et al.* (2011) identified two approaches to define a rural area, broad and narrow. In broad approach, whatever is not urban is considered rural. These rural areas also differ in socioeconomic, sociocultural or institutional environment. On the other hand, the narrow approach defines rural areas as areas with low population density and predominant primary sector (Jančák, 2003 and Blažek, 2004 In Chromý *et al.*, 2011).

For example, based on the methodology applied by the German Federal Office for Building and Regional Planning, Spellerberg *et al.* (2007) consider as rural all districts with population density lower than 140 inhabitants per square kilometre, where at least 40 % of population live in small communities. Different approach to defining rural areas is used in England. Areas are defined as rural if they are outside settlements with more than 10,000 resident population (Bibby, 2013). The classification then assigns rural areas to one of six categories according to their type. Although this approach may seem complicated, in our opinion it reflects the current situation. It seems that the existence of many types of rural areas is the main reason why there is still no consensus on the definition.

Despite those many definitions of rural areas, the most common is the definition of the European Commission (hereinafter the "EC") based on Eurostat-OECD method. This regional approach defines rural areas based on 1 km^2 grid cells where predominantly rural regions are areas where the share of population living in rural grid cells reaches 50 % and more. These areas must also satisfy two conditions: a maximum population density threshold of 300 inhabitants per square kilometre and a maximum population of 5,000 inhabitants in contiguous cells below the density threshold (Eurostat, 2015).

While the definition of the EC is broadly used for comparison of international regions, it should be adjusted in the specific terms of the Czech Republic (large number of municipalities in regions) (Matoušková, 2011). Institutions and researchers usually use a combination of approaches. For example, the Czech Statistical Bureau definition of rural areas follows the definition of EC and OECD. Definitions used by Czech researchers (e.g. Binek *et al.*, 2007; Pospěch *et al.*, 2009) are usually based on the municipal level (LAU 2) as municipalities up to 2,000 (Bernard, 2011; Hrabánková & Trnková, 1996) or 3,000 inhabitants (Perlín *et al.*, 2010); often with a population density threshold of 100/150 inhabitants per square kilometre, which is based on the previous Eurostat/OECD method (Eurostat, 2015). But for example Perlín *et al.* (2010) state that the threshold of 100 inhabitants per square kilometre is not suitable for the specific situation in the Czech Republic (its use will cause reduced diversification of region types) and should not be included in the definition of rural areas. It must be stressed that authors often use municipalities with threshold of 3,000 inhabitants due to the availability of statistical data and the fact that this threshold is stipulated by Czech law as a condition, under which a municipality can become town (Act no. 128/2000 Sb., on Municipalities).

Although there exist also many other approaches based on the geographical location, land types, culture or lifestyle, it is difficult to apply them due to their subjective concept. It is for this main reason why the commonly used definitions are based on three main aspects: population density threshold, percentage of population living in rural areas, and number of inhabitants in the LAU 2.

There are many factors and indicators which can characterize rural development. These factors can be often found in those many definitions of rural development. For example, Chambers (2013: 147) defines the rural development at a general level based on the definition of the World Bank: "Rural development is a strategy to enable a specific group of people, poor rural women and men, to gain for themselves and their children more of what they want and need". Chambers further adds that "The group includes small-scale farmers, tenants, and the landless". Rural development by Moseley (2003: 4) is characterized as a "sustained and sustainable process of economic, social, cultural and environment change designed to enhance the long-term well-being of the whole community". The US Department of Agriculture (USDA, 2006: 1) defines rural development as an "improvement in the overall rural community conditions, including economic and other quality of life considerations such as environment, health, infrastructure and housing". This view is shared also by Madu (2007) who considers rural development as a process, which should improve all aspects of human life. Anríquez and Stamoulis (2007: 2) defined rural development as a "development that benefits rural populations; where development is understood as the sustained improvement of the population's standards of living or welfare". They also argued that from 1970s' the rural development was connected with increasing standards of living to reduce rural poverty. It is noticeable, that there are few main factors which are often used in definitions of rural development. The most common are definitions focused on economic, social and environmental spheres of human life in context of increasing standards of living or well-being in general. While the researcher use the above mentioned basic factors in a lesser or greater degree, there are often disagreements about other factors and indicators that should characterize rural development.

Chromý *et al.* (2011) consider key factors of rural development to be the size of municipality and its position within the region (see also Binek *et al.*, 2007 or Hampl, 2005). Also the tradition of local community, quality of regional milieu and adaptability of key rural actors (e.g. government representatives or interest groups) are regarded as important. Hlavsa (2010) mentions demographic factors (e.g. social, infrastructural and economic-production) to be relevant. Indicators mentioned by Kovárník (2010) in his research include the GDP, unemployment or expenses and employees. Bernard (2012) states that hard and soft indicators are important for development of rural community. Hard indicators include, for example, availability of jobs or population growth and age structure, while soft indicators include the quality of the environment, human capital or participation of citizens. Blažek (1999) found four main factors of regional development in the Czech Republic. These are vertical and horizontal geographical position of regions, economic structure and its diversity, quality of human resources, and quality of the environment. Three similar factors were identified also by Dostál and Hampl (2002): vertical and horizontal geographical position and unfavourable specialization of the economic base of the regions. Bernard in his article "The Endogenous Developmental Potential of Small Rural Municipalities – The Difficulties of Searching for and Measuring Impact" selected three main factors with sixteen indicators – structural and geographical development conditions of municipality (e.g. accessibility to regional and micro-regional centres or the number of inhabitants), community of the municipality (e.g. human or economic capital) and development of the municipality (e.g. quality of services for inhabitants).

MATERIALS AND METHODS

The article is based on studies on the development of rural regions/areas in the Czech Republic and other European countries (Turkey also considered). In order to analyse only quality articles, internationally renowned citation database Scopus was selected. In order to find suitable articles no older than 10 years, the following keywords were used: indicators/factors/determinants of rural development, rural areas development, sustainable rural development, regional development, rural development index, etc.

First, 307 articles were chosen based on the analysis of title, keywords and abstract. These articles were studied in detail and finally only 21 of them were selected. Articles were excluded due to inadequate geographic focus or unidimensional approach to the development of rural areas (analysed less than two factors influencing rural development). Of these, 10 articles were focused on the Czech Republic. They were further processed and analysed in detail (Tab. I). The remaining 11 were focused on other European countries (Boncinelli *et al.*, 2015; Bulderberga, 2015; Caschili *et al.*, 2015; Grgić *et al.*, 2010; Mascarenhas *et al.*, 2010; Michalek & Zarnekow, 2012; Ramos, 2009; Sánchez-Zamora *et al.*, 2014; Spellerberg *et al.*, 2007; Van Zeijl-Rozema & Martens, 2010; Yilmaz *et al.*, 2010). These articles were not been processed in a table. They were analysed to determine the foreign authors' approach to rural development and whether their approach differs from that of the Czech authors. Detailed analysis was focused especially on the geographic aspect (territorial unit), the nature of used data, and factors and indicators of rural development pursued by authors. Also basic findings were commented. In the next step, a graphic overview of all indicators used in selected articles focused on the Czech rural development was compiled into a mind map using XMind.

To determine whether it is appropriate to use weights to distinguish importance of factors, electronic survey (implemented via the Umbrela system of Mendel University in Brno) among academic staff of Czech universities and representatives of the Local Action Groups was conducted. A total of 54 academic staff dealing with rural development and 183 local action groups were addressed and 123 completed and error-free responses were obtained. Contacts for respondents were obtained from the websites of universities and the database of the National Network of Local Action Groups. Data was processed in MS Office environment.

RESULTS AND DISCUSSION

Geographical focus and used methodology

Tab. I shows that the majority of articles dealing with the issue of the development of rural areas in the Czech Republic does not analyse the entire republic, but mainly focuses on smaller geographical areas. The largest geographical units – regions (NUTS 3) – are used by Martinčík & Šlehoferová (2014) and Martinčík (2008). However, the majority of authors use smaller territorial units to assess rural development. In particular, these are rural villages (LAU 2) – see Bernard (2011, 2012), Šimková (2008) and Pospěch *et al.* (2009) or districts (LAU 1) – see Živělová & Jánský (2008) and Hlavsa (2010). In case of unavailability of information, a number of authors often resort to evaluating rural development at the level of authorised municipal authorities – see Vaishar & Zapletalová (2009). These are the territories of several municipalities within the territory of an authorised authority.

The focus of the analysis of rural development on smaller territorial units is in accordance not only with the recommendations from Bernard (2011) and Perlín *et al.* (2010) or Hampl (2005), who draw attention to the specific territorial division of the Czech Republic. As already mentioned in the literature review, these authors identified

the extensive territorial fragmentation of the Czech Republic. This fact can very often negatively impact the results when researching the development of larger territorial units. In assessing territories for example at NUTS 3 level (in some cases also LAUs), a considerable distortion of results can occur, which leads to incorrect conclusions. On the other hand, this fact is likely to influence only the results of objective (statistical) data. When researching the subjective living standards of the population (which are often associated with the development of the given region – e.g. USDA, 2006; Anríquez & Stamoulis, 2007), Pospěch *et al.* (2009) did not detect any significant differences between rural and non-rural areas.

Tab. I also shows a difference in the attitude towards the size of a rural municipality. The definition given in the Act on Municipalities (see above) is most commonly used, setting a boundary at 3,000 inhabitants. We must, however, add that this definition cannot be considered fixed, which can be supported, for example, by the works of Bernard (2011, 2012) who uses boundaries of both 3,000 and 2,000 inhabitants.

Based on the analysis of the articles, we can deduce that the choice of a rural area definition mainly depends on the issue the author is studying at the moment (Bernard, 2011, 2012) or on the data availability.

The majority of analysed studies make use of data of an objective nature. Only two studies focusing on the quality of life (Šimková, 2008; Pospěch *et al.*, 2009) examine subjective data. While the nature of data (subjective, objective) used to evaluate the development differs depending on the set goal of the study, we are of the belief that in several of them, the use of only one type of data is not entirely appropriate. In complex assessment of rural development, we hold the opinion that it is best to use both objective and subjective data.

European studies dealing with the issue of regional development or rural development mostly resort to research of rural areas at different levels of territorial division, such as NUTS 2 (e.g. van Zeijl-Rozema & Martens, 2010; Ramos, 2009), NUTS 3 (Grgić *et al.*, 2010; Spellerberg *et al.*, 2007), LAU 1 (Michalek & Zarnekow, 2012; Mascarenhas *et al.*, 2010; Sánchez-Zamora *et al.*, 2014) and LAU 2 (Boncinelli *et al.*, 2015; Sánchez-Zamora *et al.*, 2014). Mostly, the focus lies on the identification of differences between rural and urban areas within a country in question (see also Bulderberga, 2013; Grgić *et al.*, 2010). Other authors focus on studying one region in a specific country (van Zeijl-Rozema & Martens, 2010; Sánchez-Zamora *et al.*, 2014; Mascarenhas *et al.*, 2010; Boncinelli *et al.*, 2015; Ramos, 2009; Caschili *et al.*, 2015; Yilmaz *et al.*, 2010). Spellerberg *et al.* (2007) to compare the situation of regional disparities in the context of other European countries.

The approach of individual foreign authors to the definition of rural areas is not uniform. Most authors adapt the definition of a rural area to the needs and purposes of their research (see also Sánchez-Zamora *et al.*, 2014). Some refer to the definition of rural areas given by OECD (Grgić *et al.*, 2010; Boncinelli *et al.*, 2015), but more common are other, individually modified definitions of rural areas. Spellerberg *et al.* (2007) define rural areas on the basis of the population density factor and rurality which is related to low levels of settlement and focus on districts (NUTS 3) with fewer than 140 inhabitants per square kilometre and with at least 40 % of the population living in small communities.

Almost all of the examined European studies work with objective secondary data available from national specialised databases or official statistics. Alternatively, they also use secondary subjective data when evaluating the objective statistic data (see also Spellerberg *et al.*, 2007), who in their paper focus on the quality of life while using both subjective and objective indicators (such as objective conditions and standard of living, perception of quality of life from the welfare survey). Only some of the analysed foreign studies were based on primary data obtained using the survey method (e.g. Grgić *et al.*, 2010; Mascarenhas *et al.*, 2010; Ramos, 2009).

Factors used to describe development of rural areas

As mentioned in the literature review, there is a number of factors which can be used when assessing development of a region and rural areas. Tab. I shows that Czech authors use not only different names, but also different numbers of factors. Essentially, what we encounter in their works is a subjective approach depending on the goal and focus of the study.

Without deeper analysis, however, it is impossible to say on a general level whether a different name or number of factors automatically results in differences in the indicators used. The name and number of factors is more or less irrelevant. Often a name of a single factor in fact covers a whole series of indicators. This is caused, for example, by the methodology of the given study, which mathematically groups the indicators being analysed. The authors are then often forced to name a given set of indicators themselves so that the name best characterizes the set as a whole (Perlín *et al.*, 2010; Bernard, 2011, 2012).

Our analysis shows that even though authors are dealing with a similar topic at the same level of territorial units (e.g. Živělová & Jánský, 2008 and Hlavsa, 2010), they make use of different sets of indicators. We ascribe this fact to the mentioned issue of fragmentation of territories in the Czech Republic or the lack of secondary data, which, especially at the municipalities level (LAU 2), must be replaced with other available indicators.

Despite that, Tab. I allows us to identify the main area of development the studies have examined. These are mainly the demographic area (referred to by names such as “demographic” or “growth

potential"), economic area ("macroeconomic performance", "economic production" or "economic"), social area ("social" or "social situation") or the area of location and facilities of the municipality ("structural and location conditions of village development", "facilities in rural communities" or "infrastructure").

In the context of studies focused on other European countries, Yilmaz *et al.* (2010) emphasise that it is suitable to use a multidimensional approach when studying rural areas. This article thus analyses only papers focusing on studying rural development from multiple perspectives.

Similarly to the Czech studies, foreign studies also use different factors and indicators when studying rural areas. Again, there is neither consensus on the names of the factors or indicators used nor their number. This reflects to a large extent the availability or even existence of secondary data at the level of studied territorial units. However, we

I: *Main characteristics of the Czech studies (Source: authors' results)*

Author(s)	Year	Journal	Geographic focus	Factors of rural development
Martinčík	2008	Economics and Management	CZ, NUTS 3	macroeconomic performance, growth potential, quality of life
Simková	2008	Economics and Management	CZ, LAU 2	facilities in rural communities, transport accessibility, possibility of cultural and social activities, quality of social services, feeling of safety, quality of environment, employment opportunity
Živělová & Jánský	2008	Agricultural Economics	CZ, LAU 1, South Moravian region (NUTS 3)	transport and technical infrastructure, civil and technical amenities, health care, unemployment, average age, basic characteristic
Pospěch et al.	2009	Agricultural Economics	CZ, rural (municipalities up to 2,000 inhabitants) and non-rural areas	relationship with family and friends, emotional well-being, material well-being, health, work and productive management, feeling part of local community, personal safety
Vaishar & Zapletalová	2009	Moravian Geographical Reports	CZ, authorized municipal offices (up to 2,000 inhabitants)	demographic, economic, social
Hlavsa	2010	Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis	CZ, LAUs 1 within Hradec Králové region (NUTS 3)	demographic, economic-production, social situation, infrastructure
Perlín et al.	2010	Geografie	CZ, LAU 2 (up to 3,000 inhabitants)	size, growth, human potential, housing
Bernard	2011	Czech Sociological Review	CZ, rural LAU 2 (municipalities up to 2,000 inhabitants; 50 % go to school or work)	structural and location conditions of village development, internal capacity of communities in the municipality (endogenous development potentials)
Bernard	2012	Geografie	CZ, rural LAU 2 with population up to 3,000 inhabitants	economic opportunities, education and demographic indicators, local public affairs, political participation and housing stability
Martinčík & Šlehoferová	2014	Economics and Management	CZ, NUTS 3	macroeconomic performance, growth potential, quality of life

can summarise that foreign authors deal mostly with economic (see also van Zeijl-Rozema and Martens, 2010; Michalek & Zarnekow, 2012; Sánchez-Zamora *et al.*, 2014; Mascarenhas *et al.*, 2010; Bulderberga, 2013; Boncinelli *et al.*, 2015; Ramos, 2009; Caschili *et al.*, 2015), social (van Zeijl-Rozema & Martens, 2010; Michalek & Zarnekow, 2012; Sánchez-Zamora *et al.*, 2014) or socio-economic (Yilmaz *et al.*, 2010), environmental (van Zeijl-Rozema and Martens, 2010; Michalek & Zarnekow, 2012; Sánchez-Zamora *et al.*, 2014; Mascarenhas *et al.*, 2010; Boncinelli *et al.*, 2015; Yilmaz *et al.*, 2010; Ramos, 2009), demographic (van Zeijl-Rozema & Martens, 2010; Sánchez-Zamora *et al.*, 2014; Bulderberga, 2013; Boncinelli *et al.*, 2015; Yilmaz *et al.*, 2010; Caschili *et al.*, 2015) and infrastructural factors (van Zeijl-Rozema & Martens, 2010; Mascarenhas *et al.*, 2010; Yilmaz *et al.*, 2010; Ramos, 2009). The issue of using different indicators on different spatial scales and the general lack of coordination in the use of individual factors and indicators has been pointed out in particular by Ramos (2009).

Grgić *et al.* (2010) mention that the biggest difficulties associated with rural life are of economic nature, lack of employment opportunities and inadequate range of professions, together with a lower income compared to the city. On the other hand, Spellerberg *et al.* (2007) add that the differences between individual rural areas are not due to economic situation, but the potential of population and infrastructural factors. Boncinelli *et al.* (2015) see the basic differences between urban and rural municipalities in the availability of services (often included in the factor of infrastructure) and the number of inhabitants. Boncinelli *et al.* (2015) stress that quality of life in rural areas largely reflects the availability of basic services, where the key role is played by health care and education. Ramos (2009) also highlights the accessibility of health care as a significant factor in the development of rural areas. It is interesting that, for example, according to Bulderberga (2013) and Ramos (2009), agricultural activities are often included as one of the factors of rural development, which are not seen as noteworthy in the Czech studies with the exception of Hlavsa (2010), who includes agriculture in the factor of economic production.

Results and recommendations of articles focused on the Czech Republic

The analysis of results of the Czech studies allows us to make several important observations. Martinčík (2008), Perlín *et al.* (2010) and Bernard (2012) found that Czech rural areas and villages are non-homogenous due to the potential of their development. According to Perlín *et al.* (2010) there are 8 basic types of rural areas. The type of rural area is affected by the geographical location. When studying rural development, it is thus vital to always consider the local specificity as recommended also by Michalek & Zarnekow (2012), van Zeijl-Rozema & Martens (2010) and Mascarenhas *et al.* (2010). These authors recommend the involvement of local partakers who know the area best.

According to Martinčík (2008), a suitable tool for researching rural development in the Czech Republic is the method of n-squares based on a magic rectangle which in graphic form points to the successfulness of the state policy in terms of macroeconomic stability. The main advantage of this method is its simplicity, clarity and universal use in all regions. It should be noted that this method is not recommended for use in narrowly-defined profiles issues. However, Martinčík (2008) mainly focuses on economic-social factors, where he distinguishes macroeconomic performance, growth potential, and quality of life. In a multidimensional perspective of rural development, Hlavsa (2010) recommends the use of a composite indicator as a universal tool which is not affected by the type of region. Though we see this approach as suitable, its weakness lies in disregarding subjective factors.

Perlín *et al.* (2010) considered endogenous factors as important for rural development. On the other hand, Bernard (2011, 2012) disagreed with this statement when statistically demonstrated their little impact on municipal development. He sees as the most important the area of economy, intensity of interactions, and public life (basic facilities in the village).

In connection with the development of rural areas, the importance of rural tourism has been mentioned frequently in recent times (e.g. Šimková, 2008), which should not be overlooked when assessing rural development.

On the basis of the analysis of Czech studies, we have identified a total of 84 indicators used for the description and evaluation of regions and rural areas in the Czech Republic (see Appendix A). Tab. II shows the most important of them. The majority of these indicators come from the economic sphere, which can be caused by their easier quantification and sufficient secondary data. Unequivocally the most commonly used indicator is the unemployment rate, which appears in the absolute majority of analysed studies. The second most frequent indicator is dwellings. It must be noted, however, that it is a more general indicator which includes completed dwellings, started dwellings, dwellings under construction, etc. The third most commonly used indicator is the average gross wage. We thus believe that these indicators should be taken into account in assessing rural development in the Czech Republic.

From the answers of local development partakers and experts operating in the area of rural development we approached, it follows that the assessment of rural development must be viewed comprehensively. It is insufficient to only focus on one area of development (such as economic or social development), since all factors mutually affect each other and act complementarily. Determining the importance of individual factors affecting rural development thus becomes highly problematic.

Another area fairly often mentioned is the issue of the connectedness between rural development and the specific area. This is in accordance with the results reached by the authors listed above.

Finally, the limiting factors of the analysis should be noted. Authors of the paper consider process of selecting articles as the most limiting factor. Firstly, only Scopus database was used. On the one hand, it guarantees the quality of the selected articles, but on the other hand the number of available articles was reduced. This limitation might be advisable to remove by analysing articles from various databases. Secondly, keywords used for searching could affect the results as well. Using different keywords could lead to the selection of different articles.

On the other hand, what can be viewed positively is the age of analysed articles. For analysis we have not used articles older than 7 years. This is important especially because of the time-varying composition and importance of the factors affecting rural development.

II: *The most frequently used indicators in the Czech studies (Source: authors' results)*

Indicator	Factor[1]	Number of studies
Registered unemployment rate	Economic	8
Dwellings (completed, started, etc.)	Local	6
Birth rate	Demographic	4
Average gross wage	Economic	3
Number of businesses	Economic	3
Share of inhabitants commuting to work	Economic	3
Number of registered cars	Local	3
Share of households with internet access	Local	3
Number/share of university students	Demographic	3
Education index	Demographic	3
Average incapacity for work due to sickness	Economic	3
Age index – 60–65-year-old per 100 inhabitants	Demographic	3
Average voter turnover	Social	3
Migration balance per 100 inhabitants	Demographic	3

[1] Factors were named by authors of the article

CONCLUSION

The analysis shows that it is important to take into account local specifics of rural areas and focus on smaller territorial units (LAU 1 or LAU 2) in examining of rural development. It is also necessary to use objective and subjective data to gain more comprehensive view on researched rural areas. However, due to the lack of subjective data from rural regions, it is not possible to follow this approach currently. Based on this finding, subjective data should be collected systematically among local actors in order to obtain information about potentials, problems and in general about changes in rural development of the region as well as in order to create database with this kind of information which enables the long term view on this research topic as well as the assessment of the direction of development in particular area. This bottom-up approach, e.g. important information goes from local actors (mayors of municipalities, representatives of Local Action Groups etc.) who are generally considered as the key players in rural development process. They know very well the rural area and have a clear vision of the possibilities of its development. With this in mind, it is appropriate to involve these actors to the process of creating tailored rural development policy.

When comparing studies focused on the Czech Republic with those focused on other European countries, no significant differences in approach to the development of rural areas were identified. Generally, the frequently observed development factors include the economic, social, demographic and environmental factors. On the other hand, it is not clear which indicators should be included in these factors. The analysis shows that authors do not use identical indicators in describing development of rural areas. So it often happens that one indicator can be assigned to multiple factors depending on the subjective point of view of the author or the methodology used.

We have identified 14 most commonly used indicators which should be taken into account when examining rural development in the Czech Republic. These are: registered unemployment rate, dwellings (completed, started, etc.), birth rate, average gross wage, number of businesses, share of inhabitants commuting to work, number of registered cars, share of households with internet access, number/share of university students, education index, average incapacity for work due to sickness,

age index (60-65-year-old per 100 inhabitants), average voter turnover, and migration balance per 100 inhabitants.

The supplementary survey made among local actors and experts on rural development implies that examination of rural development should be addressed comprehensively. Process of rural development is a coherent system, in which one factor affects the other. It was also found that it is not appropriate to use weights to distinguish importance of factors affecting rural development.

However, rural development policy should take into account indicators mentioned in this paper. Nevertheless, it is important to take into consideration that different indicators are more appropriate for particular area and therefore they should be compiled for each region in order to reflect its unique conditions. It is relevant to create a composite indicator measuring level of regional development for each region and measure this indicator in long-term view in order to draw conclusions and effective regional development policy planning. Consequently, this study can be a guide for similar studies focused on this theme. Moreover, future research could be focused on deeper analysis of indicators in smaller areas (e.g. LAU 2) and their comparison among each other. This approach will ensure that one-size-fits-all policy to regional development will not be followed but it will reflect the specifics of each area.

Acknowledgement

This article is the result of the project titled "Factors determining the decision of SMEs operate in the rural areas of the Czech Republic" funded from the resources of IGA PEF MENDELU in Brno.

REFERENCES

ANRÍQUEZ, G., and STAMOULIS, K. 2007. Rural Development and Poverty Reduction: Is Agriculture Still the Key? *Agricultural Development Economics Dvision (ESA)*, 7: 1–39.

BERNARD, J. 2011. Endogenní rozvojové potenciály malých venkovských obcí – obtížné hledání a měření jejich vlivu. *Czech Sociological Review*, 47(4): 745–775.

BERNARD, J. 2012. Prostorové vzorce rozvinutosti venkovských obcí česka. *Geografie*, 117(1): 72–94.

BIBBY, P. 2013. *Urban and Rural Area Definitions for Policy Purposes in England and Wales: Methodology (v1.0)*. Government Statistical Service – GSS. 36.

BINEK, J., et al. 2007. *Venkovský prostor a jeho oživení.* Brno: Georgetown. 137.

BLAŽEK, J. 1999. Regional Patterns of Adaptability to Global and Transformation Process in the Czech Republic. *AUComeniana-Geographicala*, 37: 61–70.

BLAŽEK, B. 2004. *Venkovy: anamnéza, diagnóza, terapie*. Brno: ERA. 184.

BONCINELLI, F., et al. 2015. The determinants of quality of life in rural areas from a geographic perspective: The case of Tuscany. *Review of Urban & Regional Development Studies*, 27(2): 104–117.

BULDERBERGA, Z. 2015. Rural and urban municipalities in the regions of Latvia – development tendencies and challenges. *Economic Science for Rural Development*, 154.

CASCHILI, S., De MONTIS, A., and TROGU, D. 2015. Accessibility and rurality indicators for regional development. *Computers, Environment and Urban Systems,* 49: 98–114.

CHAMBERS, R. 2013. Rural Development: Putting the Last First. New York: Routledge.

CHROMÝ, P., JANČÁK, V., MARADA, M., and HAVLÍČEK, T. 2011. Rural Areas – Living Space: Regional Differences in the Perceptions of Representatives of Rural Municipalities in Czechia Regarding Rural Areas. *Geografie*, 116: 23–45.

CLARK, J. R. A., et al. 1997. Conceptualising the evolution of the European Union's agri environment policy: a discourse approach. *Environment and Planning*, 29: 1968–1885.

DOSTÁL, P., and HAMPL, M. 2002. Regional Development in the Czech Republic: Specific and General Tendencies, In Domański, R. (ed.), *Cities and Regions in an Enlarging European Union, Committee for Space Economy and Regional Planning*. 129–149.

EUROSTAT. 2015. *Urban-rural typology.* [Online]. Available at: http://goo.gl/nJY2Zv. [Accessed: 2015, February 19].

GRGIĆ, I., et al. 2010. Quality of life in rural areas of Croatia: To stay or to leave? *African Journal of Agricultural Research*, 5(8): 653–660.

HAMPL, M. 2005. *Geografická organizace společnosti v* České *republice: transformační procesy a jejich obecný kontext.* Praha: Přírodovědecká fakulta Univerzity Karlovy. 147.

HLAVSA, T. 2010. The possibilities of complex assessment of the development and categorization of rural areas. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 58(6): 151–160.

HRABÁNKOVÁ, M., and TRNKOVÁ, V. 1996. *Hodnocení území z pozice agrární regionální politiky a rozvoje venkova*. Praha: Výzkumný ústav zemědělské ekonomiky.

JANČÁK, V. 2003. Geografie zemědělství a rurální geografie: základní pojmy a metodické přístupy jejich výzkumu v období transformace. In: JANČÁK, V., CHROMÝ, P., and MARADA, M. (eds.): *Geografie na cestách poznání*. Praha: Univerzita Karlova v Praze. 166–176.

KOVÁRNÍK, J. 2010. Regional Development in Hradec Králové Region. *Communication and Management in Technological Innovation and Academic Globalization*, 52–56.

MADU, I. A. 2007. The Underlying Factors of Rural Development Patterns in the Nsukka Region of Southeastern Nigeria. *Journal of Rural and Community Development*, 2: 110–122.

MANKIW, N. G. 2000. *Principles of economics*. Prague: Grada Publishing.

MARTINČÍK, D. 2008. Ekonomicko-sociální úroveň krajů – komplexní srovnávací analýza. *Ekonomie,* 11(1): 14–25.

MARTINČÍK, D., and ŠLEHOFEROVÁ, M. 2014. Competitiveness and convergence of Czech regions: Persistence of discrepancies. *Ekonomie*, 17(2): 14–33.

MASCARENHAS, A., et al. 2010. The role of common local indicators in regional sustainability assessment. *Ecological indicators*, 10: 646–656.

MATOUŠKOVÁ, K. 2011. *Nová typologie městských a venkovských regionů NUTS 3 podle Evropské komise*. [Online]. Available at: http://www.dvs.cz/clanek.asp?id=6485296. [Acessed: 2015, December 19].

MICHALEK, J., and ZARNEKOW, N. 2012. Application of the rural development index to analysis of rural regions in Poland and Slovakia. *Social indicators research*, 105(1): 1–37.

MOSELEY, M. 2003. Rural Development: Principles and Practice. London: SAGE.

PERLÍN, R., KUČEROVÁ, S., and KUČERA, Z. 2010. A Typology of Rural Space in Czechia according to its Potential for Development. *Geografie*, 115(2): 161–187.

POSPĚCH, P., DELÍN, M., and SPĚŠNÁ, D. 2009. Quality of life in Czech rural areas. *Agricultural Economics,* 55(6): 284–295.

RAMOS, T. B. 2009. Development of regional sustainability indicators and the role of academia in this process: the Portuguese practice. *Journal of Cleaner Production*, 17(12): 1101–1115.

SÁNCHEZ-ZAMORA, P., GALLARDO-COBOS, R., and CENA-DELGADO, F. 2014. Rural areas face the economic crisis: Analyzing the determinants of successful territorial dynamics. *Journal of Rural Studies*, 35: 11–25.

SPELLERBERG, A., HUSCHKA, D., and HABICH, R. 2007. Quality of life in rural areas: processes of divergence and convergence. *Social indicators research*, 83(2): 283–307.

SIMKOVÁ, E. 2008. The sustainable development of rural areas and the role of rural tourism. *Ekonomie*, 11(1): 26–32.

United States Department of Agriculture – USDA. 2006. *Rural development.* [Online]. Available at http://goo.gl/iwFBDw. [Accessed: 2015, December 10].

VAISHAR, A., and ZAPLETALOVÁ, J. 2009. Sustainable development of rural microregions in the Czech borderland. *Moravian Geographical Reports*, 17(4): 34–43.

VAN ZEIJL-ROZEMA, A., and MARTENS, P. 2010. An adaptive indicator framework for monitoring regional sustainable development: a case study of the INSURE project in Limburg, The Netherlands. *Sustainability: Science, Practice, & Policy*, 6(1): 6–17.

YILMAZ, B., et al. 2010. Factors affecting rural development in turkey: Bartın case study. *Forest Policy and Economics*, 12(4): 239–249.

Zákon o obcích č. 128/2000 Sb.

ŽIVĚLOVÁ, I., and JÁNSKÝ, J. 2008. Analysis of life quality development in the administrative districts of South Moravia. *Agricultural Economics*, 54(9): 431–439.

Contact information

Jakub Straka: jakub.straka@mendelu.cz
Marcela Tuzová: marcela.tuzova@mendelu.cz

1: *Appendix*
Appendix A. Indicators used in Czech studies (Source: authors' results)