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Characteristics of innovation in regions with small- and medium-sized towns

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Characteristics of Innovation in Regions with Small- and Medium-Sized Towns

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Abstract

Globalisation “takes” its victims, which the authors believe means that the future of small- and medium-sized towns has become uncertain in Europe. The role of centres is continuously increasing, and most researchers prefer to analyse the competitiveness and innovativeness of metropolitan areas. In this study, we characterise the small- and medium-sized towns in the central–eastern European region as well as explore their possible development path. The authors are convinced that one way for these towns to survive is through strengthening of innovation abilities, which means increasing the innovation performances of economic stakeholders and new forms of interaction among other institutions in order to handle social problems. The theoretical starting point is the interpretation and presentation of the micropolitan (without big towns) regions as well as understanding the concept of technological and social innovation. As the result of the research, the innovation measurements carried out in some of the settlements will be represented. These experiences can help the small- and medium-sized towns keep up with global competition and cancel migration and erosion of intellectual potential.

Keywords: micropolitan region, innovation in regions, technological and social innovation, competition

Introduction

Do small- and medium-sized towns have a future in the central–eastern European region? Does it make sense to compile urban- and economy-development strategies and establish relations for the sake of accessing subsidies, or do we have to

accept the fact that, in the twenty-first century, only large centres have the chance of serious development? It would be an easy task to quickly answer these questions, as it is easy to reason in both directions. We believe that many processes influence the exodus of the youth into centres, and capitals and towns become the centres of economy, traffic and knowledge, but local players are more and more self-confident in the areas of innovation, which are answers to processes of centralization (Ernszt et al., 2017, pp. 39).

The present study wishes to present two surveys conducted in the micropolitan regions in central–eastern Europe (according to EUROSTAT, micropolitan regions are considered areas where small- and medium-sized towns are dominate, and the population of towns is typically between 10,000 and 50,000), which have the measurement of innovation abilities of enterprises in their focus. Why are these surveys important? The authors believe that only those regions prevail in the competition where there are interesting and novel workplaces offering high salaries and which are about the future and innovativeness, and the ability to renew is inevitable for all this. Our research question is: What is the role of small- and medium-sized enterprises in creating the innovation environment? During our investigations, we analysed the fields of innovation in a given area; thus, connection systems, the role of local higher education institutions, and the appearance of technological and social innovation at municipalities and enterprises were researched. Our hypothesis is that the studied enterprises (in small- and medium-sized towns in West Hungary) have an average renewal ability, and their environments are not remarkable from the perspective of innovation, i.e., there are no large universities in these towns; therefore, the future of this region is uncertain, and it will lag behind in the competition. We carried out quantitative and qualitative research where the enterprises were in the focus, as they can play a prominent role in innovation. The first survey was about general innovative abilities, but the attention shifted more and more to the renewal abilities of the environment and relation systems. The authors do not wish to present all details of the conducted survey but to highlight those ones that can justify or disprove the hypothesis.

Literature Review

ESPON (2013) surveyed 32 countries in Europe and defined small- and medium-sized towns as entities with a population density between 300 and 1500 inhabitants/km² and a number of inhabitants between 5000 and 50,000. A part of the researchers defines small- and medium-sized towns on the number of inhabitants (Balchin–Bull, 1987; Clark, 2000; Korcelli, 2000; Benedek, 2006). Of course, the definition can be based on the functionality, the regional role, economic

activity, and development, but the present researches consider the number of inhabitants as the foundation, and the researched settlements belong to the category of small- and medium-sized towns in the West Hungarian region, and their population characteristically ranges between 10,000–50,000 people; in addition, vocational literature calls it a micropolitan region (OMB, 2000; Eurostat, 2005; Lukovics, 2008).

Urban development in central–eastern Europe shows a unique path (Enyedi, 1998). From the point of view of the settlement network, a dominance of towns (especially of capitals) is a major feature, and there are no real counter-poles. (Michalko, 2001) *The Green Book of the European Union* on territorial cohesion calls small- (and medium-sized) towns as “links,” which have all the features that can be expected from basic functions of a town: they provide the basic criteria of living, but at the same time they are also a link between towns and surrounding villages (Horeczki, 2016, pp. 255–256).

The need to improve the competitiveness of rural micropolitan regions is rising more and more in central–eastern European countries ruled by their capitals, as the majority of the population (often 50%) is living in this environment, and there is a large number of enterprises. Although some viable concepts had been worked out targeting sustainable rural lifestyle (which is the most significant pillar of tourism, too), a general, country-wide model of “rural welfare” still remains to be developed (Zsarnoczky, 2016). The focus of innovation research is shifting toward local players, and the unsuccessful Lisbon Strategy (innovation development of large companies, national programs) showed the necessity of a new, bottom-up innovation model (interpretable in a local space—on the level of municipalities and aimed at developing SMEs). The role of SMEs in the case of foreign and domestic companies can be traced in several case studies (Malota, 2015; Malota & Kelemen, 2011); thus, the framework of global innovation is elaborated on in Rekettye et al. (2015).

Innovation is, according to the literature, the ability of doing things in another way (Schumpeter, 1939), i.e., a change that unveils a new dimension of performance (Drucker, 2003) or an implemented creative idea (Karlsson-Johansson, 2004). Vecsenyi (2003) believes that innovation is nothing else but a recognized and exploited business possibility. Drucker (1985) draws attention to the fact that innovation is a knowledge-based activity; therefore, the experience-based and codified knowledge are necessary for its existence, application, and spread. Knowledge can better be perceived on local and regional levels, as the knowledge potential of a region is made up of the knowledge-wealth of enterprises and other institutions in a region as well as the human and social capital of the population in the region. One of the key

factors of success is education: It has strategic importance to keep the youth in the town, thereby ensuring a qualified labour force and grounding the basis of the creative development of the town (Ernszt et al., 2017, p. 146.).

The OECD and EUROSTAT developed a community innovation survey (CIS) for the sake of the measurability of innovation. The terms used in the survey are based on descriptions in the *Oslo Manual* (third edition); thus, their interpretation is unified: “Innovation is the introduction of a new, or greatly improved product (service or good), or process, new marketing method, or new organisational method into the business practice, the work-place organisation, or the external relations” (*Oslo Manual*, 2005, p. 30). The CIS is the only harmonised data source of measuring innovation (Szunyogh, 2010), which is used by many authors (Leeuwen et al., 2009; Markov–Dobrinsky, 2009; Birkner–Mahr, 2016). This questionnaire was used as the basis during the quantitative research.

Regionalism is an integral part of innovation processes (Gál, 2013), as there are major differences because of the regional disparity of the access to knowledge (Vas–Bajmócy, 2012). According to the concept of innovation systems, all regional stakeholders and factors can be considered parts of the innovation potential that define, support, or even hinder the existence and spreading of innovation. Thus, the innovation system does not only include universities, research institutions, and innovative enterprises, which are considered the elements of the technology supply, their activities, and the relation among them (Dóry–Rechnitzer, 2000; Németh–Pintér, 2014). Various “bridge-building” and transfer organisations and innovation services apart from vocational workshops creating knowledge and technological skills can also be listed here. These active bridge-building institutions are innovation agencies (the so-called “passive bridge-builders”), technology (scientific) parks, technopolises, incubation institutions (business incubators), enterprise development institutions (Chambers, industrial parks). Enterprises can have access to innovation services via them; thus, the aim was to become familiarised with these institutions and measure them.

The environment (culture, education, self-government, non-governmental sphere, media) is another important element framing the existence of innovation, and their unit can be called social innovation, i.e., the cooperation of university, business, and environment, which has the primary aim of social well-being (Mulgan et al., 2007; Németh, 2017).

Since its foundation, the European Union devotes considerable attention to the cooperation between regions. These initiations support the innovation, integration, and competitiveness, especially by financing the cross-border projects

(Kaszás et al., 2016). The EU places special emphasis on research, development, and innovation and the bolstering of the socio-economic utilisation of the relevant results in its planning period 2014–2020. It is therefore important that all regional units elaborate their own research and innovation strategies in close cooperation with each other (specification – S3). S3 and regional development can strengthen the processes tied and not tied to a place for the sake of economic development and a higher life-quality (Mark Tissen et al., 2013). Smart specialisation is actually finding a way to be special in a highly competitive, global world. In order to guarantee this specialisation, Foray (2015) suggests regional economies to consider this specialisation as an evolution that builds on the strengths of the given region or traditional economy while complementing it with new, knowledge-based processes. McCann and Ortega–Argilés (2016) observe that SMEs are major stakeholders of the smart specialisation policy. In certain regions of Europe, the focus is on the start of new enterprises, while other European regions favour the growth of existing enterprises, and others prefer the development of the supply chain. Wherever the priorities may be, it must be clear that the degree of the participation, mobility, and dynamism of enterprises occupies a special role among the indices of these new policies.

During the second qualitative research (Research 2), we conducted interviews with the institutions involved in the new innovation strategy, i.e., S3, in the aforementioned micropolitan regions.

Research Framework and Method 1

We conducted the first major entrepreneurial innovation research in the east–central European region in 2009. In the frame of that research, a county, Zala (NUTS 3), was studied (Birkner, 2010, pp 111–114). We chose this region because there are only small- and medium-sized towns in this county. It is a classic micropolitan region with seven towns all together; there are no major universities in the settlements; there are just a few faculties or campuses; and there is not even a centre of a multinational corporation. Overall, it can be stated that it is an average area where there are no conditions to support innovation. The significance of the research is emphasized because, in this micropolitan region, there has been no previous research in the subject of innovation of this magnitude involving so many stakeholders in such a wide area. Our objective was to learn about the factors (the demands) affecting entrepreneurial innovation. The present services and future plans, as well as the existing relations to enterprises of innovation providers, were surveyed. In the quantitative research, the questionnaire was sent to the small- and medium-sized enterprises operating in the

county. The questionnaire assistants helped us to receive answers from 9% of all the involved companies, collecting 213 completed questionnaires as a result of the survey. In the qualitative research, we addressed all the knowledge centres, innovation agencies, and chambers of support in the region. We finally made 14 interviews. The research is considered representative.

Results and Discussion 1

Any occurrence of the process, product, and organisational and marketing innovation was considered as a result of entrepreneurial innovation. The cluster analysis was conducted in more steps along the parameters and resulted in three groups significantly different in size (Table 1).

Finally, the third column (Analysis Conducted with Three Clusters) was considered to be investigated. We named the first cluster “Followers,” the second one “Innovators,” and the third group “Laggers.” The third group consists of the Laggers (158 companies) who had hardly any R+D activities and even less willingness to innovate. There was a small entrepreneurial layer (45 companies), mostly among the domestically owned small entrepreneurs who had a long-standing presence in the market, and they were open to innovation because of their own strength to improve their competitiveness. There was also a group of major capitalized companies interested in R+D but who were rather followers when it came to innovation (10 companies). The results were adequate to the Hungarian average at that time, so 26% of the enterprises participating in the representative survey conducted some innovation activity.

The cluster groups were compared in various areas. The R+D activities, the implemented innovations (based on the three cluster groups: 158 companies, laggers; 45 companies, followers; 10 companies, innovators [see Figure 1]); other innovation areas and future activities show a clear difference

among the enterprise groups; however, the hindering factors and regional traits were evaluated in a similar way.

In the case of innovation services, there are striking differences among the three company groups from the quantitative perspective: The followers and innovators used these services twice as often. In the case of planned services, the demands greatly vary from the previous ones, a growth from the quantitative perspective in the case of enterprises Laggers could be perceived. The ranking of importance changed as well, and the special demands “faded away.”

There was no close tie between the regional arrangement of R+D innovative providers and the enterprises of the given small- and medium-sized towns. This could be explained with the lack of a major innovation institution (university, research center, technopolis, scientific and technology park) and improper cooperation.

The qualitative research (14 interviews were conducted with leaders of institutions and organisations offering services for enterprises, e.g., chambers, venture capital investors, innovation agencies, research laboratories) showed that R&D and innovation service providers are diverse organizations that, alongside the services that support general business operations, are also active in the fields of innovation. They did not properly indulge in the possibilities of innovation services, and they were not exactly familiar with the needs; therefore, the harmony between the needs and demands could not be shown, meaning that service providers offered something else than what companies were looking for.

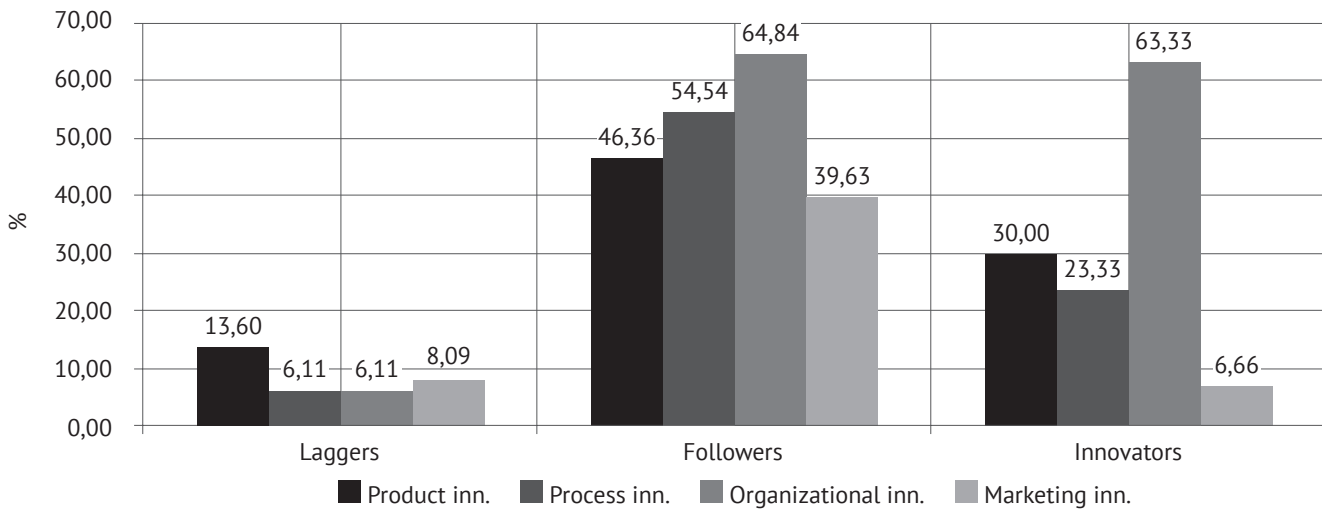
The analyses proved that the innovation potential of enterprises is affected by the external environment and internal innovation features. The companies found the higher education and research capacity of the investigated region weak; it was proved by statistical data as well, and the innovation needs of the companies have not inspired the development of major R+D and innovation, either. A review of factors hindering innovation showed that enterprises did not consider

Table 1. Analysis Conducted with Five, Four and Three Clusters

Analysis Conducted with Five Clusters		Analysis Conducted with Four Clusters		Analysis Conducted with Three Clusters		
Cluster	1	14,000	1	2,000	1	45,000
	2	161,000	2	9,000	2	10,000
	3	2,000	3	161,000	3	158,000
	4	7,000	4	41,000	Valid	213,000
	5	29,000	Valid	213,000	Missing	0,000
Valid	213,000		Missing	0,000		
Missing	0,000					

Source: Authors

Figure 1. Implemented Innovations on the Basis of the Cluster Groups



Source: Authors

the existence of such capacities to be important; according to their opinion, the link between these two groups is so weak that companies did not even come as far as realising the underlying potentials.

The results helped to improve the innovation performance of companies in the county. Informing the service providers was considered to be the most urgent among the practical steps. We addressed the service providers who have supported the operation of the companies so far (such as chambers) and have tried to take practical steps in order to strengthen innovation processes (e.g., consulting, handling patents), but these earlier steps were not in line with the real needs of the companies. Another important step was the support of the cooperation between higher education institutions and enterprises, and the attention of intermediary organizations had to be drawn to the fact that the companies involved are not familiar with the existing research capacity in the higher educational sector. The grouping of enterprises bears the chance of targeted developments; the satisfaction of the needs of “innovators” and “followers” helped the case of innovation also in this county (Birkner, 2010, pp. 111-114).

Research Framework and Method 2

In the summer of 2015, we carried out a new innovation survey in almost the same micropolitan region, and, similar to the previous research, we selected two small towns and a middle-sized one (Birkner-Mahr, 2016). Compared with the previous research, this time no entire counties were researched, and more target-oriented questions were asked, as the research was aimed at questioning the individuals involved in the S3 areas (automotive industry, touristic

enterprises). The question was asked whether the innovation charisma of a major university (the Pannonian University) can be seen in the above-mentioned three towns, irrespective of the fact that a major development centre of the university is not located in the towns (but there are campuses and departments here). In the course of the research, the social and economic systems supporting the innovation chances of companies; thus, the criteria of social innovation was also dealt with indirectly.

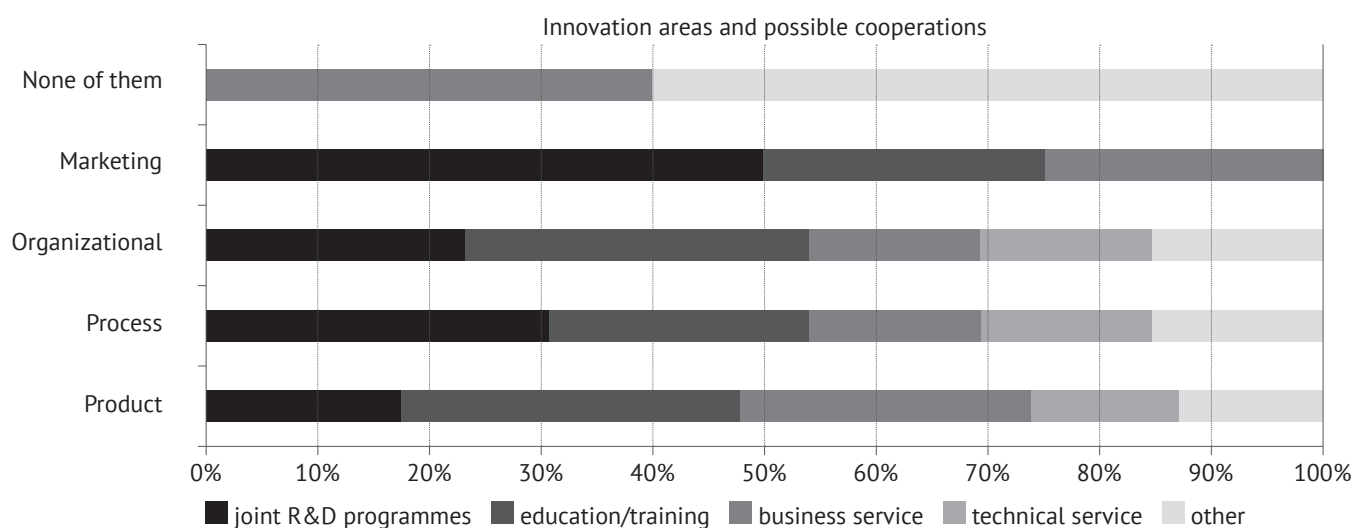
A total of 51 organisations were addressed, i.e., 31 were operating in medium-sized towns and 10-10 in small towns, respectively. The companies were randomly selected and sampled (from the mentioned branches), and the measuring was mainly done by structured interviews. The data were collected during the summer and early spring of 2015.¹

Results and Discussion 2

The innovation performance of entrepreneurs in all three towns was, despite minor differences, around the Hungarian average (30%); thus, the size of the town did not influence the renewal ability of enterprises. The Hungarian average is a drawback compared with developed West European regions; thus, it is worthy to continue the search and identification of enterprises willing to think in another ways in all three regions. How can the spreading of innovation be accelerated in the companies? The authors believe there are two ways: one is the finding of strong,

¹ The research, founded in Péter Erzsébet’s publication, was supported by the ÚNKP-17-4 New National Excellence Program of the Ministry of Human Capacities.

Figure 2. Innovation Areas and the Possible Cooperations



Source: Authors

innovative enterprises within the branches/service sectors who are trying to reach global levels or who can be made suitable for supplier levels. Companies who successfully renew become examples for others. On the other hand, it is necessary to develop higher education and research portfolios as the existing university capacities did not have a major impact on the innovation performance of companies (Birkner–Mahr, 2016, pp. 47-49).

The focus during analysis of the cross-table related to the links was put on the correlation between innovation areas and the cooperation. There was cooperation in 58 cases for the sake of a certain aim. There were links where innovation was not implemented. It can be said that there is no major correlation between innovation areas and the cooperation aims (Figure 2). It was a bit surprising that the most striking joint R+D demand arose in case of the marketing innovation, which is much more typical for product innovation. There should be more cooperation with universities; the chambers are not able to provide serious assistance in this field.

Towns must strive to establish a much more complex cooperation system than the present one, as civic organisations, the bureaucracy, and the educational and cultural systems can greatly support the innovative possibilities of enterprises. If only the attractiveness of a municipality for a young person/group is regarded, then it is easy to realise that an impulsive, free, and creative community is important, and its creation is a common task. Therefore, it was suggested that the self-government of the given towns create regular meetings between employers and educational and cultural institutions, where participants receive the chance to formulate the social aspects of creativity and liveability together with self-government.

The question of the lack of various experts (ranging from craftsmen to those with higher education) was one of the first to be raised. One of the possible regional solutions to this problem can be the launching of dual education programs on secondary and tertiary levels (long practical periods, even up to 50%, during the trainings). The obvious use of dual programs apart from practical information is the established relation between youth and the enterprises, which supports the remaining *in situ*. The other chance is the striking raise of loans, which is a Hungarian (even central–eastern European) affair, and creating the necessary resources is one of the major political and economic tasks; without this, it is impossible that a part of young employees seek their well-being in Hungary. An innovation bolstering without young people open to new technologies is difficult.

There are many tasks for university organisations (campuses, faculties), e.g., sharing knowledge, building paths of trust, organising vocational meetings and launching dual trainings, and providing spaces of innovation. The municipalities are in a fortunate position in that all three campuses/faculties are working within the framework of the same university; therefore, it is easier to harmonise arising development needs and to find common methods that can be applied anywhere (Birkner–Mahr, 2016, pp. 47-49).

Conclusions

The most important conclusion of the two researches was that, although small- and medium-sized enterprises can play a role in creating the innovation environment, the innovation performance of the enterprises in the region where we carried out the research could not be raised significantly,

as the companies demonstrated results around the national average. Practical suggestions were formulated after the measurements conducted in 2009, which were not accepted by regional actors. If this case remains, this area will become part of the losers in the longer term, and, probably due to this, young people will leave these municipalities. It can generally be said that, although higher educational capacities developed to a certain extent, it did not have a positive impact from the point of view of enterprises; however, this has to be dealt with in the future as one of the most important bases of innovation is knowledge and knowledge sharing.

The researches were new, as the features of local SMEs were investigated in 2009 at a time when this was scientifically not typical. The time between the two measurements did not result in changes in the scientific practice of innovation (this was observed in the approach of the two researches), the diffuse organisations considered to be important disappeared from the research focus, and it became evident that institutions supporting enterprises, e.g., the chambers, are not able

to generate serious innovations by themselves. It is evident that the environment, i.e., the educational, leisure-time, and public administration institutions (and also the chambers) have a major impact on establishing a creative atmosphere. This means that local politics must place a lot of energy into establishing cooperation among the above-mentioned protagonists. The aim is liveability and restoration and the creation of a young atmosphere; if this does not happen, then modern enterprises do not appear in the given region, and the mental potential will deteriorate.

It can be confirmed that the hypothesis is correct, i.e., the enterprises in the investigated area (small- and medium-sized towns in West Hungary) have an average renewal ability; their environment is not striking from the point of view of innovation. Thus, the future of this region is uncertain, and it will most probably fall behind in the competition. Based on the results, the processes helping the spreading of innovation must be assisted, and further individual ideas are necessary, which can be interpreted in this region.

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Značilnosti inovacij v regijah z majhnimi in srednje velikimi mesti

Izvleček

Globalizacija zahteva svoje žrtve, kar po mnenju avtorjev pomeni negotovo prihodnost majhnih in srednje velikih mest v Evropi. Vloga centrov se nenehno povečuje, večina raziskovalcev raje analizira konkurenčnost in inovativnost metropolitanskih območij. V tej študiji nameravamo opredeliti majhna in srednje velika mesta v regiji Srednje in Vzhodne Evrope ter raziskati njihovo možno pot razvoja. Avtorji so prepričani, da je eden od načinov preživetja teh mest krepitev inovacijskih sposobnosti, kar pomeni povečanje inovacijske uspešnosti gospodarskih subjektov in nove oblike interakcij med drugimi institucijami za reševanje družbenih problemov. Teoretično izhodišče sta interpretacija in predstavitev mikropolitanskih regij (brez velikih mest), pa tudi razumevanje koncepta tehnoloških in družbenih inovacij. Kot rezultat raziskave bo predstavljeno merjenje, povezano z inovacijami, v nekaterih naseljih. Te izkušnje lahko pomagajo majhnim in srednje velikim mestom, da lahko sledijo globalni konkurenci in prekinejo migracije ter erozijo intelektualnega potenciala.

Ključne besede: mikropolitanska regija, inovacije v regijah, tehnološke in družbene inovacije, konkurenca