

## Regional innovation strategies in V4 countries

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### Abstract

The article evaluates support of innovation in four countries - Slovakia, Czech Republic, Poland and Hungary. It concentrates on creation of regional innovation strategies in these countries and compares the proposed measures to the theoretical background. The paper has two main parts - theoretical background contains examples and reasons for innovation support as well as key problems for governance of innovation support. The second part compares activities and measures of 29 regional innovation strategies in these regions and identifies some key differences among them.

**Key words:** support of innovation, regional innovation strategies,

**JEL Classification:** R58

### 1 Introduction

Innovation has been broadly recognized as an important factor of economic growth. Lots of theories and approaches have been developed in order to explain the way how regions and states could profit from innovations.

The goal of the paper is to evaluate support of innovation on the regional level. We will concentrate on regional innovation strategies. Regional innovation strategies are prepared by regional government in order to achieve some coordination on innovation support. However, these strategies are a relatively young phenomenon in V4 countries, so it's too early to evaluate their realization. We concentrate on suggested measures, which allow us to identify key direction and main philosophy behind the strategies.

### 2 Body of Paper

Several studies dealing with innovation and innovation system were done on national level [1]. Now, there is a paradoxical consequence of globalization in which the ever greater integration of national and regional economies into the global one accentuates, rather than minimizes, the significance of the local context for innovative regions and localities [2]. Compare to national level, Regions are important for the proximity of all actors and possibility to create social capital [3]. Geographic proximity has the potential to create competitive advantages in terms of interaction, learning, access to skills and cooperation in development and business [4]. Regional economies can be understood as places of collective technological learning [5]. This leads experts to pay more attention on regional level of innovation, resulting in concepts such as industrial districts, innovative milieu, regional

innovation systems or learning regions [5], [6], [7], [8], [9], [10], [11], [12]. These concepts try to identify the precondition for economic growth of regions, basically based on innovation and learning. These concepts are not developed to complex theories, but identify some key issues related to innovation activities in the region. Despite of some ambiguity in the theories [10], all concepts have been shown increasing importance of innovation governance on regional level.

Regional governments are not in easy situation. The regional economies and its interaction with innovation processes are very complex and not border with administrative power of the government, so it's very difficult to govern innovation process. Effectiveness of public policies on innovation than depends on the capacity of policy makers of a comprehension of innovation as system [13]. Innovation requires clusters and networks. Networking could be considered the most challenging concept for administration and the key notion in theories of government public governance [10].

Basically, there are four main functions of regional self-government [14]:

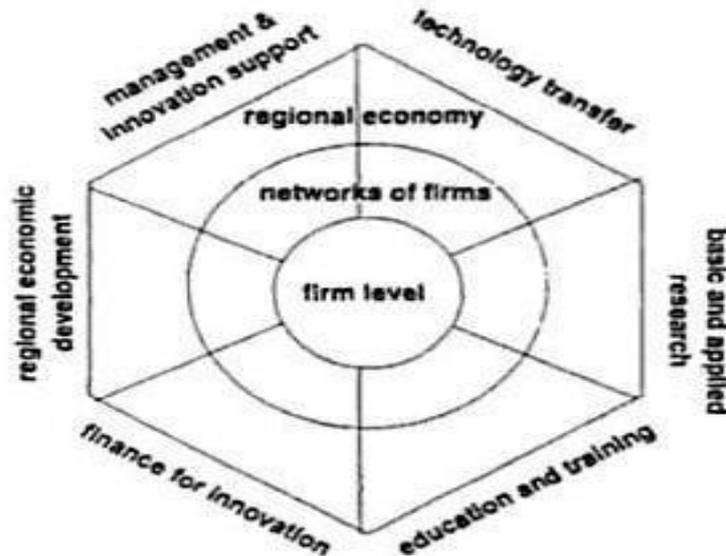
- Operational function refers to the level of development projects. Here we are at the level of the daily implementation of abstract concepts into concrete actions and tangible benefits. It is this operational level where the real effects of the governance system can be most effectively measured.
- Strategic function refers to regional development programs. They include a detailed analysis of strengths, weaknesses, options and threats of the region concerned, some strategic options and the setting of priorities, These includes preparation of regional innovation strategies, which are discussed later.
- Organizational function refers to the required organizational and management structures to be able to implement either operational or strategic tasks
- symbolic function feeds the first three realms back to the region as an integral space of action and identification. The point is to embed the strategies, the programs and the projects in a flow of symbolic communication, which easily hooks into regional people's world views.

Within these functions, regional self governments try to support the innovation with different tools. According to Koschatzky and Gundrum [15], public (regional) technology and innovation promotion can have three major tasks:

- activation of potential regional resources for development and application of new technology,
- inter-linkage of region-specific resources in regional innovation networks that comprise all the relevant actors in industry, science and policy, and
- integration of regional networks into supra-regional technology co-operation systems.

These tasks could be performed on three levels – firm, networks of firm and regional economy (see Scheme 1). Problems remain, however, in relation to the co-ordination of regional activities at the national level and between regions. There are often a number of organizations involved in the implementation of initiatives and the distribution of duties is not always unambiguous or clear. Insufficient co-ordination of activities between administrative sectors at the national level has turned out as one of the weaknesses. Without co-ordination there is a danger of duplication of activities and inefficient use of scarce resources [4].

### Scheme 2.1 Main components of innovation support



Source: Braczyk H.J, Cooke P., Heidenreich M: Regional Innovation Systems, Routledge, 1998

We also could see 6 different fields of support. Each region is unique, so it's very difficult to set up appropriate mix of these policies. There are different levels of social capital or problems of path dependency [9]. However, there were several studies trying identifying key support activities or areas. Atkinson [16] identified seven crucial areas to support innovation - Knowing your region's economic function in the global economy, Creating a skilled workforce, Investing in an infrastructure for innovation, Creating a great quality of life, Fostering an innovative business climate, Reinventing — and digitizing — government and Taking regional governance seriously. We could see shift from supply oriented policies centered on infrastructure buildings to policies supported "soft" factors such as human and social capital or cooperation between companies and universities.

Other types of studies try to identify the weakest points in present innovation strategies. Paxis Survey [17] identify several problematic areas viewed by respondents in selected regions to foster innovation - There is a lack of Private-Public Partnership funding, There are no attractive taxation rules for risk capital and equity investment, New entrepreneurs have difficulties in establishing linkages to networks or consortia of like-minded businesses, finance is not available at all stages of the new enterprise's development and A clear process model does not exist or is not used. Nauewelares [18] identify decreasing attention of support on: finance and risk sharing, technology know-how, market Access and information and human resources. One of the main problems is systematic support of innovation. Policy Instruments many times do not form the system and are not user oriented. Strategies also sometimes lead to problem of path dependence of lock in. This usually means they are oriented on existing, not new.

Another open question lies in sector selection for innovation support. Regional economy is a complex system that goes beyond the development of sector policies delineated in isolation. It involves more than specific efforts to increase spending on R&D, support to SMEs, or support to high-tech activities. It focuses on developing integrated approaches based on the characteristics of the different territories. It establishes networks of institutions and stakeholders, creates space for them to develop constructive dialogue and uses their inputs in the decision-making process. This approach of this 'third generation', innovation is newly supported by the European Commission. It is not considered as a linear process that starts with research, eventually leading to development, translated later into growth in the territories that have more capabilities. Instead it is the product of a policy-mix, including several bodies and stakeholders in which the territories, their specificities and conditions are paramount [19]. On the other hand, specialization is very important to gain regional competitive advantage. Functioning innovation systems include strong input suppliers and demanding customers, firms which compete with each other for customer, but also co-operate [13]. Sometimes the concept of related variety is supported as a solution to specialization [12].

Special attention in innovation support goes to research activities. There is a tendency to promote research as the solution to all innovation problems, as if research can solve all the problems industry and society are facing. Moreover, there is also a tendency to use the words research and innovation interchangeably, as if these two concepts are synonymous. Many companies, especially in the so-called low-tech industries, do not innovate through investments in R&D. They focus on incremental improvements in products and production techniques [4]. Also it is not enough to perform research; that research needs to be commercialized to have the full economic effect. More important than research programs, technology parks and incubators efforts are the people-to-people commercialization programs. Building links between universities and local industry clusters, promoting externships for students and faculty, and creating other linkage programs are important policies [16].

Emphasis on innovation has some limitations. Regions need to have at least a moderate level of knowledge infrastructure. Innovation support is also better suited to advanced regions. Building technology parks in the less developed regions looks like building "cathedrals in the desert" [20]. This we could observe also in regional strategies in central European countries, as we will discuss it later.

### **Regional innovation strategies in V4 countries**

Regional innovation strategies (RIS) in V4 countries are a relatively new phenomenon. The oldest innovation strategies are less than 10 years old and only very few regions approved more than one innovation strategy. In this situation, it is very difficult to evaluate effectiveness and efficiency of implementation of RIS. We rather concentrate on creation of innovation strategies in V4 countries. We analyze measures for innovation support in 29 regional innovation strategies from V4 countries (8 Slovak, 9 Czech, 7 Polish and 5 Hungarian regions). We concentrate on identifying measures, which were considered as a priority in the strategies. In order to be a priority suggested measures must fulfill two conditions:

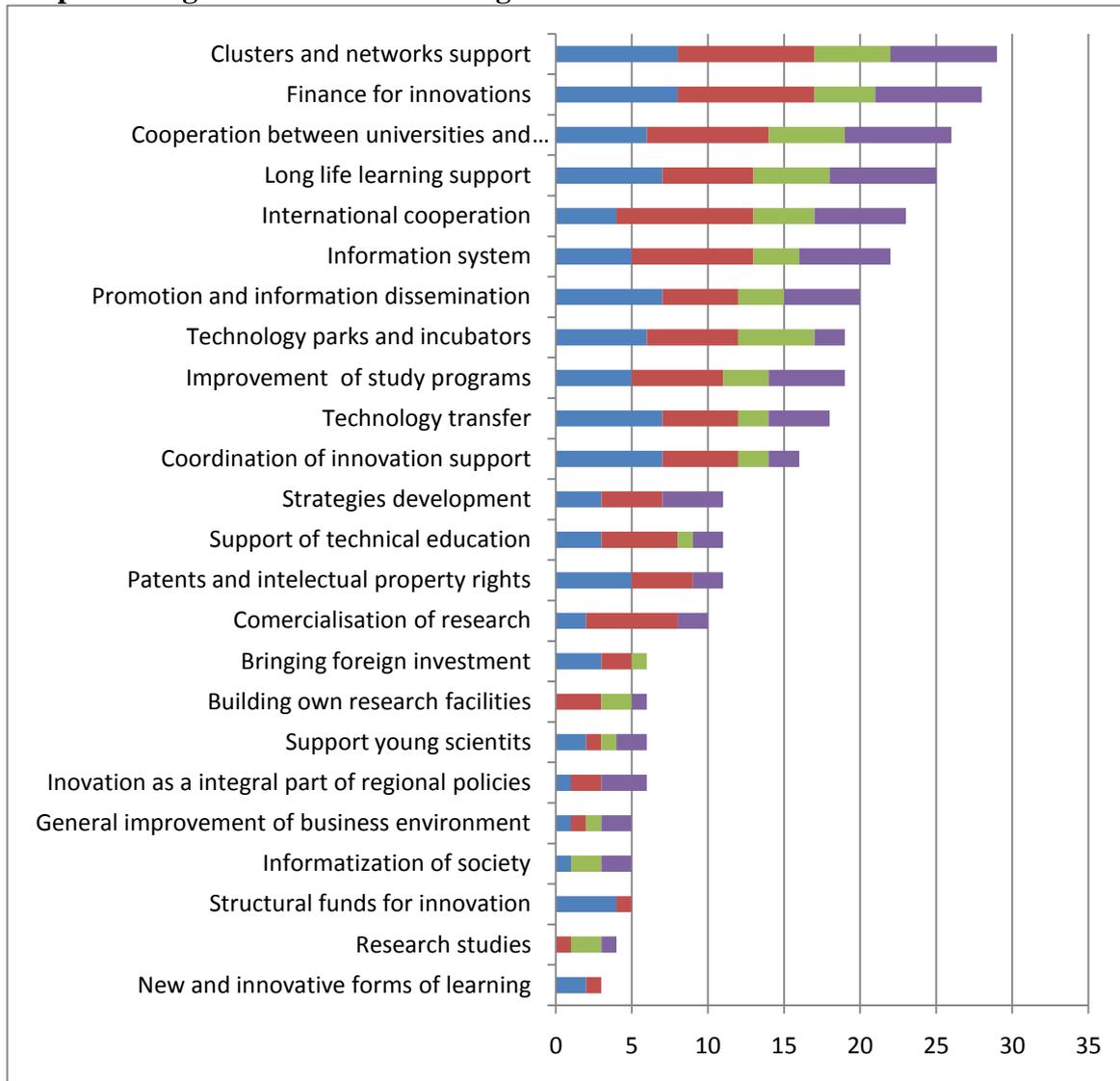
- must be mentioned as a separate point in the strategy,
- strategy must contain at least one measurable and concrete action/activity or indicator for such a measure.

For all that is very soon for evaluation effectiveness of implementation of these strategies. In this paper we therefore focused on analysis of creation regional strategies in V4 countries, we analyze measures for implementation within 29 regional innovation strategies from 4 countries (8 slovak , 9 czech , 7 polish and 5 hungarian). Measures had been analyzed base on the accent, which is put on them, we didn't considered facts, which hadn't been strictly tie to aims, priorities or indicators.

The total number of measures is shown in graph 2.1, where we can see, that the most often measure used in regional innovation strategies is the support of clusters and networks creation. In most cases there is the ambition of creating partly formalized groups on the sector principle, which will be able to develop needs of their members. In some cases there is the ambition of supporting common projects of companies within clusters. Other key measures are assuring finance for innovation, lifelong learning support and support of cooperation universities with companies. In lifelong learning support there is possible to observe different approach in strategies. Some strategies take in this support on universal level with measures focused on total continual increase of labour force qualification. Another big group of measures focused on creation and realization education programs tended to development of competencies for innovation (project management, quality control, methods and ways of innovation). In third group are measures tended to strengthen science and technical education, this measures are more often concentrate on secondary rather than tertiary education. Within the universities and companies cooperation were especially often used common research and development projects, closer cooperation in education programs creation or mobility and exchange between universities and companies programs. In Poland and Hungary is also often used spin off programs support.

Little less attention in RIS was paying to information activities and building institutions supporting innovation creation and transfer (especially technical science parks and technological incubators). That partly results from the fact, that some regions already have build at least some basic institutions supporting innovation development and also at least partial system of know-how dissemination. Within information activities there was the necessity of homogeneous information system building, which would connect all concerned institutions.

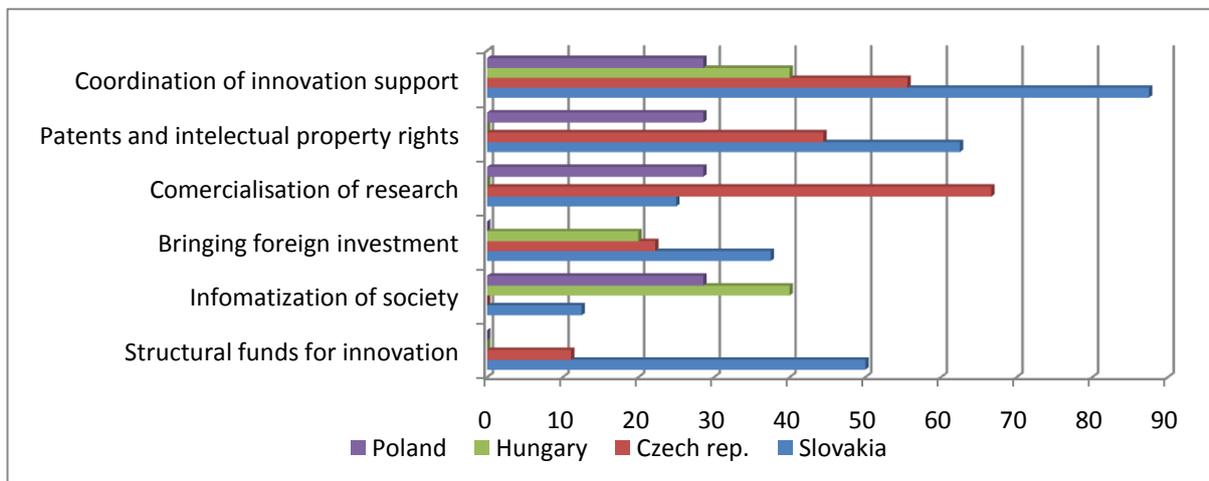
Between very surprising findings we can include small number of strategies, which would deal with research commercialization (besides Czech Republic), connection of innovation strategies with other political strategies in regions or connection of innovations with information society. Thanks to development most strategies from projects there is very positive fact of defining of measurable indicators, what often absents in others regional strategies.

**Graph 2.1 Regional innovation strategies activities**

Source: own elaboration based on innovation strategies in regions, total number of strategies containing mentioned measure (light blue – Slovakia, red – Czech republic, green – Hungary, lily – Poland)

Within the measures there didn't occur any differences between particular types of regions. If we consider 4 metropolitan regions of capital cities, measures would correspond with total result of all regions. More visible difference had been found only in higher support of building supporting institutions (especially technical science parks) and in support of transfer of technologies. By contrast there was total absence of technical education support or information society development. More visible differences as between particular types of regions occurred between particular countries, especially in some types of measures. The differences are shown in graph 2.2.

**Graph 2.2 Percent of strategies in countries, which have particular activities as a priority**



Source: own elaboration

Slovak republic pays attention to coordination of innovation tools, inflows of foreign direct investments oriented on innovation support or adequate usage of structural funds. By contrast Hungary excels in innovation strategies connection and informatization development. On the other side patent protection and research commercialization are not priorities in strategies. Czech Republic pays special attention to research commercialization.

This similarity shows fact, in V4 countries is national level still determining power for innovation support. Strategies are often used to adapt to available national programs or to other possibilities of financing. Also based on our experiences we can observe, that inspiration for strategies creation regions derive from other strategies already realized in the country and from strategies from similar regions within other countries of European Union.

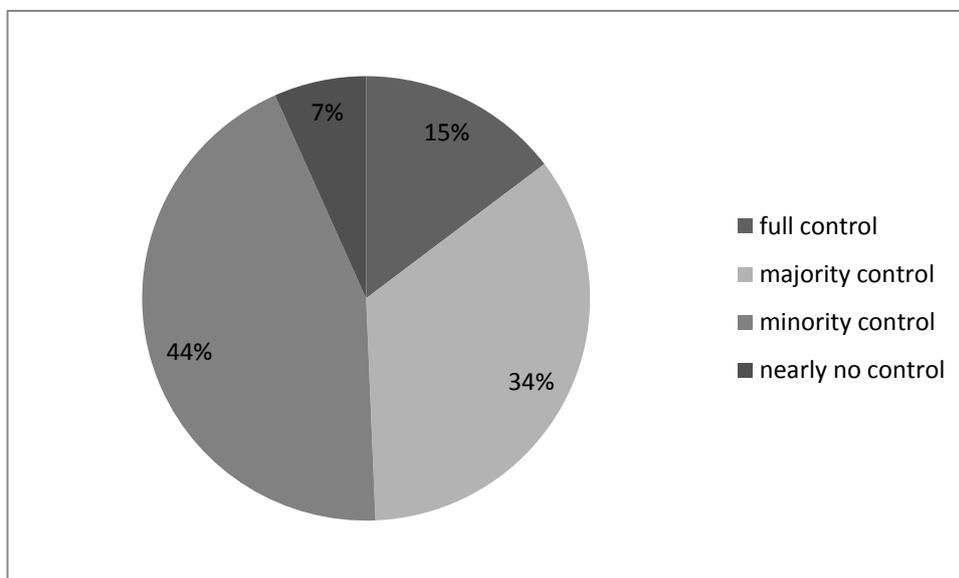
During the process of strategies evaluation had been occurred some interesting conclusions:

- Most of the strategies are design very wide with a lot of measures, which is practically impossible to fill up in determined horizons. All types of regions had been trying to use all scale of measures directed to creation of high-innovative region, what however is not very realistic for all of them.
- Strategies varied according to the approach to sectors. Almost the half of strategies contained measures on sector principle, 5 strategies shared the same principle. On the other side, big part of the strategies didn't deal with sector definition of specialization of regions at all.
- Another dividing network is the orientation of RIS on companies. The most strongest support of companies have RIS in Hungary, where the support of companies was in the implementation center of RIS, on the large scale in Poland and Czech republic was very similar situation. RIS in Slovakia were more markedly oriented on public sector. In all countries obtained measures oriented on existing companies, most of the RIS had also special measures for new innovative companies support, more visible these measures absented in Slovak republic.
- Implementation of strategies is often divided between huge amount of institutions, while regional government play minority role in different regional government and doesn't play the coordinating role of these institutions.

It has to be considered, that this analysis contains measures, which regional governments plan realize, therefore it give picture about their perception of innovations in region as about the real ability of regions raise their innovation potential. The best way of documenting it is in field of financial sources for innovations. This activity can be seen in almost every strategy, almost none of regions is able to devote sources for innovation support. According to RIS proposals the majority of measures should be financed from structural funds or from national budgets. The real strategy implementation is in a major measure depends on external factors, which are out of region. That was shown also in creation of innovation strategies, when the crucial role played financing from European Union funds, thanks to them all studied innovation strategies had been created. Regions don't dispose of almost any of own innovation supporting funds, what is a huge difference compared to some advanced countries: as an example we can use a lot of funds and initiatives in northerly countries [4].

Problem in creation and implementation of innovation strategies is the fact, that regional governments as the main creator of plans of economic and social development, don't support creation of innovation too much, whether in financial of content point of view. When we had evaluated suggested measures for innovation support, only 15 % of them were directly realized and influenced by regional government (there were only measures of information and propagation activities). Regional government is in more than half of measures only as a supportive partner institution, which doesn't have any influence on fulfilling suggested measures (as shown in graph 2.3).

**Graph 2.3 Division of activities in the strategies according the level of implementation control by regional government**



Source: own elaboration

### 3 Conclusion

Support if innovation is relatively new phenomenon for all studied regions. Most of them has been prepared they first regional innovation strategy within last three years. Despite of this, they regional innovation strategies contain a very complex measures to support of innovations. Main problems in these regions are related to lack of financial resources for

innovations directly govern by regional bodies. This situation is much worse than in western Europe countries. Most of the sources for innovation comes from European funds. This cause very unusual situation for two metropolitan regions – Praha and Bratislava. Both of them are above average in all measures related to innovation infrastructure as well as innovation results (like patents). However, next years vast majority of public funds for innovation will go to other regions in these countries, so there is real danger of „cathedrals in the desert“ as mentioned above.

Regions in central Europe also suffer by lack of coordination in innovation policies. We showed, the governments are not (to the large extent) able to control innovation support instruments in their regions. We could see creation of regional innovation centres as an example. These centres will be created from EU support in each regions, but they should be specialized according the national innovation strategy, so regions have a very little chance to influence orientation of these centres.

The strategies looks very similar despite of great differences among the regions. Its necessary to say, that we analyze only supposed measures in the strategies, the real innovation processes will be much more influenced by implementation of each strategy. We also expected much bigger differences among the regions in this phase of innovation support, but we need to wait a few years to be able to analyze this.

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