

CZECH PARTICIPATION IN PROJECTS FINANCED FROM THE EUROPEAN FRAMEWORK PROGRAMMES

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Abstract

The aim of the article is to introduce the research whose intention was to characterize those organizations in the Czech Republic which received grant for research or innovation projects from the 5th and 6th Framework Programme supporting research activities in the EU. The database was made to identify the main features of Czech economic subjects according to development strategies, databases and documents of the Ministry of Finance, Information Service of the European Commission (CORDIS), the Academy of Sciences of the Czech Republic and the Czech Statistical Office. For this type of research the methodology of progress was specified and further statistical analysis describing 1,635 project teams of Czech economic subjects was carried out.

JEL Classification:

O31; O33; R11; R50.

Introduction

Technological progress is regarded as a key factor of the economic growth, in addition it is not available arbitrarily and it can be supported institutionally. The approach of the European Union to the issues of technological progress is based on the institutional support of research and development (further R&D). The European Union has had its own policy of research and development since 1994 based on the Maastricht Treaty from 1993. The European Framework Programmes are the main tools of such policy with the aim to create the European Research Space. For the current 7th Framework Programme for the years 2007 – 2013 €70 billion were allocated. [11, p. 6] The authors of this article deal with the question of whether the institutional support of the Framework Programmes in the Czech Republic is used more in the regions with lower or higher innovation potential. The aim of this article is to present partial research results which were carried out within the framework of the verification of the assumption that 'weak innovation potential of a region causes its retardation'. This research is a part of a research project of the Technical University of Liberec and the company VUTS, a.s. (reg. no. LE1100, from the programme LE - EUPRO II). To verify the above mentioned assumption, successfulness, skills and proficiency of Czech organizations were surveyed during realization of projects focused on the research and technological development. Namely it was shown on the example of drawing on financial resources from the 5th and the 6th Framework Programme of the European Union within the period of 1998 to 2008. [7] An

opinion of Z. Brož with which the authors fully identify is the main reason why the comparison of innovation efficiency of regions of the Czech Republic and the evaluation of proficiency of Czech organizations during realization of the Framework Programmes projects of the European Union were made. Quotation: 'In the academic community there is a consensus in that the Framework Programmes of the European Union represent the top of an imaginary ladder of the European quality.' [2, p. 4] Three preliminary assumptions were set. The first assumption 'U' stated that organizations of the 13110 sector – central government institutions and mainly universities would be among the most significant participants of these programmes. The second assumption 'FTE' supposed that regions with the highest share of full-time R&D workers would have the highest efficiency in acquiring the FP EU projects. The third assumption 'IP' assumed that in the regions with higher innovation potential (on the level of NUTS 3) there would be identified the biggest participation in the researched projects. For the given research the following **methodology** was carried out [9]:

- 1) The target sample for the analysis is at least 1,000 items.
- 2) Processing of a unique database. The sources of data are TC AV data, database of projects on CORDIS server [3] and ARES database [1].
- 3) The analysis of 1429 projects of the 5th and the 6th Framework Programmes of the EU with Czech participation within years 1998 to 2008.
- 4) Specification of innovation potential evaluation of a region on the level of NUTS 2 and NUTS 3.
- 5) Benchmarking of the efficiency of economic subjects and innovation potential of the given region.
- 6) Verification of the assumptions 'U', 'FTE' and 'IP'.

1 Innovation potential of the regions in the Czech Republic

In this chapter are described three approaches specifying innovation potential of regions in the Czech Republic.

1.1 Evaluation of regional innovation potential on the level of regional solidarity according to the EUROPEAN INNOVATION SCOREBOARD

For the evaluation of a regional innovation potential on the NUTS 2 level, the results from the EUROPEAN INNOVATION SCOREBOARD (further EIS) **within the period of 2005-2008 were used**. According to this methodology the regional innovation potential is compared based on seven indicators with the help of the so called SII-Summary Innovation Index [5]. The observed indicators are: human resources; financing and support; company investments; relations and entrepreneurship; inter-outcomes; innovating companies – MSP; economic effects. Innovation efficiency of the EU countries and the development trends are mutually compared to an average value of Summary Innovation Index (SII). [4] Thus, the countries are divided into four groups according to the characteristics defined by the SII indicator.

- The first group: leading countries, above-average value of SII and an increasing trend;
- The second group: average countries, above-average value of SII but a decreasing trend;
- The third group: catching-up countries, below-average value of SII but an increasing trend;
- The fourth group: countries with a threatened perspective of innovation efficiency, below-average value of SII and a decreasing trend.

It can be said that based on the comparison of an average annual rate of innovation index of the EU countries (EIS) within the period of 2005-2008, the Czech Republic is in the third group (EIS 2008: Innovation performance). The Czech Republic with its innovation efficiency has its position below the European average. However, when comparing the development, it can be said that there is a tendency towards the average value of innovation efficiency of other EU (27) countries. When surveying EIS, there are evaluated countries (NUTS 0, I) and also other lower territorial units on the level of NUTS 2. Thus, 203 European regions are evaluated. As it was found out from the EIS analysis results within the period 2006-2008, there are significant differences in the evaluation of innovation potential among Czech regions. The capital of Praha reached the 15th position out of 203 European regions. On the contrary other Czech regions are at the end of the list. The Moravian-Silesian Region can be found on around 180th position and the North-West Regions (Ústí nad Labem and Karlovy Vary Regions) are on 198th position. Their innovation potential is 3 or 6 times lower than that of the Praha capital. With respect to the fact that the aim of the article is not to evaluate the participation in the Framework Programmes of the EU on the level of NUTS 2, but on the level of NUTS 3, in the following part there are given other possibilities of the evaluation of innovation potential of regions.

1.2 The approach to the evaluation of innovation potential of the region in the Czech Republic according to the Czech Statistical Office on a regional level (NUTS 3)

The Czech Statistical Office (further the CSO) proposed one of the possibilities of the evaluation of innovation potential of regions, see [11]. With respect to the fact that the CSO has at its disposal a relevant database, a part of the second chapter deals with its methodology. The methodology of the CSO draws on the principles of classifying countries into the groups according to the size of innovation potential on the international scale. First the CSO made a comparison of regions according to several selected indicators between the years 2001 and 2006. These can be shares (and their growth) of R&D employees out of the total number of labour force, costs of R&D, R&D output evaluation (patents, applied samples, scientific publications, citations, sold licences), employment in high-technology branches, shares of employees with a university degree and shares of innovating companies, etc. As it is stated in publication [11] the CSO evaluates innovation potential based on seven indicators: costs of R&D; employment in R&D; patent activity; employment in HighTechnology branches and services; labour force with a university education and regional GDP. Based on the above mentioned indicators the regions in the Czech Republic were classified into type groups according to the size of their innovation potential. The values of the given indicators were assigned point values from max of 5 to min of 1. This selected method of evaluation uses indicators applied for comparing innovation potential of countries; however it is adapted to smaller regions on the level of NUTS 3. Further, the summation of acquired points and the classification of regions into the level of evaluation of innovation potential (IP) were carried out, see Table 1.

Tab. 1: The Evaluation of 6 categories of innovation potential indicators according to CSO

Region (NUTS 3)	Highly above-average	Above average	Average	Below average	High below average	Points in total	degree – IP evaluation
Praha Region	5	0	0	0	1	26	I – extremely strong
South Moravian Region	2	3	0	1	0	24	II – above average
Central Bohemian R.	2	3	0	1	0	24	II – above average
Pardubice Region	1	2	3	0	0	22	II – above average
Liberec Region	1	1	3	1	0	19	III – average
Olomouc Region	0	3	2	0	1	19	III – average
Plzeň Region	1	1	2	2	0	19	III – average
Hradec Králové Region	0	1	4	1	0	18	III – average
South Bohemian Region	0	1	4	0	1	17	III – average
Zlín Region	0	1	4	1	0	17	III – average
Vysočina Region	0	1	1	4	0	15	IV- below average
Moravian-Silesian Reg.	0	0	2	4	0	14	IV- below average
Ústí nad Labem Region	0	0	0	3	3	9	V- weak
Karlovy Vary Region	0	1	0	0	5	6	V- weak

Note (Table 1):

Points assignment to the evaluated indicators: highly above average = 5; above average = 4; average = 3; below average = 2; highly below average = 1; the grey area = adopted data from the CSO analysis within the period of 2000-2006

IP Degree: I. extremely strong IP; II. above average IP; III. average IP; IV. below average IP; V. weak IP

Source: CSO, adjusted

1.3 Innovation potential of regions on the level of NUTS 3 – according to the BRIS project

Another institution that was dealing with the problem of measuring innovation potential of the Czech Republic regions on the level of NUTS 3 was the AS CR. Its team worked out the methodology and the follow-up realization within the BRIS project - 'Bohemia Regional Innovation Strategy'. The aim of this project was to identify innovation potential of the regions in the Czech Republic with the help of assessment of key factors influencing the dynamics of innovation environment. The resulting typology of a region was used as a base for the recommendation to increase the current innovation potential. [8, p. 15] Publicly available source data or data purchased from the CSO were used to find out key factors characterizing innovation potential of regions. Individual regions were analyzed in the following groups of indicators: basic and demographic data; educational structure; economic activities, employment and unemployment; economic efficiency; investments; economic subjects; high-tech branches. The selection of indicators that had a significant influence on the ability of a region to create innovation environment was affected by the availability of quantitative data. 39 indicators were used to evaluate innovation potential. They represented inputs and outputs of the innovation process. Factor analysis utilizing the structure analysis of mutual dependences of input variables, see [8, p. 73], was used as an analytic tool for evaluating regional innovation potential. Based on these analysis 14 significant factors were specified and grouped into five sections (factors): driving force of innovations (students, work attraction, agglomeration advantages) – input; knowledge creation (focus on R&D, technological centres potential) – input; entrepreneurship and innovations (investments, industrial zones, project activities, institutions of innovation structure) – input; applications (macroeconomic indicators, High-tech branches, medium high-tech industry) – output; Intellectual property (intellectual property outputs, costs of intellectual property) – output.

Clustering was further used to find out typologies of regions in the Czech Republic according to their innovation potential. There were not submitted synoptic indicators of innovation potential for individual regions, see [8, s. 75-91]. Therefore for the research purposes

presented in this article potential indicators were given the same point evaluation as with the CSO evaluation to obtain a total innovation potential rating (see Chapter 1.2). In Table 2 the evaluation results can be found. The most balanced innovation potential without any below average factors was identified in the South Moravian Region. The weakest innovation potential is in the Karlovy Vary Region where out of 14 evaluated factors it has 2 below average and 10 highly below average factors.

Tab. 2: *The evaluation of indicators (14 categories) of NUTS 3 regional innovation potential according to BRIS*

No.	Region (NUTS 3)	highly above-average		above-average		average		below average		high below average		points in total
		frequency from 14 categories	points sum	frequency from 14 categories	points sum	frequency from 14 categories	points sum	frequency from 14 categories	points sum	frequency from 14 categories	points sum	
1	Praha Region	10	50	1	4	0	0	1	2	2	2	58
2	Central Bohemian R.	3	15	6	24	2	6	1	2	2	2	49
3	South Bohemian R.	2	10	4	16	5	15	3	6	0	0	47
4	Plzeň Region	1	5	4	16	6	18	2	4	1	1	44
5	Karlovy vary R.	0	0	0	0	2	6	2	4	10	10	20
6	Ústí nad Labem R.	1	5	1	4	3	9	7	14	2	2	34
7	Liberec Region	0	0	1	4	5	15	4	8	4	4	31
8	Hradec Králové R.	1	5	5	20	5	15	3	6	0	0	46
9	Pardubice Region	2	10	3	12	4	12	3	6	2	2	42
10	Vysočina Region	0	0	2	8	1	3	7	14	4	4	29
11	South Moravian R.	2	10	8	32	4	12	0	0	0	0	54
12	Olomouc Region	1	5	4	16	5	15	3	6	1	1	43
13	Zlín Region	1	5	2	8	4	12	6	12	1	1	38
14	Moravia-Silesian R.	1	5	3	12	4	12	4	8	2	2	39

Note (Table 2): highly above average = 5; above average = 4; average = 3; below average = 2; highly below average = 1; the grey area = data from the analysis of the CSO within years 2000 to 2006.

Source: *The analysis of the Academy of Sciences, CZ, p. 87, author's own calculation of a total rating*

1.4 Comparison of innovation potential evaluation on the NUTS 3 level according to the CSO and the AS CR

The chapter compares two methods for the evaluation of innovation potential of regions on the level of NUTS 3 in the Czech Republic. Source data of both methods include the period between 2000 and 2006. The CSO created intervals where minimum value was set on the level of 6 points (6 factors equal 1 point each) and maximum value is on the level of 30 points (6 factors equal 5 points each). Then, intervals were specified within the range of 10 (V degree); 11 to 15 points (IV degree); 16 to 20 (III degree); 21 to 25 (II degree); 26 and more (I degree). In their publication [8] the AS CR representatives do not provide any summary evaluation of innovation potential. Therefore the methodology of the CSO was utilized. The minimum value was set on the level of 14 points (14 factors equal 1 points each) and maximum value on the level of 70 points (14 factors equal 5 points each). Then, intervals were specified within the range of 24 ((V degree); 25 to 35 points (IV degree); 36 to 46 points (III degree); 47 to 57 points (II degree); 58 and more (I degree). Table 3 shows the comparison of results of innovation potential evaluation with both methods.

Tab. 3: Innovation potential evaluation of regions on the level of NUTS 3 according to the methods of the AS CR and the CSO

the AS CR			the CSO		
Praha Region	58	I.	Praha Region	26	I.
Central Bohemia Region	49	II.	Central Bohemia Region	24	II.
South Moravian Region	54	II.	South Moravian Region	24	II.
South Bohemian Region	47	II.	Pardubice Region	22	II.
Hradec Králové Region	46	III.	Plzeň Region	19	III.
Plzeň Region	44	III.	Liberec Region	19	III.
Olomouc Region	43	III.	Olomouc Region	19	III.
Pardubice Region	42	III.	Hradec Králové Region	18	III.
Moravian-Silesian Region	39	III.	South Bohemian Region	17	III.
Zlín Region	38	III.	Zlín Region	17	III.
Ústí nad Labem Region	34	IV.	Vysočina Region	15	IV.
Liberec Region	31	IV.	Moravian-Silesian Region	14	IV.
Vysočina Region	29	IV.	Ústí nad Labem Region	9	V.
Karlovy Vary Region	20	V.	Karlovy Vary Region	6	V.

Source: the CSO, the AS CR data – processed by the authors

When comparing the data in Table 3, it can be stated that four regions the South Bohemian Region, the Pardubice Region, the Moravian-Silesian Region and the Liberec Region show the shift in the ranking of descending point classification. The division of regions into weak (group IV. and V.) and the group with a strong innovation potential (I. to III.) reveals the key difference in classification of innovation potential of two regions, the Liberec region and the Moravian-Silesian Region. With regards to the controversial results in both regions, they were ranked into the group with a weak innovation potential. As far as **the Liberec Region** is concerned, the authors of the publication from the AS CR mainly criticize low creation of gross fixed capital and the share of the region on a total export and a certain stagnation of a business environment connected with a low volume of risk capital investments, small number of industrial zones (the second industrial zone was opened after the AS CR survey finished). On the other hand the Liberec Region holds the first position in the field of patents related to the investments in R&D, see [8, p. 102 – 103]. The measurement of the CSO corresponds more with the evaluation of regions on the NUTS 2 level (according to the European Innovation Scoreboard). Here the Liberec Region was also positively evaluated in the field of patent policy and costs of R&D. A slow development (however not the worst) can be noted only in the indicator of work force with a university degree, mainly the lack of university students, graduates with a permanent address in the region. As far as the **Moravian-Silesian Region** is concerned the authors of the publication from the AS CR positively value a high share of university students in the age range of 20 to 29 in the natural and technical fields (the highest in the CR), further, a number of subjects realizing R&D was stated as the above average indicator (as the fourth biggest base in the CR), on the other hand one of the most criticized fields is a publication activity, see [8, p. 112 – 113]. According to the CSO methodology, the indicator of costs of R&D is assessed as average. According to the CSO documents there is a rule that the bigger the company, the higher the share of innovation companies in the region. The evaluation of all other indicators are within the range of the tenth up to the twentieth position out of fourteen regions, thus below average, see [11, p. 33].

2 Analysis of the Czech participation in the 5th and 6th Framework Programme of the EU

The data from the Technological Centre of the AS CR and an available database of projects on CORDIS server [3] served as a source of the carried out analysis of Czech regional

participation. 1429 projects were evaluated within the period of the 5th and 6th EU Framework Programme and around 200 of them were solved by more than one Czech project solving team. Therefore, the created database of Czech participation in the EU Framework Programmes contains 1,635 units. The database was created in the environment of Microsoft Access and consists of four modules. The first two modules provide data about the projects participation, for the 5th and 6th framework programme separately. In the third module there is information about a Czech organization involved in the given project and the fourth module gives more information on receiving other grants for the R&D that the given organization gains apart from the subsidy from the FP EU. 1st and 2nd module provide the following data: A) the information about the project such as a the registration number; status, name and acronym of a project, support programme, action category, contract type, contract aim, time information, project costs, the amount of subsidy, coordinator's country, number of participants. B) Information about the participation, the name and the address of an organization, type, the role in a project team. 3rd module contains information about an organization, the name, Identity number, address, regional classification (LAU 2, LAU 1, NUTS 3, NUTS 2), category according to the number of employees, legal form of entrepreneurship, websites, sector classification, support in DB CEDR, activity description, gaining subsidies and NACE (since 2009 CZ-NACE). 4th module includes information about research activities of a selected organization, the sum of costs of their realization and the results such as patents, prototype, the methodology used and -semi-performance, technology.

2.1 Characteristics of data file

The total number of participations was 1,635, realized by 487 organizations. 42% of the total number of organizations was from the capital of Praha Region, 13% were from the South Moravian Region, more in Table 4. Further, Table 4 gives information about the geographic distribution of the FP EU participation on the level of NUTS 3 and the average number of the FP EU projects realized by organizations of the given region.

Tab. 4: Regional distribution of organizations involved in the 5th and 6th FP EU projects

NUTS 3	Absolute no. of participation	Relative no. of participation in %	Absolute no. of organizations	Relative frequency of org. in %	No of projects per 1 org.
Praha Region	954	58.35	203	41.68	4.70
South Moravian Region	254	15.54	63	12.94	4.03
South Bohemian Region	75	4.59	27	5.54	2.78
Plzeň Region	51	3.12	23	4.72	2.22
Moravian-Silesian Region	50	3.06	26	5.34	1.92
Zlín Region	49	3.00	27	5.54	1.81
Central Bohemia Region	47	2.87	27	5.54	1.74
Olomouc Region	35	2.14	16	3.29	2.19
Pardubice Region	32	1.96	20	4.11	1.60
Hradec Králové Region	25	1.53	14	2.87	1.79
Liberec Region	25	1.53	13	2.67	1.92
Vysočina Region	16	0.98	11	2.26	1.45
Ústí nad Labem Region	14	0.86	12	2.46	1.17
Karlovy Vary Region	8	0.49	5	1.03	1.60
SUM	1635	100.00	487	100.00	

Source: author's own calculation

2.2 Data analysis

For the comparison of inter-regional participation in the FP EU and the verification of the set hypotheses there were chosen two basic criteria. Supposing that the most capable R&D workers in individual regions are either direct participants of the FP projects or the projects of the FP are focused on their support and development, there was chosen **the criterion of recalculated number of R&D workers in the region** for comparison of participation in individual regions. The total number of participation in the EU Framework Programmes was recalculated to the average work load of the R&D worker, the so called FTE. The second criterion is the analysis of institutional participation on projects of the EU Framework Programmes in individual regions in the Czech Republic.

2.2.1 FTE – Average number of employees recalculated to a full time work devoted to R&D activities

Research and development employees are those (according to OECD Frascati manual) research workers who are directly involved in the R&D activities including these who work as back-up officers not dealing with R&D directly, see [6]. With a view to the fact that R&D workers may deal with the mentioned activities only part-time, the number of employees must be recalculated to the so called FTE. This recalculation has gone through several changes since 1995 and since 2005 it has been using a new methodology from the CSO, see [10]. The FTE data concerning R&D activities in the Czech Republic are stated in Table 5. The FTE indicator (Full Time Equivalent) specifies disposable working time of a human resource. It expresses 100% of the capacity of a given type of the resource. The resource is then compared with a total number of times which the given type of resource does in a given process. Based on this information the workload of the given type of resource can be stated, according to equation (1)

$$v_i = \sum_{j=1}^n \frac{c_{ij}}{FTE_i}, \quad (1)$$

where

i type of resource;

v_i workload of an i -th resource type;

j number of process activity;

n number of activities in the process;

c_{ij} time allocated to the given j -th process activity done by the given i -th resource type;

FTE_i Full Time Equivalent of i -th resource type.

$$CRP = \frac{\sum_{i=1}^n RP_i}{\overline{FTE}}, \quad (2)$$

where

CRP corrected regional participation;

RP absolute frequency of regional participation;

\overline{FTE} average FTE in the Region (in the period 2005 – 2008).

The conversion of FTE to the number of inhabitants in a region can be evaluated subsequently: Descending order of regions expresses an input of a human potential of a converted number of R&D workers. 1% of the inhabitants in Praha Region may be characterized as full-time R&D workers. The lowest ratio of full-time R&D workers out of the total number of inhabitants can be observed in the Karlovy Vary Region. The data from the research were recalculated according to the equation (2) to enable the comparison of frequency of participation with regard to the capacity of R&D workers. Table 6 shows the comparison of converted participation of Czech economic subjects in the FP EU projects sorted by region. There can be noted a significant change in the order of participation of economic subjects of the Karlovy Vary Region (positive shift from the last to the first place), the Moravian-Silesian Region (positive shift), the Ústí nad Labem Region (positive shift), the Vysočina Region (positive shift), the Central Bohemian Region (negative shift) and the Pardubice Region (negative shift).

Tab. 5: *The development of a converted number of R&D employees*

	2001	2002	2003	2004	2005*	2006	2007	2008	average 2005-2008
CR in total	14,986	14,973	15,809	16,300	24,169	26,267	27,878	29,785	27,025
Praha Region	6,735	6,869	7,484	7,363	10,580	11,773	13,125	13,454	12,233
Central Bohemian R.	1,600	1,815	2,007	1,947	2,420	2,677	2,763	3,025	2,721
South Bohemian R.	545	539	577	547	812	848	782	809	813
Plzeň Region	544	481	284	351	814	631	721	742	727
Karlovy Vary R.	69	48	58	54	29	36	39	106	52
Ústí nad Labem R.	262	194	181	213	302	395	411	398	376
Liberec Region	353	393	326	415	669	1,037	779	735	805
Hradec Králové R.	236	296	299	517	733	628	740	701	700
Pardubice Region	573	552	517	567	907	1,117	1,159	1,176	1,090
Vysočina Region	143	164	200	243	369	258	305	387	330
South Moravian R.	2,241	1,996	2,098	2,244	3,596	3,705	3,749	4,723	3,943
Olomouc Region	479	406	490	533	1,016	991	1,042	1,073	1,031
Zlín Region	349	364	370	359	646	766	726	824	741
Moravian-Silesian R.	855	855	918	945	1,277	1,404	1,536	1,632	1,463

Note 1: The data from the Czech Republic also include R&D employees that work in a private non-profit sector.

Note 2: * The FTE indicator calculation has been significantly changed in the Czech Republic since 2005. The data from 2005 onwards are not comparable with those before 2005 (1995-2004).

Source: the CSO data, author's own calculation of average values

2.2.2 Analysis of institutional participation

Institutional sectors enable an economic subject to be categorized among units with a similar aim and a type of economic behaviour. Every organization (a unit) is categorized in one institutional sector. The analysis revealed that central and government organizations are the most frequent participants of the FP EU projects with more than 50% of all participations followed by non-financial organizations with 25% from the total participation. When analysing the representation of **institutional sector of central government institutions (ministries, academies, universities etc.)** in a territorial structure, it can be stated that the most institutions are in the South Bohemian Region (approx. 70% of the total), the capital of Praha (approx. 65% of the total) and in the South Moravian Region (approx. 64% of the total). Institutions in the Vysočina Region, the Ústí nad Labem Region and the Karlovy Vary Region show zero participation. When analysing the participation of **private companies (with up to 250 employees)** the situation is nearly reversed. It was found out that the following regions have the biggest share of a private sector in a regional participation: the Hradec Králové Region (approx. 72 %); the Zlín Region (approx. 70 %); the Ústí nad Labem Region (64 %); the Pardubice Region (approx. 64 %); the Plzeň Region (approx. 63 %); the Liberec Region (63 %); the Olomouc Region (51 %).

Tab. 6: Comparison – sorted in a descending way by absolute frequency of the FP EU participation

Region	Absolute frequency of the FP EU participation	Converted part in the FO to 1 FTE	Order of converted participation
Praha Region	954	0.078	3.
South Moravian Region	254	0.064	5.
South Bohemian Region	75	0.092	2.
Plzeň Region	51	0.070	4.
Moravian-Silesian Region	50	0.035	10.
Zlín Region	49	0.066	6.
Central Bohemian Region	47	0.017	14.
Olomouc Region	35	0.034	11.
Pardubice Region	32	0.029	13.
Hradec Králové Region	25	0.036	9.
Liberec Region	25	0.031	12.
Vysočina Region	16	0.049	7.
Ústí nad Labem Region	14	0.037	8.
Karlovy Vary Region	8	0.152	1.

Source: own

Conclusion

Based on the results of the analysis, it can be said that all regions of the Czech Republic were involved in research projects of the Framework Programmes. From the institutional point of view the organizations that mostly participate in these projects have their headquarters in the capital of Praha with more than fifty per cent of the total participation of all Czech subjects. We can say that this situation corresponds with the highest number of the most capable R&D workers in the capital of Praha, see Table 6. The most significant participants regarding the frequency are organizations of central government institutions sector (approx. 57%), out of which universities dominate (approximately 461 participations, i.e. 28% of the total) followed by allowance organizations (393 participations), organizational state units (52 participations) and public research institutions (30 participations). It can be said that the **‘U’ assumption has been positively verified**, the most significant participants of the FP EU will be organizations of the 13110 sector – central government institutions, mainly universities. When analysing intensity of participation in the 5th and 6th Framework Programme the Czech regions can be divided **into two groups**. The absolute value of 0.05 was set as a lower limit for determination of ability significance in the FP EU converted to 1 FTE. Regions with lower abilities range between the values of 0.00 – 0.049999, see Table 6. The analysis showed a considerable difference in an absolute number of regional participations (NUTS 3) in the FP EU. The lowest absolute number of participations was in the Karlovy Vary Region. However, when considering the capacity of R&D employees in individual regions, there was noted a high productivity of R&D workers just in the Karlovy Vary Region. At the same time this region has the lowest FTE and the lowest innovation potential. Therefore, the second preliminary assumption has been refuted stating that regions with the highest share of full-time R&D workers will have the highest efficiency in acquiring the FP EU projects. The approaches to the innovation potential evaluation of regions (NUTS 3) in the Czech Republic are summarized in Chapter 1.4. Based on the results, there were created two groups of regions. The first group includes the regions with a strong innovation potential or with a fast growth prerequisite. The following regions are in this category: the capital of Praha, the Central Bohemian, the South Moravian, the Pardubice, the Plzeň, the Olomouc, the Hradec Králové, the South Bohemian, the Zlín Regions. The regions with a weak innovation potential

or a slow growth are the Karlovy Vary Region as the weakest, further the Ústí nad Labem, the Vysočina, the Moravian-Silesian and the Liberec Regions. As the Table 6 shows the biggest participation converted to FTE was proofed in the Karlovy Vary Region, the lowest in the Central Bohemia Region. Thus, the assumption 'IP' has been refuted stating that in the regions with higher innovation potential (on the level of NUTS 3) there will be identified the biggest participation in the researched projects.

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ČESKÁ ÚČAST V PROJEKTECH FINANCOVANÝCH Z RÁMCOVÝCH PROGRAMŮ EU

Cílem článku je představit výzkum, jehož záměrem bylo charakterizovat organizace České republiky, které obdržely grant pro výzkumný či inovační projekt z 5. a 6. rámcového programu podporující výzkumné aktivity Evropské unie. Byla vypracována databáze, která identifikuje vlastnosti českých ekonomických subjektů na základě rozvojových strategií, databází a dokumentů Ministerstva financí, Informačního servisu Evropské komise (CORDIS), Akademie Věd České republiky a Českého statistického úřadu. Pro tento výzkum byla specifikována metodika postupu a následně provedena statistická analýza popisující v regionálním členění 1635 projektových týmů českých ekonomických subjektů.

DIE TSCHECHISCHE TEILNAHME AN AUS RAHMENPROGRAMMEN DER EU FINANZIERTEN PROJEKTEN

Ziel dieses Artikels ist es, eine Untersuchung vorzustellen, deren Ausrichtung darin bestand, die Organisationen der Tschechischen Republik zu charakterisieren, welche einen Grant für Untersuchungs- oder Innovationsprojekte aus dem Untersuchungsaktivitäten der Europäischen Union unterstützenden 5. und 6. Rahmenprogramm erhalten haben. Es wurde eine Datenbank erstellt, welche auf Grundlage von Entwicklungsstrategien, Datenbanken und Dokumenten des Ministeriums für Finanzen, des Informationsdienstes der Europäischen Kommission (CORDIS), der Akademie der Wissenschaften der Tschechischen Republik sowie des tschechischen statistischen Bundesamtes die Eigenschaften tschechischer ökonomischer Subjekte identifiziert. Für diese Untersuchung wurde eine Vorgangsmethode spezifiziert und anschließend eine statistische Analyse durchgeführt, welche in regionaler Gliederung 1635 Projektteams tschechischer ökonomischer Subjekte beschreibt.

CZESKI UDZIAŁ W PROJEKTACH FINANSOWANYCH Z PROGRAMÓW RAMOWYCH UE

Artykuł ma na celu zaprezentowanie badań, które miały na celu scharakteryzowanie jednostek z Republiki Czeskiej, które otrzymały dofinansowanie na projekt badawczy lub innowacyjny z 5. i 6. programu ramowego wspierającego przedsięwzięcia badawcze w ramach Unii Europejskiej. W oparciu o strategie rozwoju, bazy danych i dokumenty Ministerstwa Finansów, Serwisu Informacyjnego Komisji Europejskiej (CORDIS), Akademii Nauk RCz oraz Czeskiego Urzędu Statystycznego stworzono bazę danych identyfikującą cechy czeskich podmiotów gospodarczych. Dla celów przeprowadzenia badań opracowano plan działania, po czym przeprowadzono statystyczną analizę opisującą 1635 zespołów projektowych czeskich podmiotów gospodarczych w podziale wg regionów.