

# EU Cohesion Policy in the Czech Republic and Poland: Comparison of Intervention Areas Among Regions

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## Abstract

The cohesion policy of the European Union represents a significant part of its budget and delivers interventions across all regions of the EU. There is little consensus on its efficiency, and its links to fostering convergence on the regional level are uncertain. Nevertheless, regions were shown to benefit from policy interventions promoting their growth and development. The main objective of the policy is to reduce regional disparities that exist among lagging and other, more developed regions. Therefore, this paper focuses on the deliverance of the cohesion policy in Central and Eastern European countries, Poland and the Czech Republic. It explores the support of thematic interventions across its regions in the 2014-2020 period. Findings point out different thematic support of Polish regions according to their relative advancement. Lagging regions of Poland received more substantial support related to promoting the endogenous potential for development and increase in quality of human capital. In contrast, the Czech regions were treated comparably regardless of their development stages. This points to different approaches to implementing the cohesion policy in these countries.

## Keywords

Cohesion policy, Regional development, European Structural and Investment Funds, Lagging regions, Czech Republic, Poland

## JEL Classification

J18, R11, R58

## Introduction

The advancement of regional economic, social and environmental characteristics weighs heavily on the shoulders of citizens, politicians, policy-makers, and organisations alike. Most countries worldwide can identify lagging regions within their territories. Regions show negative development trajectories and search for a recipe to change them. These regions are usually at the forefront of thoughts of the politicians and policy-makers who struggle to put forward sufficient measures to overturn their negative development, lacking both money, political consensus, and internal resources within the lagging regions themselves. The membership in this undesirable club also changes as regions undergo periods of comparative advancement and periods of comparative lagging behind. Rodríguez-Pose (2018) named a few of those that experienced advancements such as Asian Dragons, southern Germany, or Belgian Flanders but also gave examples of the other side of the coin, namely Detroit, Charleroi or Katowice. Since lagging regions are not only prevalent but almost guaranteed, they are the focus of many a public policy. Within the European Union (hereinafter EU), the policy that undertakes significant efforts to improve their lot is the cohesion policy. Using the European Structural and Investments Funds (hereinafter ESIF), this policy represents roughly a third of the EU budget redistributed among beneficiaries within the European NUTS 2 regions with a preference for the lagging ones (Cerqua & Pellegrini, 2018). In this paper, the authors examine the support of the cohesion policy allocated to comparatively lagging and advanced regions in terms of its thematic structure on examples of Polish and Czech regions. The question is not whether the lagging regions are supported more than the advanced regions. Instead, this paper asks what types of interventions are undertaken across differently advanced regions with a perspective on whether it might positively influence their development, leading to catch-up with the more advanced regions.

The paper is structured as follows: theoretical background gives brief notions on cohesion policy and convergence

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within the EU, Poland and the Czech Republic, following section gives an overview of the data and methods used to process it, the fourth section presents the results and discussion, finally, fifth contains the concluding remarks.

## Theoretical Background

Redistributive support of lagging regions is a time tried approach used within the cohesion policy of the EU. This policy's leitmotiv is reducing regional disparities among the European regions. Within its framework, the lagging, or less advanced regions as they are termed, are identified by measuring gross domestic product per capita. NUTS 2 regions with less than 75 % of the EU average are considered lagging within the Union. However, the ability of this sole indicator to encompass the diversity of EU regions is in question (Pilati & Hunter, 2020). In 2014-2020, the cohesion policy budgetary allocation earmarked for lagging regions was more than three times the amount for the more developed regions (European Commission - Directorate-General for Regional and Urban Policy, 2022). Even with the lagging regions at the forefront of interventions, there has been a shift in this policy's paradigm. It gradually emphasises the need for endogenous development, promoting region-specific excellence rather than merely redistributing resources among regions (Camagni & Capello, 2015). Since the beginning of the 2007 period, the focus has shifted to promoting growth in core areas of regions and spill-over effects are expected to boost the development of the surroundings in line with the growth pole theory (Rauhut & Humer, 2020). Thus, the results of policy are expected to cover both lagging and more developed regions (Crescenzi & Giua, 2020).

The cohesion policy is delivered through regionally, nationally, and internationally implemented operational programmes that are allocated resources from the ESIF and further distribute them across regions to individual actions carried out by specific beneficiaries (Stephenson, 2016). The policy interventions are delivered to all NUTS 2 regions across the EU regardless of their advancement status. Nevertheless, there is a marked preference to intervene in lagging regions. Support's (un)successful impact is subject to vast academic and policy interest and continued discussion.

The early interventions of the modern EU cohesion policy emerged from the late 1980s reform in lagging regions (then named objective 1 regions) were discussed by Rodríguez-Pose and Fratesi (2004). They found interventions predominantly aimed at infrastructure, environment and transport networks development. However, the impact on regional growth was judged to be disappointing, mostly short-term. A later study focused on UK lagging regions under objective 1 warned of a decline in socio-economic conditions after the support was withdrawn (Di Cataldo, 2017). Research focusing on cumulative job creation was conducted by Martin and Tyler (2006), who found a positive impact. Crescenzi and Giua (2020) also noted a positive economic impact of the policy in objective 1 regions regarding growth and employment; however, these authors cautioned on different impacts across the member states. Studies also concerned with the post-2000 period show positive impacts on economic growth (Pellegrini et al., 2013) and decreased regional disparities (Kyriacou & Roca-Sagalés, 2012). While Becker, Egger and von Ehrlich (2012) present ambiguous findings that indicate the positive effects of interventions on growth are dampened by inefficiencies in the allocations and weakening of the effect in crisis (Becker et al., 2018).

The cohesion policy interventions certainly do have an effect, although its longevity, efficiency, size, and positivity are subjects of continuous debate. Nevertheless, the policy is a long-standing one and has previously been an item of attraction for prospective new member states and a compensation tool to soften the effects of other policies. The primary goal remains to decrease the disparities among the regions in the EU through its deliverance. The policy has a relatively broad scope in the areas of intervention it supports, covering topics perceived as significant drivers of economic growth.

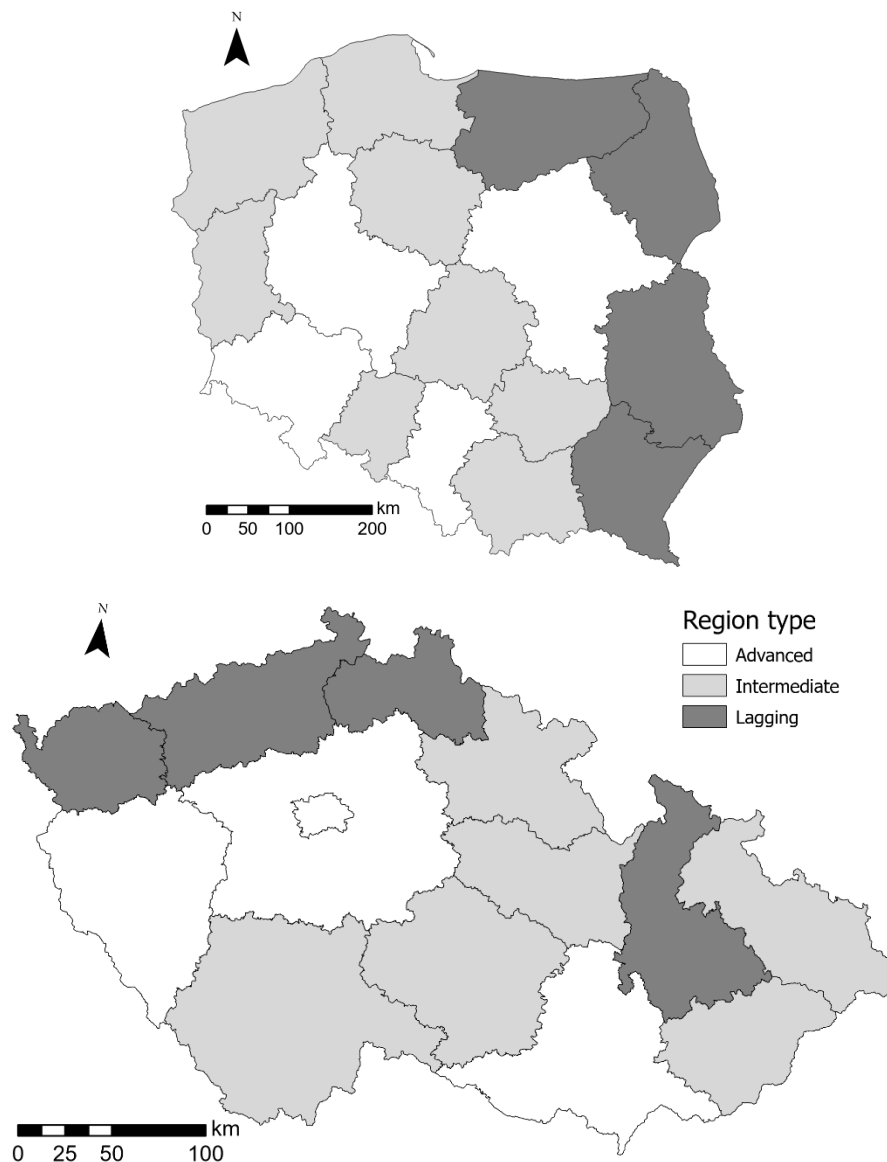
The main objective of the cohesion policy in the long term is convergence. The phenomenon is intensively studied in and out of connection with the cohesion policy. Cappelen et al. (2003) posited that cohesion policy positively impacted regional performance in the 1990s, but convergent processes, if any, took place among countries rather than among regions of the EU. Later on, Iammarino et al. (2019) also pointed out that traditional EU policy approaches have failed to generate economic convergence among the regions, especially post 2000. Borsi & Metiu (2015) identified convergence clubs among EU member states and highlighted the differences between western and central and eastern European members. Similarly, von Lyncker & Thoennesen (2017) found convergence clubs at the NUTS 2 level and highlighted the geographical divide in convergence across the EU. Effectiveness of the policy was researched by Di Caro and Fratesi (2021) resulting in highlighting of interregional differences. While the EU supports lagging regions by higher amount of assistance by design, the authors identified cases of both effective and ineffective support in both lagging and more developed regions, counting both Polish and Czech lagging regions more often among effective cases (Di Caro and Fratesi, 2021).

The countries of interest, Poland and the Czech Republic, experienced a significant increase in regional disparities in the post-communist period while experiencing convergence to the EU level (Kokocinska & Puziak, 2018; Maier & Franke, 2015). Wójcik (2021) examined Polish NUTS 2 regions concluding that polarisation between Mazowieckie NUTS 2, containing capital Warsaw, grew in the post-communist period regardless of EU accession. Czudec & Kata (2016), as well as Wójcik (2021), highlighted the lagging eastern regions of Poland that fell behind despite targeted support from cohesion policy resources (Pięta, 2021).

The Czech Republic, too, experienced polarisation between NUTS 2 Prague containing the capital city and other regions. Later, though, some studies found that convergence occurred on the Czech NUTS 3 regions level (Žáček et al., 2019). However, some did not attribute it to the cohesion policy interventions (Brzáková & Kraft, 2017). Lagging NUTS 3 in the Czech Republic were identified by Martinčík & Šlehoferová (2014), especially among those structurally affected.

## Data and Methods

The datasets used for the analysis describe two EU countries from Central and Eastern Europe, the Czech Republic and Poland. Both are post-communist countries comprised, from the points of view of the EU, almost solely from lagging regions. Remeikienė et al. (2020) considered both of them at the same level of development intensity and uniformity. From the EU point of view, these were all regions with the gross domestic product per capita lower than 75 % of the EU average. Yet, the analysis and the comparison of both countries is desirable, as for all their similarities and new member state status, both countries chose rather different approach to spatial implementation of the EU cohesion policy in lagging regions delimited internally.



**Fig. 1.** Lagging, intermediate, and advanced regions in Poland and the Czech Republic.

**Source:** Eurostat (2021), Główny Urząd Geodezji i Kartografii (2022), State Administration of Land Surveying and Cadastre et al. (2021).

The larger Poland, approximately 3,5 times the population size of the Czech Republic, relied on implementation of intranational funding through four national, 16 NUTS 2 regional, and one supraregional operational programme, focusing on the area of eastern Poland that comprises of the most lagging NUTS 2 regions (Ministerstwo Funduszy i Polityki Regionalnej, 2020). The significantly smaller Czech Republic does not fit as well to the EU NUTS 2 classification and in 2014-2020 period chose to abandon regionally administered operational programmes at this level. Instead, it implemented the policy inside the country via eight operational programmes, only one of which was regional, targeting the most developed capital city (Ministry of Regional Development, 2020). Aside from

different approach to implementation, both countries suffer from interregional differences. In this paper, they were described by the average values of the gross domestic product per capita at current prices as between 2014 and 2019, as the data for the year 2020 were not yet published for all regions at the time of writing of this paper. Mirroring the cohesion policy division into three categories according to relative advancement, the regions of each country were divided into three categories according to quartiles of gross domestic product per capita. The lowest quartile was designated as lagging regions, while the highest was designed as the advanced regions. According to their advancement, those outside the mentioned bounds were determined to be intermediate regions (see fig. 1).

The analysis of thematic support across regions was initially conducted at two different NUTS levels. NUTS 3 level units were chosen for the Czech Republic, NUTS 2 for Poland. Although different in scaling the EU uses, these units have similarities due to the vast difference in total population size. Both NUTS 2 of Poland and NUTS 3 of the Czech Republic are national units of regional self-governance. A similar count of 16 (Poland) and 14 (Czech Republic) makes them apt for comparison across the two countries.

The datasets obtained described the individual interventions of cohesion policy in both countries. Only national interventions were considered. They were published per EU regulation and contain information on thematic areas of intervention, location, and allocated resources. The datasets described the situation as of 1st January 2022. For purposes of the following analysis, some interventions were excluded. They were interventions without an assigned place of implementation, without an assigned thematic area of intervention, and those prematurely terminated. The location recorded presented a challenge. Some of the interventions spanned multiple regions. Thus, the allocation could not be precisely calculated as there was no indication of the division of resources. Such records were excluded. Finally, interventions in the thematic area technical assistance were not considered in the following analysis.

The inclusion and exclusion influence on amount in the analysis is illustrated in the following table which shows, that in both countries, the analysis included more than 80 % of the funding published, accounting for the above-mentioned exclusions.

**Table 1.** Inclusion of data sources into analysis of funding.

	Poland	Czech Republic
Total amount published (PLN/CZK)	551 434 620 617,77	850 211 208 467,88
Technical assistance (PLN/CZK)	3 887 975 742,68	7 666 627 320,59
Amount analysed (PLN/CZK)	449 321 987 085,71	725 489 045 484,77
% of financing included in the analysis	81,5	85,3

**Source:** authors' calculations based on Ministerstwo Funduszy i Polityki Regionalnej (2022) for data on interventions in Poland and Ministry of Regional Development (2022) for data on interventions in the Czech Republic.

Thematic areas were identified per the European Commission Implementing Regulation No. 215/2014 that lists nine areas of interventions from the ESIF (European Commission, 2014):

1. Productive investment
2. Infrastructure providing basic services and related investment
3. Social, health and education infrastructure and related investment
4. Development of endogenous potential
5. Promoting sustainable and quality employment and supporting labour mobility
6. Promoting social inclusion, combating poverty and any discrimination
7. Investing in education, training and vocational training for skills and lifelong learning
8. Enhancing institutional capacity of public authorities and stakeholders and efficient public administration
9. Technical assistance

The resulting datasets were used for the final analysis of per capita support in various thematic categories across regions of various advancement. The per capita values were recalculated using the average number of inhabitants of analysed regions from the years 2014-2020, mirroring the duration of the programming period of the EU for which these interventions were earmarked. The data obtained for the analysis had a non-normal distribution and the number of observations was small due to the small number of regions in the individual GDP related categories. This prevented the authors from using a parametric test and so Kruskal Wallis test, a non-parametric one-way ANOVA for three and more samples, was used to find out whether there a statistically significant difference in mean ranks could be observed among the lagging, intermediate, and advanced regions in the respective countries (Chan & Walmsley, 1997; Ostertagová et al., 2014), ie whether amount of support obtained in various categories referred above differed among these categories of regions. Subsequently, the authors calculated all pairwise comparisons, as recommended by Ruxton & Beauchamp (2008), as a post hoc test to Kruskal Wallis test to find out what categories of regions showed significant differences among themselves with the expectation of finding the most

differences between the advanced and lagging types of regions in the respective countries, as these categories differ the most in their values of gross domestic product per capita. In this post hoc test Bonferroni correction for significance was used to adjust the p-values of pairwise comparisons to avoid type I error (Gelman et al., 2012).

## Results and Discussion

Results from analysing Polish NUTS 2 indicate that there were indeed differences among mean ranks of the per capita support across a variety of topics that the ESIF funding supported during the 2014-2020 period. These differences evidenced themselves in support aimed at intervention area "development of endogenous potential" (ENDOG), which included investments into research, development and innovation, business development, ICT or environmental issues. Support of endogenous potential for development of the regions was markedly higher in lagging regions than advanced regions, as evidenced by the post hoc test ( $p=0,028$ ). In contrast, the difference between intermediate to advanced regions and intermediate to lagging regions was insignificant. The importance of investment RDI is well documented across literature regarding their importance for economic development (e.g. Sanso-Navarro & Vera-Cabello, 2015). In Poland, the support of innovativeness may not be entirely dependent on ESIF interventions (Lewandowska et al., 2021; Szczygielski et al., 2017). Nevertheless, the EU accession fostered a greater interest in innovation policies (Suurna & Kattel, 2010) hampered in their implementation primarily by novelty and lower administrative capacity within Central and Eastern European countries (Karo et al., 2017). Therefore, the importance of RDI related activities in Poland for boosting regional development is not in question. However, Rodríguez-Pose & Crescenzi (2008) point out the importance of not only R&D and innovation but also the ability of a region to transform them into economic growth, which may be encouraged or hindered by socio-economic conditions present. Entrepreneurial support, too, has been identified as a source of growth in lagging regions (Stephens & Partridge, 2011). The Polish enterprises that have taken advantage of the public support perceive it as beneficial (Zajkowski & Domańska, 2019).

Results also pointed to a difference in intervention area aimed at "investing in education, training and vocational training for skills and lifelong learning" (EDU). As previously, the difference was marked between the advanced-lagging regions ( $p=0,018$ ), not so in the other pairwise comparisons. Containing activities connected with retaining students, access to education, and connection of education to the labour market, it echoes the importance of human capital in regions as proclaimed by Gennaioli et al. (2013) or in the countries of interest themselves by Wielechowski et al. (2021). Nevertheless, the scope of the interventions in this area is somewhat narrower. While certainly influencing the quality of human capital in the regions, they specifically targeted educational efforts. These, too, are viewed as necessary for regional development, particularly with an accent on higher education (Thanki, 1999).

The issues of marginalised groups, equal opportunities, combating discrimination, social entrepreneurship and community-led local development were tackled by intervention area "promoting social inclusion, combating poverty and any discrimination" (SOC\_INCL). These investments resonate with the sustained efforts of the European Union and its policies to emphasise activities resulting in a more socially just environment. Equality and social inclusion are mainstreamed into various EU policies (Rees, 2000), including cohesion policy. In this context, the notion of fostering social inclusion with a focus on the lagging regions confirms the accent on human capital quality influencing regional development. Among the Polish NUTS 2 region mean ranks of per capita investments differed most starkly among advanced vs lagging regions ( $p=0,043$ ), the investments being more significant in lagging regions. Intermediate and lagging regions were somewhat similar in these terms, whereas the differences between advanced and intermediate regions were seemingly larger if not reported as statistically significant at the alpha level of 0,05 ( $p=0,055$ ).

**Table 2.** Difference in the absorption of interventions across Polish NUTS 2.

	ENDOG	TECH_INFRA	EDU	INVEST	SOC_INCL	EMPLOY	SOC_INFRA	INSTIT
Kruskal-Wallis H	9,281	2,140	8,443	4,985	7,340	3,458	7,296	2,713
df	2	2	2	2	2	2	2	2
Asymp. Sig.	,010	,343	,015	,083	,025	,177	,026	,258

**Source:** authors' calculations based on Ministerstwo Funduszy i Polityki Regionalnej (2022) for data on interventions and Statistics Poland (2021) for data on population.

The last intervention area that recorded significant differences among mean ranks was the "social, health and education infrastructure and related investment" (SOC\_INFRA). This area may be connected to the previous ones oriented on social inclusion and education. However, it represents infrastructure rather than directly human resources-related interventions. It includes investments into childhood, primary, secondary, tertiary, and adult education infrastructure, as well as housing and health infrastructure. Kara et al. (2016) demonstrated the positive effect of social infrastructure investments on regional development. These types of intervention once more differed most significantly when comparing lagging and advanced regions ( $p=0,028$ ). This pattern is understandable as in the lagging regions, one can expect the infrastructure, either technical or social be less advanced.

The rest of the analysed categories "infrastructure providing basic services and related investment "(TECH\_INFRA), "promoting sustainable and quality employment and supporting labour mobility "(EMPLOY), "enhancing institutional capacity of public authorities and stakeholders and efficient public administration "(INSTIT), and "productive investment "(INVEST) evidenced no significant differences of mean ranks across the variously developed regions, promoting the assumption of roughly equally dispersed interventions among the NUTS 2 regions of Poland.

**Table 3.** Difference in the absorption of interventions across Czech NUTS 3.

	ENDO	TECH_INFRA	EDU	INVEST	SOC_INCL	EMPLOY	SOC_INFRA	INSTIT
Kruskal-Wallis H	0,595	2,657	0,729	0,081	2,381	3,800	0,181	0,595
df	2	2	2	2	2	2	2	2
Asymp. Sig.	0,743	0,265	0,695	0,960	0,304	0,150	0,913	0,743

**Source:** authors' calculations based on Ministry of Regional Development (2022) for data on interventions and Czech Statistical Office (2021) for data on population.

The Czech Republic results indicate no statistically significant difference among the mean ranks of the lagging, intermediate, and advanced categories of NUTS 3 regions. They point at a somewhat more even distribution of interventions across all researched intervention areas. The results might echo that the Czech analysis worked with smaller NUTS 3 units while compensating for the country's population and size differences. To ensure the difference lies not in that direction, NUTS 2 regions were also tested with the same results of no significant difference, further cementing the more spatially even distribution of investments into different areas.

**Table 4.** Difference in the absorption of interventions across Czech NUTS 2.

	ENDO	TECH_INFRA	EDU	INVEST	SOC_INCL	EMPLOY	SOC_INFRA	INSTIT
Kruskal-Wallis H	1,383	2,450	1,250	1,383	0,717	2,450	2,333	1,200
df	2	2	2	2	2	2	2	2
Asymp. Sig.	0,501	0,294	0,535	0,501	0,699	0,294	0,311	0,549

**Source:** authors' calculations based on Ministry of Regional Development (2022) for data on interventions and Czech Statistical Office (2021) for data on population.

In other words, unlike Poland, the Czech Republic tended to treat the regions, both at NUTS 2 and NUTS 3 level comparably. That is not to say there are no differences in the total amount the intervention brought into differently advanced regions received. Žáček et al. (2019) demonstrated differences in the total absorption of ESIF funding per capita and its influence on the gross domestic product using earlier data. However, marked differences in thematic areas of intervention are not present as they are in Poland. One might speculate this lack of difference might be connected to the "lack of fit". Poland identified its lagging regions at the NUTS 2 level and targeted them also by using regional operational programmes (Wójcik, 2021). The Czech Republic followed a national Regional Development Strategy that internally delimited its lagging regions on a much smaller scale of municipalities with extended competence that do not correspond to any NUTS or LAU level (see Ministry of Regional Development, 2013). In contrast to Poland, regional operational programmes in the 2014-2020 period were absent in the Czech Republic due to issues or regional administrative capacity and previous experience (Baun & Marek, 2017). Their absence might further increase the chance of similar treatment across regions. Horridge & Rokicki (2018) also posited that spatial patterns of ESIF investments in the Czech Republic tend not to favour lagging regions, unlike in Poland. Thus, the results indicate two different approaches to implementing the EU cohesion policy in the analysed countries.

## Conclusion

The cohesion policy of the European Union represents a significant part of its budget and the most extensive interventional policy that targets mitigation of regional disparities across EU regions. While there is little consensus of the efficiency of the policy and links to fostering convergence on the regional level are uncertain, studies have shown its interventions promote at least short-lived positive outcomes in lagging regions (A Rodríguez-Pose & Fratesi, 2004). However, they may not necessarily support convergence processes within countries (Cappelen et al., 2003; Iammarino et al., 2019). Lack of convergence implies the continued existence of variously development regions, some lagging and some more advanced. This paper focused on implementing the cohesion policy in the Czech Republic and Poland within the 2014-2020 period in terms of differences in thematic intervention areas supported across regions in various stages of advancement. Cohesion policy in general supports wide range of interventions across all EU regions, some of which are explicitly linked with improved economic performance. The results showed that among Polish NUTS 2 regions the support differed especially between lagging regions and advanced regions. The lagging Polish regions evidenced higher support of areas concerned with endogenous

development, education across all age groups, social infrastructure, and social inclusion. These activities are pointing towards expanded support for human capital and internal resources of productivity. No such differences were observed in the Czech Republic either at NUTS 2 or NUTS 3 level between the lagging and other regions. The analysis of the Czech regions was run additionally on NUTS 3 level, as the Czech NUTS 3 are more functionally similar to administrative position of Polish NUTS 2 regions. The regions within the Czech Republic, regardless whether NUTS 2 or NUTS 3 were treated similarly regarding the cohesion policy interventions. Reasons for the similarity of treatment across variously developed regions may lie in different strategies in delimitation of regions to target or perhaps in the absence of regionally implemented operational programmes with specifically tailored interventions. These used to exist in the Czech Republic in the previous programming period but were abolished after 2013. Starting in 2014, the Czech Republic applied different measures for ensuring spatial targeting of the cohesion policy, among others Integrated Territorial Investments strategies and Community Led Local Development strategies, evidently with little resulting distinction of thematic support among the regions.

Policy implications arising from these findings suggest on the one hand the need for revision of targeting specific regions in the Czech Republic. On the other hand, the targeted areas in smaller countries may be under the level of NUTS 3. In that case, there is need for publishing data in greater spatial detail so as to enable more precise research on whether selected regions were successfully targeted. This indeed calls for further research in similarly sized, ie smaller, EU countries to find out their success in targeting areas much smaller than the NUTS 2 regions at whose level the eligibility for interventions is decided.

The findings, however, are limited in several ways. Firstly, the data on cohesion policy of 2014-2020 period are as of yet incomplete as the interventions are to end in 2023. Secondly, there were numerous interventions that spanned territory of several NUTS regions. With no precise way to calculate their contributions to individual NUTS regions, they were omitted from the analysis. Nevertheless, the paper has undertaken effort in exploring the difference in treatment of various regions according to their stage of development by interventions from the EU cohesion policy. It expanded on the notion it is not important that regions are supported, it also matters what type of interventions are taken to foster development of regions with view of reducing regional disparities across the EU. The needs of regions in various states of advancement are likely to differ, indeed needs of individual regions are likely to differ producing various response to cohesion policy interventions.

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