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TERRITORIAL IMPACT ASSESSMENT: COHESION POLICY AND BALANCED TERRITORIAL DEVELOPMENT (CZECHIA)

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Abstract

The intent of this paper is to add to the current knowledge in the field of TIA modelling by presenting a case study of cohesion policy (CP) in Czechia, 2007-2013. The empirical results are mixed. While the territorial impact of CP interventions concerning the NSRF objective of a 'Competitive Czech Economy' is higher in main metropolitan regions, CP interventions concerning the NSRF objectives of an 'Open, Flexible and Cohesive Society' and of an 'Attractive Environment' have higher impacts in regions with more desire for CP interventions. Consequently, territorial impacts of the three NSRF objectives are contrary to one another, and the observed pattern of overall territorial impacts of CP interventions is patchy, almost mosaic-like. Additionally, the paper suggests some methodological ideas for TIA modelling drawing inspirations from the prominent TEQUILA model. In particular, the spatial distribution of SF is used to model the intensity of CP interventions in a territory. A methodology how to model the potential territorial impact and the desirability of CP interventions in a territory is also presented.

Keywords: Territorial Impact Assessment (TIA), Cohesion Policy, territorial goals, Czechia

INTRODUCTION

Since its first mention in the Amsterdam Treaty, territorial cohesion has become increasingly significant in EU policy agenda (see, e.g., Davoudi, 2005; Cotella, Adams and Nunes, 2012). Servillo (2010) stressed the importance of linking territorial cohesion to economic development, while Davoudi (2005), Elissalde and Santamaria (2014), Colomb and Santinha (2014), and Faludi (2005) point out the relationship between territorial and social cohesion in the 'European Social Model', noting that nobody should be disadvantaged by their place of residence. However, despite its increasing significance, the concept of territorial cohesion is still somewhat vague because there is a variety of definitions in literature concerning this

topic (see, e.g., Camagni, 2017; Servillo, 2010; Nosek, 2017; Golobič and Marat, 2011; Camagni, 2009).

Historically, the concept of territorial cohesion relates to the EU objective of preventing large territorial disparities (see, e.g., Camagni, 2009; Nosek, 2017; Servillo, 2010). With this line of reasoning, it is expected that policy instruments aim to support lagging regions in order to reduce territorial disparities and to achieve balanced territorial development and 'territorial justice' (see, e.g., Malý and Mulíček, 2016; Colomb and Santinha, 2014; Colomb and Santinha, 2014). As Colomb and Santinha (2014), Camagni (2009) note, special attention is given to some types of territories, e.g., rural areas, declining urban areas, remote territories and others. However, several additional aspects regarding the concept of territorial cohesion deserve special mention:

- Firstly, the concept of territorial cohesion emphasises that public services – or services of general interest – should be provided within reasonable distances of all people. Hence, also people living in peripheral regions are expected to have access to these types of services (see, e.g., Colomb and Santinha, 2014; Cotella, Adams and Nunes, 2012; Servillo, 2010; Faludi, 2005; Colomb and Santinha, 2014).
- Secondly, all territories are considered to have developmental potential, which should be identified, strengthened and exploited. Hence, endogenous development and place-based development are associated with the concept of territorial cohesion (see, e.g., Bentley and Pugalis, 2014; Colomb and Santinha, 2014; Abrahams, 2014). It is worth noting that also territorial competitiveness closely relates to this aspect of territorial cohesion.
- Thirdly, sectoral policies are likely to have significant territorial impacts. The concept of territorial cohesion therefore emphasises the need for coherence between the two types of policies on the basis of integrating the development strategies (see, e.g., Cotella, Adams and Nunes, 2012; Davoudi, 2005; Greiving, Fleischhauer, Tarvainen, Schmidt-Thomé and Jarva, 2008; Faludi, 2005). Note that all thematic dimensions of sustainable development are relevant here (see, e.g., Medeiros, 2012; Nosek, 2017; Colomb and Santinha, 2014).

Different aspects of the concept of territorial cohesion are interlinked, and thus, there is a potential conflict between them. In this regard, the main discussion focusses on the tensions between territorial competitiveness aims and 'territorial justice' aspirations (see, e.g., Luukkonen and Moilanen, 2012; De Propris, 2007; Servillo, 2010). It was these tensions that broadened the concept of territorial cohesion to also include the emphasis on polycentric

territorial development and territorial cooperation (see, e.g., Zaucha, Komornicki, Böhme, Świątek and Żuber, 2014; Davoudi, 2005; Medeiros, 2012). As Malý and Mulíček (2016) claim, polycentric territorial development recognizes the potential for metropolitan areas to generate economic competitiveness. Territorial cooperation and functional links improve 'territorial justice' through developing strong metropolitan areas in peripheral regions (see, e.g., Medeiros, 2012). Hence, polycentric development may be perceived as a bridging concept concerning cohesion and competitiveness (see, e.g., Malý and Mulíček, 2016; Veneri and Burgalassi, 2012).

In light of increasing significance in the concept of territorial cohesion, the interest in territorial impact assessment (hereafter referred to as TIA) has recently grown (see, e.g., Camagni, 2009). TIA is relevant for all policies and instruments that have territorial impacts, and this was used in EU transport policy assessments (see, e.g., Camagni, 2009), and also for Slovenian energy policy (see, e.g., Golobič and Marat, 2011), cohesion policy in Portugal (see, e.g., Medeiros, 2014; Medeiros, 2012), cohesion policy in Spain (see, e.g., Medeiros, 2017), EU environmental legislation (see, e.g., Greiving, Fleischhauer, Tarvainen, Schmidt-Thomé and Jarva, 2008; Fischer et al., 2015), and the Slovenian NATURA 2000 programme (see, e.g., Marat, Kolarič and Golobič, 2013). Nevertheless, despite the increasing number of applications, there is no particular TIA methodology that has been established as conclusively superior to others (see, e.g., Golobič and Marat, 2011; Greiving, Fleischhauer, Tarvainen, Schmidt-Thomé and Jarva, 2008).

Golobič and Marat (2011), and Medeiros (2014) outline three general methodological steps regarding TIA methodology: (a) the definition of the scope and framework of TIA (e.g., source of territorial impacts, territorial units of assessment, time of assessment – ex-ante or ex-post, territorial objectives); (b) identification of causal mechanisms (e.g., policy objectives and influencing factors); and (c) empirical assessment. On this basis, several TIA models were developed and used, including the prominent TEQUILA model (see, e.g., Camagni, 2009; Greiving, Fleischhauer, Tarvainen, Schmidt-Thomé and Jarva, 2008), the TARGET-TIA model (see, e.g., Medeiros, 2014; Medeiros, 2012), and the EATIA model (see, e.g., Fischer et al., 2015). The main characteristics of these models may be briefly outlined as follows (see, e.g., Camagni, 2009; Golobič and Marat, 2011; Medeiros, 2014):

- TIA models relate to the concept of territorial cohesion, and they consider a variety of definitional aspects, which are utilised using relevant and scaled indicators.

- The associations between policy inputs and impacts, the intensity of policy interventions in a territory; and the desirability of policy interventions in a territory are all considered in calculating territorial impacts.
- As indicated by TIA models, other factors may also be taken into account such as territorial vulnerability, substitution effects, sustainability of impacts, and territorial closeness of effects.

The intent of this paper is to add to the current knowledge in the field of TIA modelling by presenting a case study of cohesion policy in Czechia, 2007-2013 (hereafter referred to as CP). The main characteristics of TIA models are regarded for this purpose. Firstly, CP interventions are assessed in terms of them being the source of territorial impacts. The intensity of policy interventions in a territory is determined by the pattern of CP territorial expenditures.

Secondly, the impacts of CP expenditures are defined with reference to the three strategic objectives of the 'National Strategic Reference Framework of the Czech Republic 2007-2013' (hereafter referred to as NSRF): (a) a 'Competitive Czech Economy'; (b) an 'Open, Flexible and Cohesive Society'; and (c) an 'Attractive Environment' (see, e.g., MRD CR, 2007). Thirdly, the desirability of policy interventions in a territory is operationalized and measured using composite indicators that relate to the three NSRF objectives. Fourthly, results are discussed in light of balanced territorial development, which is one of the tenets of territorial cohesion, and these characteristics are used as a guiding framework. Hence, a TIA model based on robust empirical grounds is suggested. In this context, it is noteworthy that a number of authors such as Medeiros (2015), Golobič and Marat (2011) argue that TIA modelling has a lack of 'hard quantitative data' and an over-reliance on subjective-based judgements.

This paper is structured as follows: the second section provides the objectives and methods. The third section presents results, which are then discussed in the following section. The last section provides a conclusion.

OBJECTIVES AND METHODS

The main objective of this paper is to assess territorial impacts of CP interventions using TIA modelling and to discuss results relating to balanced territorial development. The methodology is based on the theoretical framework presented in the introduction. The starting point is the equation inspired by the prominent TEQUILA model (see, e.g., Camagni, 2009):

$$\mathrm{TIM_r} = \sum_o \mathrm{D_{r,o}}\,\mathrm{PIM_{r,o}}\ ,$$

where TIM_r shows territorial impacts of CP interventions on a region r; $PIM_{r,o}$ is potential territorial impact of CP interventions that relate to an objective o on a region r; and $D_{r,o}$ is the desirability of CP interventions that relate to an objective o in a region r. TIM_r, therefore, aggregates territorial impacts for the three NSRF objectives. All calculations are based on 206 Czech regions between level LAU1 and LAU2.

The potential territorial impact $PIM_{r,o}$ is calculated as a product of two components: (1) the general impact of CP interventions on the three NSRF objectives; and (2) the intensity of CP interventions (refer to e.g., Camagni, 2009 for this approach). For this purpose, two matrices are used. The first matrix contains priority axes of thematic and regional operational programmes under the Convergence and Regional Competitiveness and Employment objectives (hereafter referred to as priority axes) in rows, and contains the three NSRF objectives in columns. The general impact of each priority axis on each NSRF objective is determined using the intervention logic described in the NSRF and also by using expert judgements. The impact is rated on a four-point scale (from 0 to 3) ranging from 'no impact – 0' to a 'very strong impact – 3' (see, e.g., Camagni, 2009; Medeiros, 2014 for the use of scales), and using a three-step procedure as follows.

Firstly, the impact of each priority axis on each NSRF objective is evaluated according to three criteria: (1) the first criterion relates to the question whether the impact of a priority axis on a NSRF objective is explicitly mentioned in the NSRF content; (2) the second criterion relates to the question whether priority axis indicators are of relevance to a NSRF objective; (3) the third criterion relates to the question whether the link between priority axis indicators and a NSRF objective may be regarded as a strong link, considering ex-ante expected outcome values. The number of 'yes' responses determines the impact of each priority axis on each NSRF objective on a four-point scale. Secondly, five experts independently explore the impacts of each priority axis on each NSRF objective as these were rated in the first step of the procedure. On this basis, suggestions for change are gathered and these are discussed in the third step of the procedure and eventually made.

The second matrix contains regions in rows and the priority axes in columns. Structural fund (hereafter referred to as SF) allocation per one inhabitant – the intensity of CP interventions – is assigned to each priority axis and each region, and the values are transformed to fall within a range of zero to one. Here, zero is no SF allocation and one is the highest SF allocation among all the regions. The fact that particular priority axes have different weights is considered by multiplying the transformed values in the matrix by the

share of the total SF allocation for corresponding priority axes. The main sources of information as of June 2016 are from the official data published by the Ministry of Regional Development of the Czech Republic (hereafter referred to as the MRDCR), by the Ministry of Industry and Trade of the Czech Republic (hereafter referred to as the MITCR), and also by the Ministry of Labour and Social Affairs of the Czech Republic (hereafter referred to as the MLSACR). Hence, the potential territorial impact $PIM_{r,o}$ expresses the impact of CP interventions in a region r with respect to an objective o.

The desirability of CP intervention that relates to an objective o in a region r is calculated on the basis of composite indicators that date from the beginning of the programming period 2007-2013. For each of the three NSRF objectives, Tab. 1 reviews individual indicators that are aggregated to a composite indicator as the mean of their z-transformed values. Moreover, all individual indicators are expressed in such a way that higher values imply higher desirability of CP interventions. Finally, the values of the three composite indicators are transformed to fall in a range between one and two, where one is the lowest desirability and while two is the highest desirability of CP interventions (see, e.g., Camagni, 2009 for a similar approach). The total desirability of CP interventions is calculated as the mean of the three composite indicators.

The above-mentioned methodology is applied to separately calculate TIM_r for each of the NSRF objectives, and also for all the objectives together. Two approaches are then used to assess the relationship between CP interventions and balanced territorial development, hypothesizing that CP interventions contribute to balanced territorial development. Firstly, regions are divided into quartiles according to the composite indicators for desirability of CP interventions. The average TIM_r values are calculated for each of the quartiles. To meet the goal of contributing to balanced territorial development, it is assumed that the average TIM_r values of the first and second quartiles are relatively high, while the average TIM_r values of the third and fourth quartiles are relatively low. The significance of mean differences is tested by the analysis of one-way variance (ANOVA). The same rationale is applied to the second approach that is based on the correlations between the $PIM_{r,o}$ and $D_{r,o}$ values. A negative and significant sign of the correlation coefficients accords with balanced territorial development.

Table 1 Overview of individual indicators

NSRF objective	Individual indicator (year)	Source
Competitive Czech Economy	The number of patent applications and utility models per 100.000 inhabitants (2002-2007)	IPOCR
	The share of researchers and professionals in the economically active population (mean of 2001 and 2011)	CSO
	The share of unemployed people in the population aged 15-64 years (2005-2007)	CSO
	Tourism potential, log-transformed (2005)	CSO
Open, Flexible and Cohesive Society	The share of unemployed people in the population aged 15-64 years (2005-2007)	CSO
	The share of people receiving living allowances in the population aged 15-64 years (2007-2008)	GAC
	The share of households with internet access in the total number of households (mean of 2001 and 2011)	CSO
Attractive Environment	The emission values of nineteen air pollutants per square kilometre (2007)	CHMI
	The ratio between environmentally stable and environmentally unstable land-use categories (2007)	CSO
	The share of population with access to sewerage infrastructure (mean of the years 2001 and 2011)	CSO
	Composite indicator (2009) showing relative total waste production, household waste production and waste dumping	MoECR
	The (external) accessibility of the core regional city (2005) – individual transport	CSO
	The (internal) accessibility of the core regional city within the region (2005) – individual transport	CSO

Source: CHMI – Czech Hydrometeorological Institute; CSO – Czech Statistical Office; GAC – the Map of Socially Excluded Communities; IPOCR – Industrial Property Office of the Czech Republic; MoECR – Ministry of Environment of the Czech Republic

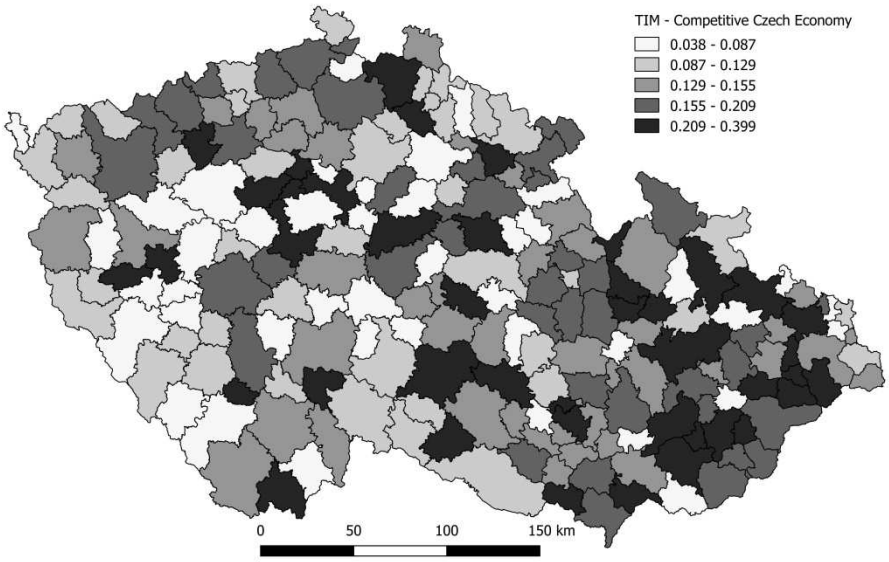
RESULTS

Empirical results are first presented using choropleth maps to visualize how TIM_r values vary across regions. In this regard, four maps are displayed in figures 1 to 4. The first three maps show the TIM_r values for the three NSRF objectives separately, while the last figure shows the aggregate TIM_r values. The maps provide initial insights regarding the spatial variation of TIM_r values.

Concerning the objective of a 'Competitive Czech Economy' (fig. 1), an uneven spatial distribution of TIM_r values is demonstrated. However, spatial hierarchy appears to play a role in this distribution, indicating that the main metropolitan areas have higher TIM_r values.

Prague is a notable exception to this rule due to its ineligibility to receive funds under the generous Convergence objective. However, Prague's low value here is at least partially compensated by high values for regions in close proximity to Prague. Additionally, there is a tendency in the eastern regions to have higher TIM_r values than those in the western regions.

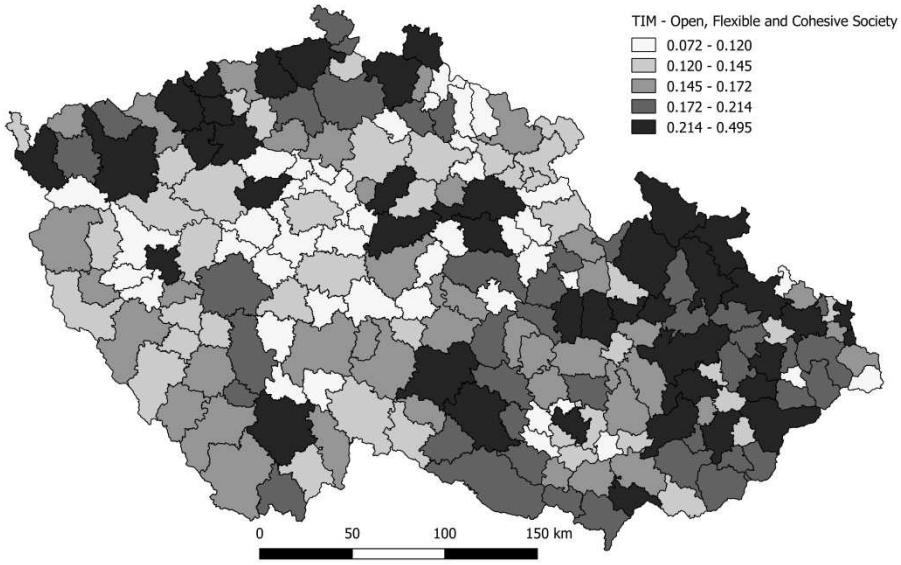
Figure 1 TIM_r for the NSRF objective of a 'Competitive Czech Economy'



Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, and the MRDCR

Concerning the objective of an 'Open, Flexible and Cohesive Society' (fig. 2), spatial clusters of regions with high TIM_r values are found in north-western Bohemia and north-eastern Moravia. A number of these areas are referred to as structurally disadvantaged regions that suffer from economic decline, industrial downsizing and adverse social conditions. Similarly to fig. 1, it is also noticed that there is a tendency that the eastern regions have higher TIM_r values than western regions, see fig. 2.

Figure 2 TIM_r for the NSRF objective of an 'Open, Flexible and Cohesive Society'

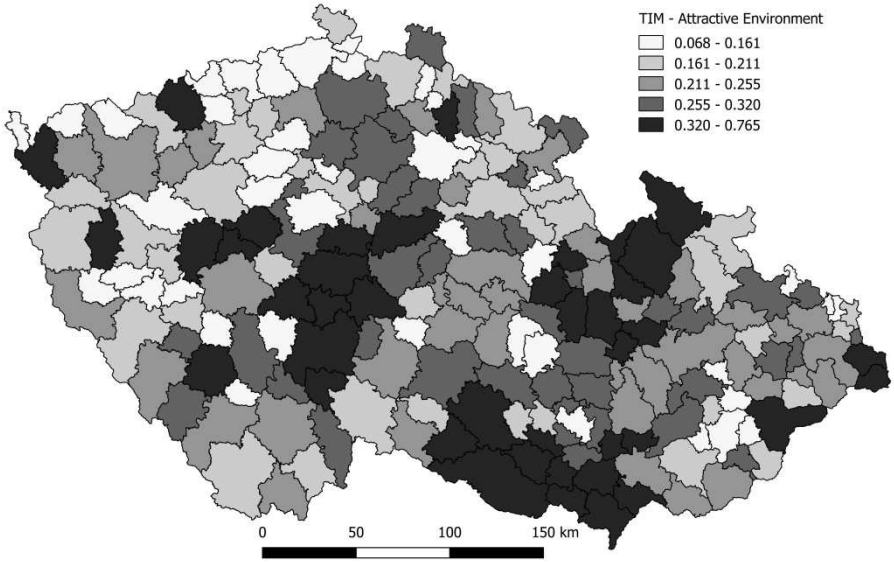


Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, and the MRDCR

Fig. 3 suggests the highest level of spatial clustering of regions with similar TIM_r values for the objective of an 'Attractive Environment', as also indicated by Moran's I statistic (i.e., 0.067 for the objective of a 'Competitive Czech Economy'; 0.071 for the objective of an 'Open, Flexible and Cohesive Society'; and 0.239 for the objective of an 'Attractive Environment'). Three spatial regional clusters with high values may be identified in central Bohemia, southern Moravia and north-eastern Moravia. In this regard, the line character of large transport projects is important to explain the spatial concentration of high TIM_r values for the objective of an 'Attractive Environment'.

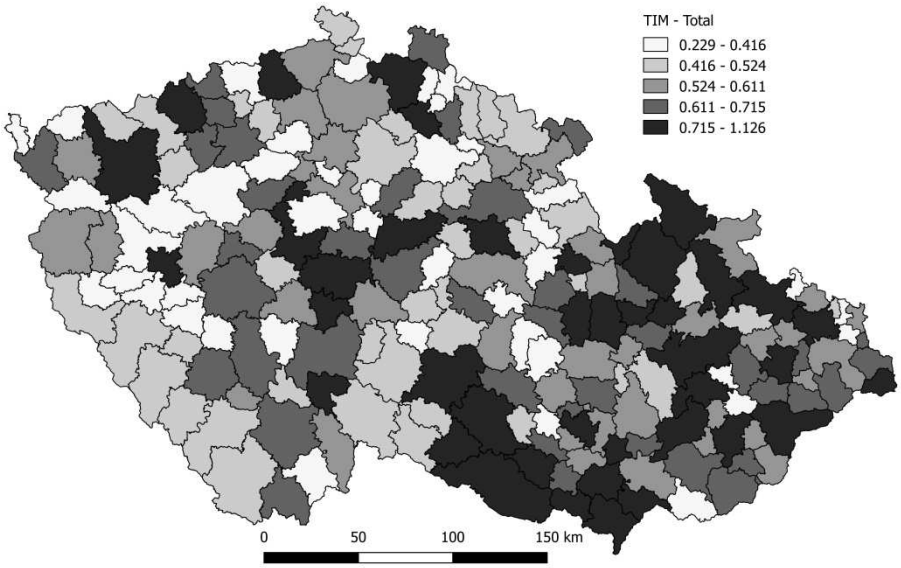
Altogether, a mosaic spatial pattern of aggregate TIM_r values is formed due to the different territorial impacts of interventions relating to the three NSRF objectives (see fig. 4). This is also confirmed by insignificant Moran's I statistics (0.080) at the 1% level. The question is thus about what information is contained of the balanced territorial development in TIM_r values. It seems that different types of regions are favored when considering the objective of a 'Competitive Czech Economy' on the one hand and the objective of an 'Open, Flexible and Cohesive Society' on the other hand. Therefore, this particular question is dealt with in the remaining part of this section.

Figure 3 *TIM_r* for the NSRF objective of an 'Attractive Environment'



Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, the MRDCR

Figure 4 *TIM_r* for all the NSRF objectives together



Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, and the MRDCR

Tab. 2 provides the arithmetic means of *TIM_r* for the regions classified into quartiles according to the composite indicators for the desirability of CP interventions. In this regard, the 4th quartile includes the regions where CP interventions are most needed. The opposite is true for the regions classified into the 1st quartile. The most important findings can be summarized as follows:

- Concerning the objective of a 'Competitive Czech Economy', ANOVA indicates the high arithmetic mean of TIM_r for the 1st quartile of regions as the only significant difference compared to the arithmetic mean of the 2nd quartile of regions. Nonetheless, the mean differences between the 1st quartile of regions on the one hand, and the 3rd and 4th quartiles of regions on the other hand, are not statistically significant.
- Concerning the objective of an 'Open, Flexible and Cohesive Society', ANOVA indicates the high arithmetic mean of TIM_r for the 4th quartile of regions as the only significant difference between the four quartiles of regions. The significance holds for all the pairs of comparisons that include the 4th quartile of regions.
- Concerning the objective of an 'Attractive Environment', the significant differences reported by ANOVA include the following pairs of quartiles: (a) 1 and 4; (b) 2 and 4; and (c) 1 and 3. Hence, territorial impacts seem to reflect the desirability gradient for the objective of an 'Attractive Environment'.

Altogether, a complex picture arises because the CP interventions relating to the three NSRF objectives work contrary to one another. This can also be seen in the lack of statistical significance in all the pair-wise comparisons for the three NSRF objectives together (see tab. 2; the last column).

Table 2 The arithmetic means of TIM_r

Regions	Competitive Czech Economy	Open, Flexible and Cohesive Society	Attractive Environment	All objectives together
1st quartile	0.175	0.163	0.193	0.583
2nd quartile	0.135	0.160	0.230	0.537
3rd quartile	0.150	0.168	0.278	0.590
4th quartile	0.146	0.214	0.304	0.579

Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, and the MRDCR

The correlation coefficients between the $PIM_{r,o}$ and $D_{r,o}$ values confirm the relevance of the above-mentioned findings (see tab. 3). Hence, the potential territorial impact of CP interventions is inversely and significantly associated with the desirability of CP interventions for the objective of a 'Competitive Czech Economy', while directly and significantly associated with the remaining two NSRF objectives. The significance is lost in aggregate evaluation.

Table 3 The correlation coefficients between the $PIM_{r,o}$ and $D_{r,o}$ values

	Competitive Czech Economy	**Open, Flexible and Cohesive Society**	**Attractive Environment**	**All objectives together**
Correlation coefficients	-0.213**	0.156*	0.240**	-0.079

** statistically significant at the 0.01 significance level; * statistically significant at the 0.05 significance level
Source: own elaboration based on the data from the CHMI, the CSO, the GAC, the IPOCR, the MILSACR, the MITCR, the MoECR, and the MRDCR

DISCUSSION

The empirical results presented in the preceding section can be embedded in a broader theoretical context. Firstly, a number of studies have emphasized the influence of spatial factors on regional inequalities in post-communist countries (see, e.g., Ezcurra, Pascual and Rapún, 2007; Maier and Franke, 2015; Czyz and Hauke, 2011; Krzysztofik, Tkocz, Spórna , & Kantor-Pietraga, 2016; Martinát et al., 2016; Ženka, Novotný, Slach and Květoň, 2015; Marková and Švihlíková, 2016; Skokanová, Havlíček, Klusáček, & Martinát, 2017; Navratil et al., 2018). Three factors are usually expected to be significant in this respect: (a) spatial hierarchy and the advantages of location in the main metropolitan regions; (b) the eastern-western gradient and the advantages of location close to the borders of western countries; and (c) the inherited spatial specialization and the structural disadvantages of particularly old industrial regions. The importance of these factors was also demonstrated in the TIA models constructed, i.e., the importance of spatial hierarchy for the objective of a 'Competitive Czech Economy', the importance of inherited spatial specialization for the objective of an 'Open, Flexible and Cohesive Society', and the importance of the eastern-western gradient for all the NSRF objectives. Generally, the influence of the three spatial factors needs to be considered in planning territorial impacts for CP interventions.

Secondly, the empirical findings are relevant for the debate about the relationship between two spatial objectives – territorial competitiveness and territorial balanced development (see, e.g., Vanolo, 2010; Colomb and Santinha, 2014). The constructed TIA models suggest that CP interventions work in either direction, depending on their thematic orientation (see, e.g., Klímová and Žítek, 2015; Hájek and Górska-Szymczak, 2017; Kaufmann and Wagner, 2005; Severová, Chromý, Sekerka and Soukup, 2012 for relatively low impact innovation-oriented interventions in lagging regions). Therefore, the combined effects of CP interventions can undermine their overall contribution to balanced territorial development (see also Novosák,

Hájek, Horváth and Nekolová, 2017 for this conclusion). The weight given to particular types of CP interventions and their links to the two spatial objectives are crucial for evaluating which of the objectives prevail.

Thirdly, the TIA models constructed extend the methodology of TIA modelling in some directions. This is the primary way of treating the potential territorial impact of CP interventions (PIM_r), which are operationalized using 'hard data' relating to the spatial distribution of CP interventions. Moreover, NSRF is taken as the main source for the gauging general impacts of CP interventions on the three NSRF objectives, and also the weights of objectives are set in a way that differs from previous studies and it relies more on 'hard data'. Generally, the constructed TIA models are less subjective in nature, thereby we can at least partially remove one of the drawbacks of TIA methodologies (see, e.g., Golobič and Marat, 2011; Medeiros, 2015 for the problem of subjectivity in TIA modelling).

CONCLUSION

The intent of this paper is to add to the current knowledge in the field of TIA modelling by presenting a case study of cohesion policy in Czechia (2007-2013). The findings point out the need to address the complex nature of territorial impact of CP interventions. The territorial impact of CP interventions relating to the NSRF objective of a 'Competitive Czech Economy' is greater in the main metropolitan regions, but CP interventions relating to the NSRF objectives of an 'Open, Flexible and Cohesive Society' and of an 'Attractive Environment' have greater territorial impacts in regions with higher desirability for interventions. Consequently, there is a mosaic pattern of overall territorial impacts of CP interventions, with different conclusions regarding their contributions to balanced territorial development, and the hypothesis that CP interventions contribute to balanced territorial development cannot be conclusively accepted.

There are several political implications that can be drawn from this research. Firstly, the overall assessment of territorial impacts of CP interventions masks the complexities that arise from their thematic decomposition. Therefore, it is desirable to deal precisely with the thematic dimension of both CP interventions and TIA modelling. Secondly, it is important to define the relationship between the two spatial objectives of CP interventions: (a) territorial competitiveness; and (b) balanced territorial development. A particular question exists about whether the desirability of CP interventions relating to the competitiveness objective is greater in the main metropolitan regions or whether it is greater in lagging regions. Thirdly,

implementing the ideas introduced in this paper can bring fruitful results in 'less subjective' TIA modelling.

In our opinion, the results of this study can be helpful in order to provide methodological guidance for practitioners. In particular, the methodology is useful for both ex-ante policy analyses and ex-post policy analyses of territorial impacts. While the former analyses provide information about the most suitable course of action, the latter analyses indicate whether the actual choice was the most suitable. However, there are some limitations of using the methodology and two of them are worth mentioning. Firstly, the matrix of general impacts of CP interventions on the NSFR objectives can be improved by calibrating the impacts against achieved outcome indicator values. Secondly, an outflow of SF to other regions (e.g., through public procurements) ought to be considered in order to enhance our understanding of the phenomenon.

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