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Regional Development and the Quality of Democracy in V4 Countries

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Abstract This chapter conducts a cross-sectional examination of regional development in the Visegrad Four countries (Czechia, Poland, Hungary, and Slovakia) to identify any associations between regional development (understood as socioeconomic development and measured by the size of regional GDP) and selected indicators of quality of democracy. First, we systematically mapped the long-term patterns of GDP in V4 countries between 2000 and 2021. Second, we focused on differences in regional GDP and transformations of its patterns in time and space. Third, we analysed the associations between regional GDP and three dimensions of quality of democracy: (1) participation (regional turnout and number of NGOs in individual regions), (2) representation (women's seats in regional legislatures), and (3) competition (effective number of parties and index of balance in regional legislatures).

Keywords: • regional development • quality of democracy • political participation • women's representation • competition • Visegrad Four

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1   Introduction

Success in the process of establishing a stable democratic regime is traditionally associated with several prerequisites (see, e.g., Teorell, 2010), including the level of socioeconomic development, as stated by several authors in accordance with arguments of modernisation theory (Lipset, 1959; Huntington, 1973). However, for example, Teorell shows that socioeconomic modernisation serves more as an obstacle preventing the return of an authoritarian regime than a definite impulse towards democratisation (see Teorell, 2010: 141–151). Among other authors, Przeworski and Limongi (1997) question a direct relationship between the level of socioeconomic development; the modernisation thesis is defended by Geddes (1999: 118–119), although she also acknowledges that there is no clear causal mechanism behind this relationship; furthermore, Boix and Stokes (2003: 535–537) argue that the probability of a transition to democracy doubles if the purchasing power parity of GDP per person increases from USD 1,000 to USD 12,000. In contrast, Doucouliagos and Ulubaşoğlu (2008) show that while democracy does not have a direct impact on economic growth, it has positive indirect effects through higher human capital, lower inflation, lower political instability, and higher levels of economic freedom and, similarly, Rothstein (2017) suggests that democracy is important for broad-based political legitimacy but does not seem to generate human well-being or be a reliable tool for fighting corruption. Finally, considering regional context, ambiguous results are presented by Krieckhaus (2006), who shows that democratic governance constrains growth in Latin America and Asia yet facilitates growth in Africa.

As for subnational levels of government, there has been a resurgence of research interest in regions and uneven regional development, regional studies have come to be of central concern, and the various aspects of regions and their development have become a focal point of social scientific discourse and political debates (Hudson, 2007). In this context, many authors suggested that to understand regional (and even local) development better, its definition should be broadened to include economic, social, environmental, political and cultural processes, as well as the effect of geography, because specific places may shape the geographical diversity, unevenness, and context of local and regional development (Pike et al., 2007). Other authors also highlight the role of human agency when investigating why some regions or cities develop better or worse than others (Sotarauta & Grillitsch, 2023) or demand, including so-called 'bottom-up' approaches to emphasise issues such as living conditions, distribution and equity, or health and well-being, for example, food quality or quality of life (Hadjimichalis & Hudson, 2007; Pike et al., 2007).

Although we recognise the need for a broader definition of regional development and the possible role of various factors, we are limited by the scope of this chapter and thus apply the traditional definition of regional development in terms of gross domestic product (GDP). At the same time, we take into account the effect of geography and uneven regional development in the context of multi-level governance, assuming that, in the context of multi-level governance, regional governments can influence the form of

regional disparities to some extent (Allen & Cochrane, 2007). At the same time, the development of socioeconomic systems is largely inertial, and it is usually only after a certain period that changes in their functioning, including the functioning of regional governments, are reflected in transformations of regional disparities or individual indicators of socioeconomic development (Kostelecký & Patočková, 2006: 917).

In the Czech case, differences in regional governments' performance structure made it possible to divide Czech regions into several groups (see Illner et al., 2007). This does not fully apply to the mutual connections between regional government performance and economic development or between regional government performance and the level of social capital. However, human capital (level of education) strongly affects regional economic growth, social capital, and government performance (see Kostelecký et al., 2007).

The main aim of this chapter is thus to show whether there is an association between regional development in the Visegrad Four (V4) countries (Czechia, Poland, Hungary, Slovakia), which we understand as regional economic development (measured by the size of regional GDP), and selected indicators of quality of democracy. Here, we follow an approach applied in most studies of democratic quality (e.g., Altman & Pérez-Liñán, 2002; Diamond & Morlino, 2004; Levine & Molina, 2011; Bühlmann et al., 2012; Gwiazda, 2016) and use Dahl's (1971) procedural definition of democracy, which emphasises that the quality of democracy depends on the role of institutions and their mutual relations. More specifically, we focus on some indicators of Dahl's (1971) two theoretical constitutive dimensions of democracy – participation and competition – and understand high-quality democracy as defined by a combination of high levels of both participation and competition. In accordance with the theoretical framework anchored in the procedural concept of democracy, the analysis focuses especially on the role of institutions and inter-institutional relations. In this respect, we adopt the perspective of new institutionalism (March & Olsen, 1989; North, 1990; Powell & DiMaggio, 1991), which is based on two assumptions: (1) 'institutions matter' because they affect norms, and beliefs, actions and, in turn, outputs; and (2) 'institutions are endogenous', thus their form of functioning depends on the conditions under which they were created, and which perpetuate them (Przeworski, 2004). New institutionalism considers different institutional settings as the cause of different political outcomes (March & Olsen, 1984) and the continuity of social institutions as a factor connecting past and present. Therefore, understanding institutions' current form and performance requires an analysis of the development of institutions over a longer time horizon (North, 1990: vii).

## 2 Patterns of regional development in V4 countries

After their transition to democracy at the turn of the 1980s and 1990s, Central and Eastern European (CEE) countries faced a necessity of both a political and a socioeconomic transformation associated with the integration of former centrally planned economies in global markets, later accompanied by integration with the European Union (EU). This

development was connected with the establishment of regional self-government in most CEE countries (except Estonia, Latvia, Lithuania, or Slovenia). Although often endowed with weaker political authority than regions in Western European countries (see Heinelt & Bertrana, 2011; Hooghe et al., 2016), regional governments in CEE were responsible for the administration of EU regional funds under the EU Cohesion Policy aimed at lowering regional disparities across Europe. More importantly, while the effects of the EU Cohesion Policy on regional development of CEE regions were generally positive, they differed across individual regions (see Dyba et al., 2018).

Most previous studies (e.g., Dyba et al., 2018) analysed regional development at the level of NUTS 2 regions, at which most CEE countries (except Poland) do not have corresponding elected governments; Czechia, Hungary and Slovakia have those at the NUTS 3 level. For that reason, we first investigate historical patterns of socioeconomic development, or regional wealth, measured by regional gross domestic product (GDP) at current market prices for NUTS 3 regions (Czechia, Hungary, Slovakia) and NUTS 2 regions (Poland), namely at purchasing power standard (PPS) per inhabitant, in some cases as a percentage of EU-27 average.

When examining the changes in economic growth that took place between 2000 and 2021, we can see that regional GDP per capita in PPS increased nominally in all V4 countries, with only minor decreases in 2009 and 2010 as a result of the Global Financial Crisis and in 2019 due to the COVID-19 pandemic crisis (Figure 1). Furthermore, while regional wealth at the level of EU-27 increased less than twofold in the monitored period (exactly 1.76 times, from EUR 18,400 to EUR 32,400), regional GDP in all V4 countries more than doubled or even tripled in Poland.[1] However, while the GDP level in Czechia (the highest of the V4 countries) consistently approached the EU-27 level (their difference decreased from EUR 4,900 to EUR 2,700 between 2000 and 2021), this difference remained almost the same in Hungary (EUR 8,600 compared to EUR 8,100), and it even somewhat rose in Slovakia (from EUR 9,000 to EUR 9,900). Thus, the largest GDP increase was achieved by Poland, which not only significantly reduced the distance between its GDP and the EU-27 average (from EUR 9,500 to EUR 7,400) but also came from the last place within the V4 right behind Czechia. In contrast, Slovakia first somewhat approximated Czechia, but after 2018, it fell to the last place among the V4 countries.

Figure 1:   GDP per capita in PPS in the V4 countries and in the EU-27, 2000–2021 (euros)
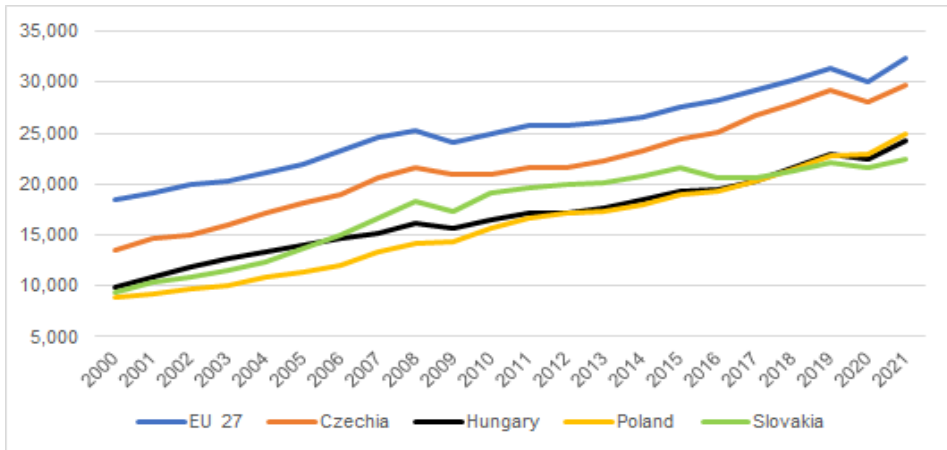
Source: Eurostat (2023).

In contrast to a general rise of nominal GDP in all V4 countries, the trend regarding the percentage of the EU-27 average is unclear (Figure 2). In the case of Czechia, we can see that after the country's GDP approached the level of 90% of the EU-27 average (approximately in 2014), the further growth almost stopped. Slovakia exhibited a considerable fall (from 2020): it began to approach 80% of the EU-27 average in 2010, almost reached it in 2015 (with 79% exactly), and subsequently fell dramatically (to 69% exactly). The two remaining V4 countries also went through different trajectories. Hungary saw a milder, although consistently positive rise in GDP from 53% of the EU-27 average in 2000 to 75% in 2021, whereas Poland, with its worst baseline level of only 48% of the EU-27 average in 2000, approached the 80% threshold in 2021 (77% exactly). There is a high contrast between the pathways of Poland and Slovakia: in 2000, both countries had very the same levels of GDP compared to the EU-27 average (with a difference of only 3 p.p. in favour of Slovakia); between 2006 and 2015, this difference rose to more than 10 p.p. (with a peak of 17 p.p. in 2008); in 2018, Poland surpassed Slovakia; and in 2020, the GDP of Poland reached 77% of the EU-27 average, 8 p.p. higher than Slovakia's.

Figure 2:   GDP per capita in PPS in the V4 countries as a percentage of EU-27 average, 2000–2021
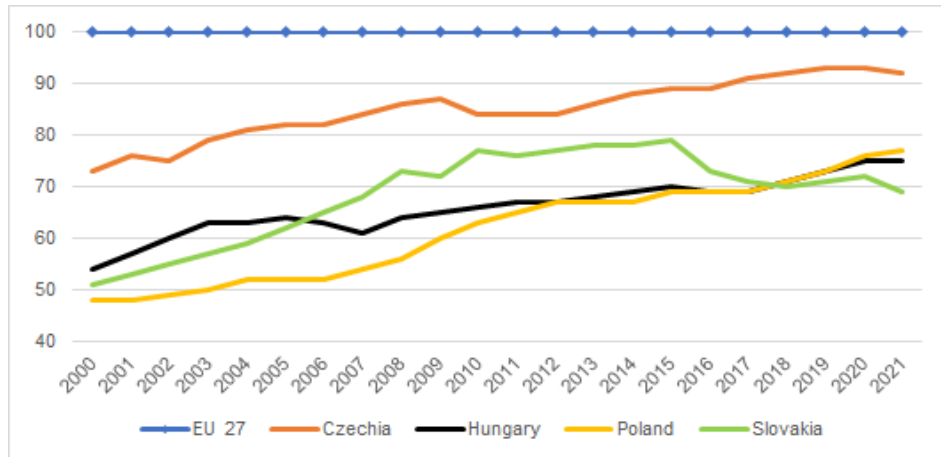
Source: Eurostat (2023).

As mentioned in the introductory part of the chapter, our main concern is to analyse regional development. Interregional variability can be documented, for instance, by values of the coefficient of variation (CV), which is commonly used to measure territorial differences.[2] The data (CV values) for regional GDP for individual V4 regions shows significant differences in regional wealth between individual V4 countries (as shown above) and regions within one country. As seen in Table 1, the degree of regional GDP significantly varies and based on CV values, it is possible to divide V4 countries into approximately three groups. Poland exhibits relatively smallest interregional variability, with a mean CV slightly above the 20% threshold (23.17%). In contrast, in Czechia and Hungary, the variability of the regional GDP is almost double (38.79% and 40.45%, respectively), and the largest differences in regional wealth are characteristic of Slovakia, where the mean CV exceeds the 50% threshold (51.47%).

**Table 1:**   Aggregate levels of regional GDP per capita in PPS in the V4 countries and in the EU-27, 2000–2021 (coefficients of variation)

	Lowest	Highest	Mean
Slovakia	44.81	56.35	51.47
Hungary	34.97	45.53	40.45
Czechia	30.29	41.51	38.79
Poland	20.46	25.59	23.17

Source: Eurostat (2023), author's calculations.

Additional detail is provided by data on the development of the interregional variability of GDP in time (Figure 3). Again, there are various trajectories in individual countries. First, Poland saw relatively stable variability of regional GDP, with only the years 2009 and 2010 dividing the monitored period into two phases, one with slightly lower (approximately 21%) and the other with slightly higher levels of variability (approximately 25%). Czechia and Hungary show different trajectories. An initial increase of approximately 10 p.p. up to approximately 40% in Czechia and 45% in Hungary was followed by a decline in Hungary, then the CV in both countries stabilised at the level of 40%. Finally, the most variability can be observed in Slovakia, where not only are the overall interregional differences the highest, but this variability also considerably changes over time.

Figure 3: Regional GDP per capita in PPS in the V4 countries, 2000–2021 (coefficients of variation)
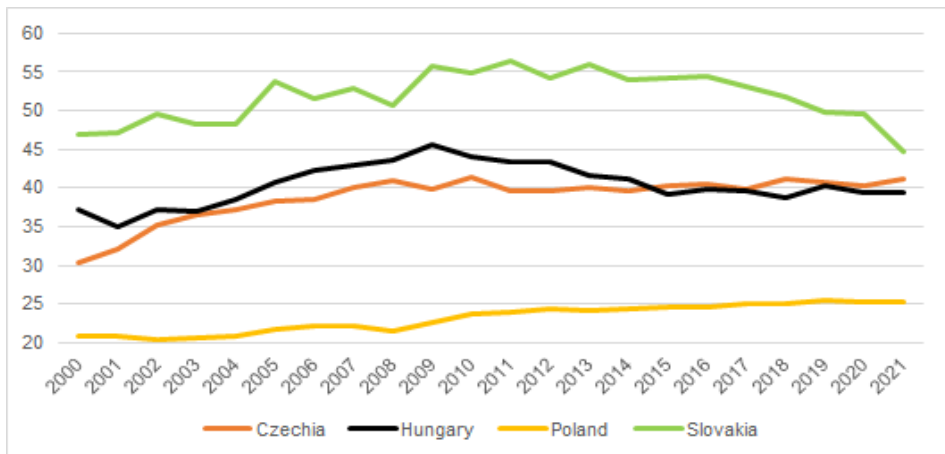
Source: Eurostat (2023).

The final step in our description of patterns of regional development in V4 countries lies in focus on regional wealth differences between individual regions. Here, one important finding is that it is not necessary to account for all years, but a sufficient solution is to consider, for instance, the beginning and the end of the monitored period. This is possible because although there was a significant increase in regional development during the observed period, that increase was constant across all regions. Thus, although the individual V4 regions differ significantly in the size of their regional GDP, their differences remain very similar over time; low-GDP regions did not move into the high-GDP category or vice versa. The above conclusion is confirmed by the values of the correlation coefficients between successive years; the Pearson correlation coefficient was used. Here, all cases (at the level of individual V4 countries and the level of the whole V4) exhibit almost perfect correlations (higher than 0.9) between the values of regional
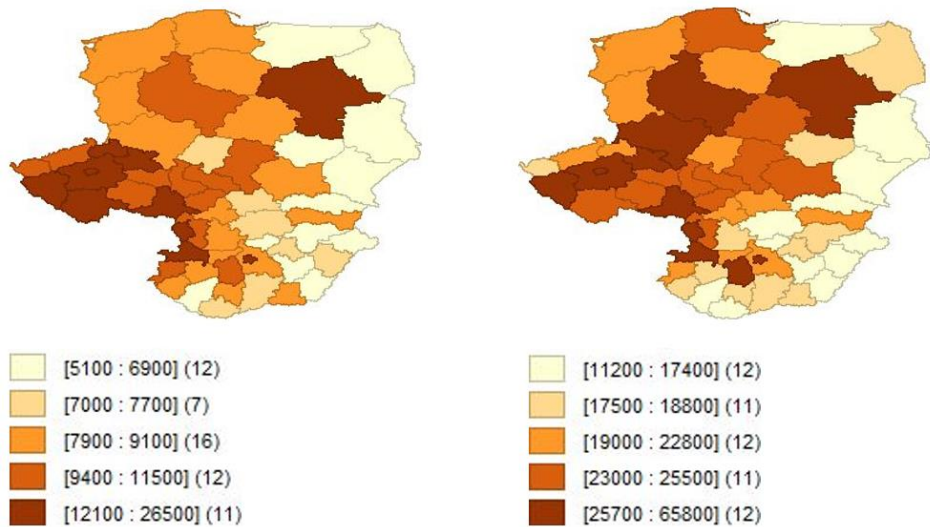
GDP for consecutive years throughout the 2000–2021 period.[3] More importantly, almost all correlation coefficients between more distant years were higher than 0.9 (with some minor exceptions in Hungary and at the V4 level, but even those had coefficients of at least 0.877 in Hungary or 0.862 at the V4 level).

The above figures suggest a very strong stability of regional GDP in individual regions over time, which is also supported by spatial analysis (Figure 4). A comparison of maps showing regional GDP levels in individual V4 countries shows that despite overall GDP growth in all regions, the situation in individual regions did not change significantly, with one exception. This is associated with the gradual economic rise of Poland and how it is reflected in some Polish regions, especially compared to the relative decline of some Czech regions.

In the year 2000, the wealthiest regions were concentrated almost exclusively in Czechia (or Bohemia, more precisely) or around capital cities (Budapest in Hungary, the Bratislava Region in Slovakia plus the adjacent Győr-Moson-Sopron Region in Hungary, or the Masovia Region in Poland). The Czech regions with the highest regional GDP covered a contiguous territory in southern, western, central, and north-eastern Bohemia (the regions of South Bohemia, Plzeň, Central Bohemia, Prague, Liberec, and Hradec Králové) plus only one Moravian region: South Moravia, with the country's second biggest city of Brno. More importantly, none of the remaining Czech regions (including the three structurally disadvantaged regions of Karlovy Vary, Ústí and Labem, and Moravia-Silesia) ranked worse than in the second-highest quintile.

In contrast, only a limited number of regions in other V4 countries ranked in the second highest quintile: Greater Poland and Silesia in Poland, Trnava in Slovakia, or Vas and Fejer in Hungary. As for the least developed regions, there was a clearly visible pattern: they were found in eastern parts of Poland, Hungary, and Slovakia (with the exception of the Košice Region, with the second biggest Slovak city). In contrast, most Polish regions in central or western parts of the country ranked in the group with the highest average regional GDP.

Figure 4:   Regional GDP per capita in PPS in the V4 countries, 2000–2021 (quintiles)

Legend (left map):
- [5100 : 6900] (12)
- [7000 : 7700] (7)
- [7900 : 9100] (16)
- [9400 : 11500] (12)
- [12100 : 26500] (11)

Legend (right map):
- [11200 : 17400] (12)
- [17500 : 18800] (11)
- [19000 : 22800] (12)
- [23000 : 25500] (11)
- [25700 : 65800] (12)

Source: Eurostat (2023).

The most striking differences can be observed in Czechia and Poland when comparing current situations. Not only did the number of regions with regional GDP in the highest quintile decrease in Czechia but, more importantly, a part of north-western and north-eastern Bohemian regions moved to the average category (Ústí nad Labem and Liberec) or even to the second worst quintile (Karlovy Vary). Of these, Liberec and Karlovy Vary dropped by two categories. Furthermore, South Bohemia moved from the first to the second highest quintile. In contrast, the number of less developed regions in Poland decreased from five to three in 2021 (Lublin and Subcarpathia in the east and the northern Warmia-Masuria). Furthermore, the wealthiest category expanded from one region in 2000 (Masovia) to three in 2021 (Masovia and the western regions of Lower Silesia and Greater Poland). Overall, whereas a total of 6 out of 16 Polish regions (37.5%) ranked in the two lowest quintiles and only three regions (18.75) in the two highest quintiles in the year 2000, the situation partly reversed in 2021, when five regions (31.3%) remained in the two lowest quintiles, and the two highest quintiles expanded from three to seven regions (43.8%). In contrast, the number of Czech regions in the two highest quintiles decreased from 16 (100%) to 13 (81.3%).

The two remaining V4 countries saw only minor transformations of spatial patterns of regional GDP. In Slovakia, only Bratislava and Trnava remained the first and second highest quintiles (25%), and the two lowest quintiles combined shrank to three regions (37.5%). In contrast, in Hungary, Fejer joined Budapest and Győr-Moson-Sopron in the highest regional GDP category, while some of the southern regions dropped to the second lowest quintile (Csongrád-Csanád, Tolna, Veszprém, and Zala). As a result, the share of

Hungarian regions ranking in the two lowest quintiles rose from 10 (50%) to 14 regions (70%) between 2000 and 2021.

3   Regional development and quality of democracy

In the final part of this chapter, our concern will focus on whether regional development in V4 regions is influenced by any indicators of the quality of democracy. As we follow the proceduralist definition of democracy, we concentrate on factors associated with the role of institutions and examined in previous studies on the quality of democracy, both at the national and the regional level (see, e.g., Altman & Pérez-Liñán, 2002; Diamond & Morlino, 2004; Levine & Molina, 2011; Bühlmann et al., 2012; Lijphart, 2012; Giraudy, 2013; Gwiazda, 2016; Munck, 2016; Harbers et al., 2019; Maškarinec, 2023). These cover the following dimensions: (1) participation, which is closely associated with political equality; (2) competition as Dahl's (1971) second theoretical constitutive dimension of democracy (the first dimension of democracy is participation); and (3) women's political representation in terms of similarity between the composition of political decision-making bodies (representatives) and the composition of society (the represented).

We use the following indicators of the three dimensions to compare their effect on regional development (regional GDP). Participation will be measured by both the so-called effective participation (Altman & Pérez-Liñán, 2002), coded as turnout in elections to regional legislatures (logged), and non-electoral participation, coded as membership in civil society organisations as the number of non-governmental organisations (NGOs) per 1,000 inhabitants (logged). Competition, then, will be measured by two indicators. First, we use Laakso and Taagepera's (1979) *effective number of parliamentary parties* (*ENPP*) to measure regional legislature fragmentation, or concentration in the distribution of seats across parties, in each region.[4] Second, we use Taagepera's (2005) *index of balance* (*b*) to supplement the *ENPP* by indicating how unbalanced the actual distribution of party sizes is.[5] Taagepera (2005: 290) emphasised that while *ENPP* measures the central tendency of party constellations, *b* adds a measure of spread around the central tendency, and using both indicators describes the party constellation more thoroughly.

As in the previous section, we use data on regional GDP for NUTS 3 regions (Czechia, Hungary, Slovakia) and NUTS 2 regions (Poland). For the independent variables, we use data on elections to regional legislatures since the establishment of self-governing regions in V4 countries. Our sample includes data for six regional elections to 16 Polish regional legislatures (*sejmik wojewódzki*; NUTS 2 level) between 1998–2018, 13 Czech regional legislatures (*zastupitelstvo kraje*; NUTS 3) and the Prague City Assembly (*Zastupitelstvo hlavního města* Prahy; NUTS 2/3) between 2000 and 2020,[6] 19 Hungarian county assemblies (*megyei közgyűlés*; NUTS 3) and the General Assembly of Budapest (*Fővárosi közgyűlés Budapest*; NUTS2/3) between 1994 and 2019, and eight Slovak regional legislatures (*zastupitelstvo kraja*; NUTS3) between 2001 and 2022.[7]

The effects of the above-mentioned indicators were analysed using the classic ordinary least squares method (multiple linear regression) or, more specifically, a pooled regression model. These methods enable us to identify changes in individual variables over time and across the entire set of observations. Model results are indicated by basic parameters, namely unstandardised regression coefficients (B; measuring the effect of an independent variable on the dependent variable when controlled for all other variables, it tells us how much the dependent variable changes per unit change in the independent variable), standardised regression coefficients (Beta; measuring the weight of each independent variable in the model), and the adjusted coefficient of determination (adjusted *R*-squared; measuring the overall performance of the model in explaining variance in the dependent variable). Furthermore, we present partial regression plots to show the effect of including an additional variable in the model (when one or more independent variables are already included).

Table 2 illustrates the result of our model, which regresses regional GDP per capita in PPS, as the dependent variable, on the set of independent variables. The first finding is that the regression model is relatively successful in explaining 44% of detected variance. Starting with the effect of participation, we found very different effects of the various types of participation. While our results confirmed a strong positive effect of the higher presence of NGOs in V4 regions on regional GDP, the effect of electoral participation (turnout in regional elections) was negative and very weak. Furthermore, similarly to non-electoral participation, the effect of women's representation was positive. Thus, higher success of women in elections to regional legislatures was present, especially in wealthier regions, and more importantly, especially the Beta coefficient value suggested a strong effect of female representation in the model.

However, while the regression model shows some association between regional development and the participation and representation dimensions of democracy (or, more precisely, some of their possible indicators), a much weaker effect is shown for indicators of the competition dimension. Furthermore, similarly to participation, the effects of both indicators of competition are not in the same direction. While a greater fragmentation of regional legislatures (*ENPP*) results in a rather lower regional GDP, a high balance among parties (*b*) in a legislature increases regional wealth. Finally, although the effect of both indicators of competition is not high, in terms of both their effects on the dependent variable and their weight in the model, their effects are slightly stronger than the effect of regional turnout, especially in terms of *ENPP*. This finding is also supported by the partial regression plots (Appendix 1), which show a rather stronger effect of NGOs operating in the given region, or women's representation in its legislature, a significantly lower effect of the index of the *ENPP*, and very low effects of the index of balance and especially turnout in elections to regional legislatures.

Table 2: Determinants of regional GDP per capita in PPS in the V4 countries, 1994–2022 (OLS, pooled regression model)

	B	SE	Beta	*p*
Turnout (log)	–0.027	0.067	–0.017	0.689
NGOs (log)	0.317	0.029	0.479	< 0.001
Women's representation	0.012	0.000	0.509	< 0.001
ENPP	–0.027	0.008	–0.165	0.001
Index of balance	0.072	0.056	0.064	0.197
Constant	3.800	0.123		< 0.001
N	368			
Adjusted R^2	0.441			

Note: The table presents coefficient estimates from pooled regression. B: unstandardised regression coefficients, Beta: standardised regression coefficients, SE: standard errors, *p*: statistical significance level.
Source: Eurostat (2023), author's own calculations.

4   Conclusions

In this chapter, we focused on regional development in V4 countries (Czechia, Poland, Hungary, and Slovakia) and inquired whether there is any association between regional development (understood in economic terms and measured by the size of regional GDP) and selected indicators of quality of democracy. The chapter showed that since 2000 (or since their accession to the EU in 2004), regional wealth has been systematically increasing in all V4 countries, as we observed an overall rise in the nominal level of GDP per capita in PPS. In particular, Poland achieved a high GDP rise in recent years, which moved the country behind Czechia, although with a considerable distance. In contrast, the rise of regional development is not so clear in terms of the percentage of the EU-27 average. On the one hand, Poland has been steadily approaching the EU-27 average, also due to its low baseline level of GDP. On the other, the remaining countries experienced stagnation in their convergence to the EU-27 level in recent years (Czechia approximately since 2014), a very minor rise (Hungary), or a downward trend (Slovakia since 2016).

Furthermore, we presented highly contrasting patterns of the interregional variability of GDP, which differentiated V4 countries into approximately three groups, from small (Poland) to relatively high (Slovakia) differences in development between the country's regions, together with different trajectories of how these differences transformed in time. Finally, although we found a very strong stability of regional GDP in individual regions across all V4 countries, our data also confirmed some interesting changes in spatial patterns of the spread of regional wealth. The position of Poland (or some Polish regions, more precisely) strengthened, even at the expense of some Czech regions, which were traditionally the most developed. In contrast, Hungary and especially Slovakia had

limited numbers of regions with a high level of development, mainly concentrated in and around their capital cities.

Furthermore, our effort to show whether there is any association between regional development and selected dimensions of the quality of democracy produced mixed results. In particular, the opposite effects of the two indicators of participation can be surprising. As we expect that both turnout in regional elections and membership in civil society organisations should be positively associated with regional GDP, further research should explain why voters in regions that are more developed are more inclined to vote abstention (although the effect is very weak) but at the same time are active in the non-profit sector. In contrast, the expected effect of women's representation leads to another question: Why does regional GDP not correlate equally with the number of women elected as regional governors in Czechia, Poland, Slovakia, or county council presidents in Hungary? Women's representation among regional leaders remains limited in the long term (for this reason, it was not included in the statistical analysis). Finally, in the case of the low effect of both indicators of competitiveness, it is necessary to consider whether our indicators are the most appropriate ones. There is no unequivocal agreement on which indicators of competitiveness are the best measures of quality of democracy. The problem is further exacerbated by the fact that in contrast to participation, whose levels are very constant across regional elections, the degree of competitiveness may vary significantly between elections in individual regions, as also shown by previous studies from Czechia and Poland (see Maškarinec, 2023: 51–58).

Finally, it is possible to mention that in the context of multi-level governance and globalisation processes, the socioeconomic development of regions may depend on other levels of governance (especially national), as well as other factors which regional governments cannot influence (see Kostelecký & Patočková, 2006: 916–918). Furthermore, the Czech example also showed that there may not be a direct relationship between regional government performance and the economic performance of the regions (see Kostelecký et al., 2007). All in all, analysis of regional development requires including a wide range of factors and considering the multi-level governance approach and the possible influence of local (regional) context on both development and quality of democracy. This is a range of questions for which there was no space in this chapter and which, even with the use of the findings presented here, can inspire further development of research on regional governance and its impact on the socioeconomic development of regions.

Funding:

Notes:

[1] Exactly by a factor of 2.2 in Czechia (from EUR 13,500 to EUR 29,700), 2.39 in Slovakia (from EUR 9,400 to EUR 22,500), 2.48 in Hungary (from EUR 9,800 to 24,300 euros), and 2.81 in Poland (from EUR 8,900 to EUR 25,000).

[2] Coefficients of variation were used to indicate relative variability. Expressed as a percentage, the coefficient is calculated as standard deviation ÷ mean × 100% and shows the dispersion of a variable's probability distribution. The higher the CV, the higher the differences between units of observation.

[3] The correlation coefficients reached the level of 0.996 on average for the V4 (with a minimum of 0.972), 0.999 (0.994) for Czechia, 0.998 (0.993) for Poland, 0.996 (0.985) for Hungary, and 0.999 (0.993) for Slovakia.

[4] We use Laakso and Taagepera's original term effective number of parliamentary parties (ENPP) to refer to regional legislatures/assemblies. According to Laakso and Taagepera (1979: 4), 'the effective number of parties is the number of hypothetical equal-size parties that would have the same total effect on fractionalisation of the system as have the actual parties of unequal size'. ENPP is calculated as follows: $ENPP = 1 / \Sigma si^2$, where si is the proportion of seats held by the i-th parliamentary party.

[5] According to Taagepera (2005), the index of balance is calculated as follows: $b = -\log s1 / \log p$, where s1 is the proportion of seats held by the largest party and p the number of seat-winning parties.

[6] Given the combined status Prague as a municipality and a region, regional elections are not held there. Therefore, we use the results of Prague's local elections between 1998 and 2018.

[7] Data on electoral results were retrieved from the statistical offices of the V4 countries.

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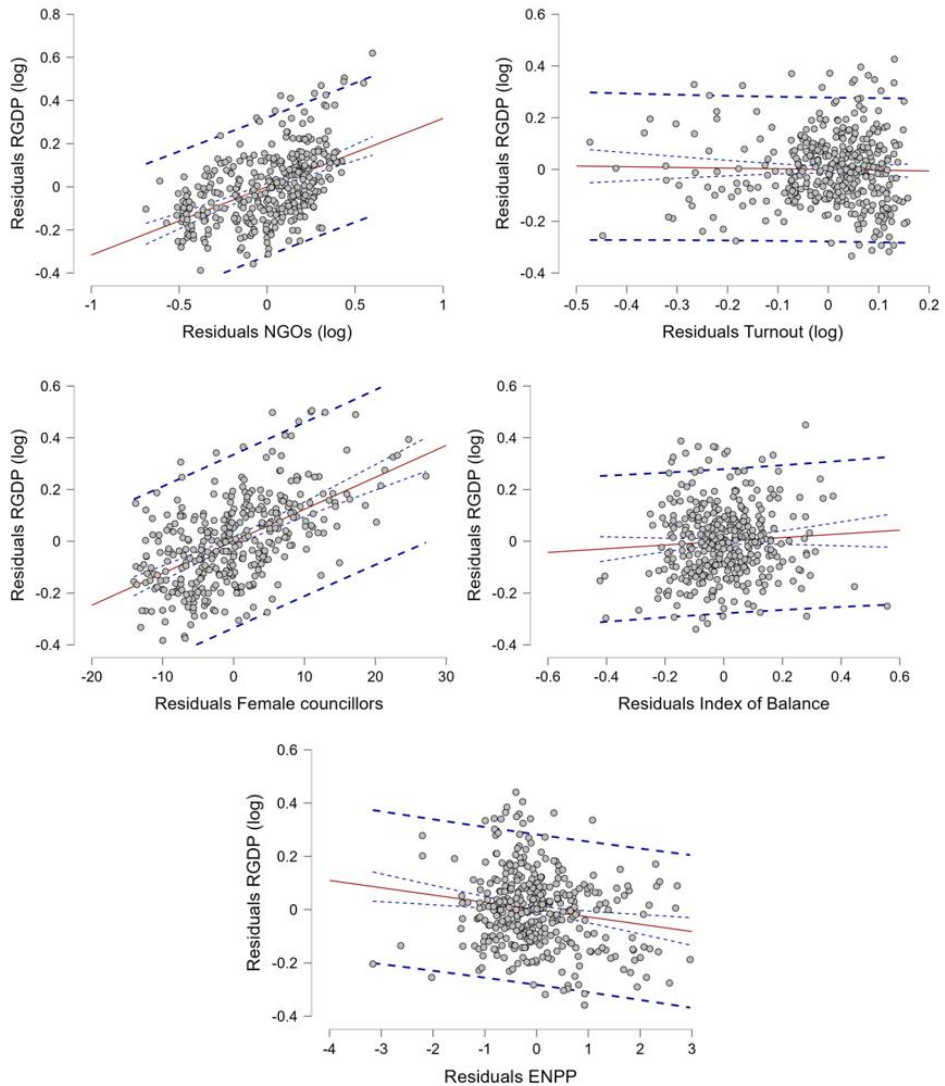
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Appendix:

Appendix 1: Determinants of regional GDP per capita in PPS in the V4 countries, 1994–2022 (partial regression plots)

Source: Eurostat (2023), author's own calculations.