SAME REVOLUTIONS, DIFFERENT DEVELOPMENT: SOCIO-ECONOMIC INDICATORS OF NON-GOVERNMENTAL ORGANIZATION'S LOCALIZATION IN V4 COUNTRIES IN EUROPE

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Abstract: *Revolutions in 1989' and later reforms in V4 countries started development of civil society, however, historical context, attitudes and characteristics of transition economies differ among these countries. The aim of this research is to analyse socio-economic characteristics and explain patterns in localization of non-governmental organisations (hereinafter 'NGOs') in V4 regions. The analysis will be performed using descriptive statistics and panel data regression with selected socio-economic indicators applied at the regional level. Contribution to literature brings an explanation of civil society development in V4 transition economies that have changed from central planning into market economies. Results reflect the impact of economic growth in regions, and importance of tertiary-educated population in NGOs localization. The highest concentration of NGOs has been found in the regions of capital cities in the Czech Republic, Hungary, and Slovakia, and in the vicinity of capital in Poland.*

Keywords: *transition countries, localization factors, NGOs, civil society development, Visegrad countries, Europe*

JEL Classification: H52, J11, N14

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1 Introduction

Visegrad countries (hereinafter 'V4 countries') have the most active civil society sector among Central and Eastern Europe transition countries (Vandor and Neumayr, 2023). V4 countries have a higher numbers of civil society organizations per capita compared to other CEE countries (Vandor and Neumayr, 2023) or other countries, such as Brazil (da Costa, 2016), Nepal (Dipendra, 2018) or Germany (Hippel, 2011). The definition of civil society differs according to local law and the setting of public services provided by the state or other institutions. The alternative term 'civil society' includes non-profit organisations (hereinafter 'NPOs'). This analysis focuses only on NGOs, representing NPOs without government ownership, and excluding churches and political parties. As of 2022, the number of NGOs in the V4 countries reached 131,843 in the Czech Republic[2], 71,979 in Poland[3], 70,013 in Slovakia[4] and 47,389 in Hungary[5]. However, these numbers represent registered NGOs, which may differ from the number of active ones. Civil society development and economic growth, using regional comparations in previous studies, can be explained by socio-economic indicators that impact the overall location of NPOs. NPOs, especially those providing human services, tend to locate in areas with greater economic stability, lower costs, and better access to financial resources (Bielefeld and Murdoch, 2004; Esparza, 2009; Katz, 2014). Previous studies have mainly focused on the U.S. as a representative of developed countries or on developing countries such as Bangladesh (Fruttero and Gauri, 2005), Kenya (Brass, 2012), Brazil (da Costa, 2016), and Nepal (Dipendra, 2018). On the contrary, developing countries usually have characteristics similar to transition economies, but their economic growth is not at the level of developed countries. However, patterns explaining the civil society development of transition countries, such as the V4 countries, that belong to developed nations (United Nations, 2023) and have a shorter history of democracy are missing in the literature. Based on this research gap, the aim of this analysis is to examine the following research questions: 'What are the numbers of NGOs located in V4 countries' regions?' and 'What are the socio-economic indicators of NGO localization in these regions?' The analysis will be performed using descriptive statistics

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and panel data regression with selected socio-economic indicators applied at the regional level. The results of this study can help policymakers at both the country and international levels to improve policy objectives related to civil society and the monitoring of unmet community needs. Donors may profit from information on where their resources are needed the most. Scholars may gain a better understanding of patterns in transition economies and further examine the sources of civil society development in these countries or similar ones. This study is divided into sections covering firstly literature review on topics such as civil society in transition economies and indicators of NPOs localization, followed by methodology and result sections describing socio-economic indicators influencing NGO localization in V4 countries, and concluding with discussion and conclusion.

2 Civil Society in V4 Transition Countries

The development of civil society in V4 countries was influenced by the reforms and revolutions in 1989-1990 that brought systemic changes (Bernhard, 1993). As former members of the post-Soviet bloc, they were primarily focused on agriculture or industry, which required a low-skilled workforce and had a higher lack of tertiary-educated population (De Melo et al, 2001). The Czech Republic, Hungary, Poland, and Slovakia faced repressed inflation, trade dependence on post-Soviet countries, and the transition from a central planning system to a market economy (De Melo et al., 2001). Their further development was affected by a lack of knowledge regarding a market economy, the perpetuation of outdated practices, and a higher share of industry in their GDP in 1990 (Slovakia – 59%, the Czech Republic – 58%, Poland – 52%, Hungary – 37%) (De Melo et al., 2001). On the contrary, their development was strengthened by their better location, proximity to Western Europe, and the reforms required during the EU membership procedure (De Melo, 2001; Skidmore, 2001).

Despite a similar transition period to a market economy and democracy, the development of civil society varied among V4 countries. Poland's and Hungary's longer history, a strong sense of nationality and the influence of religion contributed to the creation of social identity before the 1990s, so the stability of civil society development had deeper roots (Bernhard, 1993; Skidmore, 2001). Therefore, they were less affected by the revolutions in the 1990s compared to Czechoslovakia, where civil society had been repressed and

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influenced by Soviet ideology (Bernhard, 1993; Bernhard, 1996). The Czech Republic and Slovakia experienced high levels of structural imbalances but lower macroeconomic distortions compared to Hungary and Poland, which had a longer history of reforms, more liberal systems, and faced lower levels of macroeconomic and structural imbalances (De Melo et al., 2001). De Melo et al. (2001) revealed that political liberalization is connected to economic growth and that the propensity for democracy increases with per-capita GDP. Economic growth and the development of human capital preceded civil society development, which required changes in democracy related to ethnic, religious, and cultural development within society (De Melo et al., 2001).

The political and economic transition was accompanied by a demographic transition. Easier access to tertiary education influenced the postponing of marriages and childbirth; political reforms related to the social sector brought financial obstacles of raising children; democracy and the shift toward secularization affected the increase in extramarital births and cohabitation, as well as migration for work within the country or emigration to western countries; the improvement of health policies prolonged life expectancy and access to contraception allowed fertility control and the planning of family life for later years (Perlitz, et al. 2010). Additionally, increasing the retirement age has not allowed grandparents to help raise grandchildren or children to take care of their retired parents. Therefore, these changes have increased the demand for social services provided by the states.

The development of V4 countries is also linked to the decentralization process of public administration, improvements in government quality, and economic growth initiatives led by the EU. The development of human capital and civil society was accelerated by EU membership support (Vandor and Neumayr, 2023), which extended to overall regional development in these countries (Meyer et al, 2019). These changes were required to address the heterogenous needs and priorities of individuals across different regions, allowing regional governments to more precisely target public policies and deliver them effectively by applying the EU concept of placed-based policies (Muringani et al., 2018). Moreover, financial resources provided by the EU were aimed at civil society development in the programming period 2014-2020 and availability of its statistics.

Poland has seen an evident increase in the numbers of NGOs, from 47,104

(2014) to 71,989 (2022). Poland's positive historical attitude towards civil society led to a transformation from large membership organizations into small, professionalized NGOs dependent on volunteering. This transformation has been supported by legislation that opened access for NGOs to outsource public services, share community needs information and knowledge, participate in legislation, create advocacy bodies, and develop partnerships with other NGOs (Ekiert et al, 2017).

Table 1: Total numbers of NGOs in V4 countries

	2014	2015	2016	2017	2018	2019	2020	2021	2022
Poland	47104	49501	49501	52518	51852	49767	49767	71989	71989
Czech Republic	101978	105788	110660	114909	118322	122833	125935	128792	131843
Slovakia	48322	51119	53902	56690	59506	62486	64875	67360	70013
Hungary	38438	42661	49692	48075	48003	48164	47866	47652	47389

Source: own processing.

The number of NGOs in the Czech Republic increased from 101,978 (2014) to 131,843 (2022), which has been caused by the government's openness towards NGOs as a supplement to the provision of public services, mainly in the fields of education, social services, culture, advocacy, as well as their commercialization and professionalization (Navratil and Pejcal, 2017).

Hungarian civil society has been affected by government reforms leading to repression evident in the number of NGOs – 38,438 NGOs (2014) to 47,389 NGOs (2022). Civil society organizations have been facing government control, grant access obstacles, and centralization procedures that have decreased revenues for municipalities and halted cooperation with NGOs (Kuti, 2017).

Slovak NGOs increased from 48,322 (2014) to 70,013 (2022), which represents the highest numbers of NGOs relative to population size among the V4 countries. There are various reasons behind these numbers – the volunteer-based operation of NGOs at the local and community level, central government support in the fields of health, social services, housing, and education; and the creation of the Governmental Plenipotentiary for the Development of

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Civil Society, which brought a better perspective for cooperation with the government and also strengthened cooperation among NGOs themselves (Strecansky, 2017).

3 Indicators of NPOs' Localization

The literature focuses on various types of NPOs, including NGOs, and their localization factors. NPOs and social groups in specific areas are shaped by local factors that determine whether an organization is established there or not. Differences across regions in a nation can be significant due to openness and easier interaction with other regions (Fagian and McCann, 2009). The NPO literature explains the localization of NPOs based on economic theories of NPO creation; however, regional economics better explain localization factors that influence the creation of NPOs. Looking for the answer to 'where' and 'why' directs us to two main areas – resources and community needs. As expenditures from the government (including grants and subsidies for NPOs), enterprises (covering NPO donations), and individuals (containing charitable donations or payments for NPO services) are included in GDP as an indicator of economic growth. Moreover, an increased per-capita GDP is associated with increased funding for NPOs (Vandor and Neumayr, 2023).

Organizations typically establish their headquarters in locations with better access to available resources (including government grants and subsidies), greater location prestige, lower transactional costs (e.g. taxation), and local policies that affect the organisation's setup (Katz, 2014). Skidmore (2001) claims that the NPOs-government relationship is defined by the level of growth and status of the modern state, in which the government allows NPOs more space to provide public services because NPOs can provide them with lower transactional costs compared to other organisations (Anheier, 2005; Grønbjerg and Paarlberg, 2001). This strategy is often applied when the government lacks the capacity to meet all needs, particularly in underdeveloped areas where both the government and the market fail (Garrow, 2011). NPOs, especially those providing human services, tend to locate in areas with greater economic stability, a better relationship with the government, and stronger financial support (Bielefeld and Murdoch, 2004; Esparza, 2009).

Bielefeld and Murdoch (2004) revealed the competition between for-profit enterprises and NPOs in the delivery of public services. Later U.S. analysis

confirmed a negative relationship between the number of enterprises and a higher NPO density in locations with larger populations and fewer businesses (Sevak and Baker, 2021). In the territory of V4 countries, which provide income tax assignation as a tool for individuals' and companies' donations (Ekiert et al, 2017; Kuti, 2017; Strecansky, 2017), it is more appropriate to formulate a hypothesis that a greater number of enterprises is associated with a higher number of NGOs. This statement is connected to stakeholder theory, which describes the intentions of enterprises to donate money to NPOs as a way to participate in social value creation (Weisbrod, 1988; Anheier, 2005; Van Puyvelde and Brown, 2016).

The main financial resources contributing to the further development of NPOs must be diversified; therefore, NPOs must focus on charitable donations from individuals and companies (Sevak and Baker, 2021). Various indicators, mirroring regional wealth (Lecy and Van Slykke, 2003; Saxton and Benson, 2005), economic growth, urbanization, and market development (Reynolds et al., 1994; Davidsson and Wiklund, 2007), have been analysed such as household or median income. Household income is available to NPOs in two forms – charitable donations and payments for NPO services, thus representing the financial resources available from the community. Prior studies have demonstrated a positive relationship between household income and NPO density (Lecy and Van Slykke, 2003; Saxton and Benson, 2005; Grønbjerg and Paarlberg, 2007; Sevak and Baker, 2021; Park, 2023). The same results are confirmed by the analysis of median family income among all types of NPOs (Park, 2023). Household income reveals various aspects of the relationship between local communities and NPOs in a region.

Studies of NPO density have analysed the tertiary-educated population and its impact on NPOs, yielding various results – positive (Benner and Van Homissen, 1998; Park, 2023) and no significant effect on NPO density (Marcuello, 1998). Testing this hypothesis relates to the willingness of highly educated people to donate more due to their higher income (Bekkers and Wiepking, 2011) and their higher quality expectations for public services, which are covered by the government only at the level of median voter (Weisbrod, 1988). Therefore, this population group is more likely to pay for NPO services. Regional studies point out that the tertiary-educated population represents human capital, which contributes to social capital formation in the forms of various institutions or social networks (Faggian and McCann, 2009). These social networks can start

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at an informal level, but they can also be transformed into formal civil society organizations.

4 Methodology

Even though the literature has primarily focused on NPOs, our analysis focuses on NGOs. Civil society organizations in the V4 have been identified based on statistical data (Poland and Hungary) or the non-profit organizations register (the Czech Republic and Slovakia), as stipulated by each country's jurisdiction. An NGO is characterized as a formal organization that operates independently with professionals to achieve specific aims and common goals at the national or international level (Martens, 2002). Various forms of NGOs include interest groups, pressure groups, professional organizations, voluntary organisations, and civic associations, as described in the literature (Martens, 2002). The aim of this paper is to utilize data from the NGO registers and V4 countries' statistics to describe the numbers of NGOs in different regions and to characterize the key socio-economic indicators impacting NGO localization in these countries. Katz (2014), da Costa (2016), Sevak and Baker (2021), and Park (2023) analysed NGO localization factors, which form the foundation for the V4 countries analysis. Based on these studies, the following research questions were formulated: (RQ1): What are the numbers of NGOs located within regions in V4 countries? (RQ2): What are the socio-economic indicators influencing their localization?

NGO data were sourced from various portals: the Czech Republic and Slovakia (both countries available at Finstat.sk – data aggregated at the NUTS 3 regional level), Hungary (Hungarian Central Statistical Office – data available at the NUTS 3 regional level), Poland (Statistics Poland – aggregated data at the NUTS 2 level). The analysed data covered the period 2007-2022 for the Czech Republic, Hungary, and Slovakia (as EU Member States), while data for Poland were available only for the period 2013-2021. Data were cleaned according to our criteria, focusing only on NGOs - civic organisations, NGOs, sports organizations, and membership organisations with non-governmental status were included. Several limitations were identified in the Polish NGO data, which stemmed from the biannual reporting of NGO data at the NUTS 2 level. Consequently, the number of NGOs in each region was recalculated through interpolation, which resulted in varying numbers of NGOs corresponding to population changes in each respective year and was transformed into NUTS 3

regional level. Interpolation was necessary due to missing annual data. Only major cities such as Warszawa, Lodz, Poznan, Szczecin had published data that could be matched at the NUTS 3 level.

The first research question was addressed through an analysis comparing the number of NGOs in each region in 2022. Descriptive statistics were employed, utilizing map visualizations to illustrate the regions with the highest and lowest numbers of NGOs among the V4 countries. Map 1 presents recalculated data at the regional level in V4 countries in 2022. The second research question was addressed through a fixed effect model (hereinafter FE-model) analysis, which elucidates the socio-economic indicators impacting NGO localization in the V4 countries. Data were analysed for the period of 2014-2022, incorporating datasets from Eurostat, national statistical offices, and aggregated NGO data spanning entire period. Subsequently, the econometric model was formulated as:

$$y_i = \beta_0 + \beta_1 X_{ij} + \varepsilon_i \quad (1)$$

The parameter y_i represents the number of NGOs in the region. The parameter X_{ij} represents the independent variables describing the socio-economic indicators of NGO localization in the region, ε_i is the error term. The predictor X_{ij} was used to analyse per-capita GDP in millions of EUR (Skidmore, 2001; Meyer et al, 2019; Vandor and Neumayr, 2023), the number of enterprises (Katz, 2014; Park, 2023), the percentage of tertiary educated people aged 25 and above (Fagian and McCann, 2009; Muringami et all, 2019; Park, 2023), and disposable household income (Sevak and Baker, 2021; Park, 2023). The tertiary education share and disposable household income were obtained from Eurostat, while the numbers of enterprises and unemployed people were sourced from the Czech, Slovak, Hungarian and Polish statistical offices. Per-capita GDP was calculated based on GDP in real terms and the population size extracted from Eurostat.

Prior to conducting the regression analysis, checks for homoscedasticity, multicollinearity and linearity were necessary. Residuals were found to be heteroscedastic, as confirmed by an IM test with a p-value of zero. The VIF test (Appendix) showed that all values were below 6, indicating that all selected variables could be used for analysis. The Kernel distribution did not indicate linearity between variables, necessitating the log transformation

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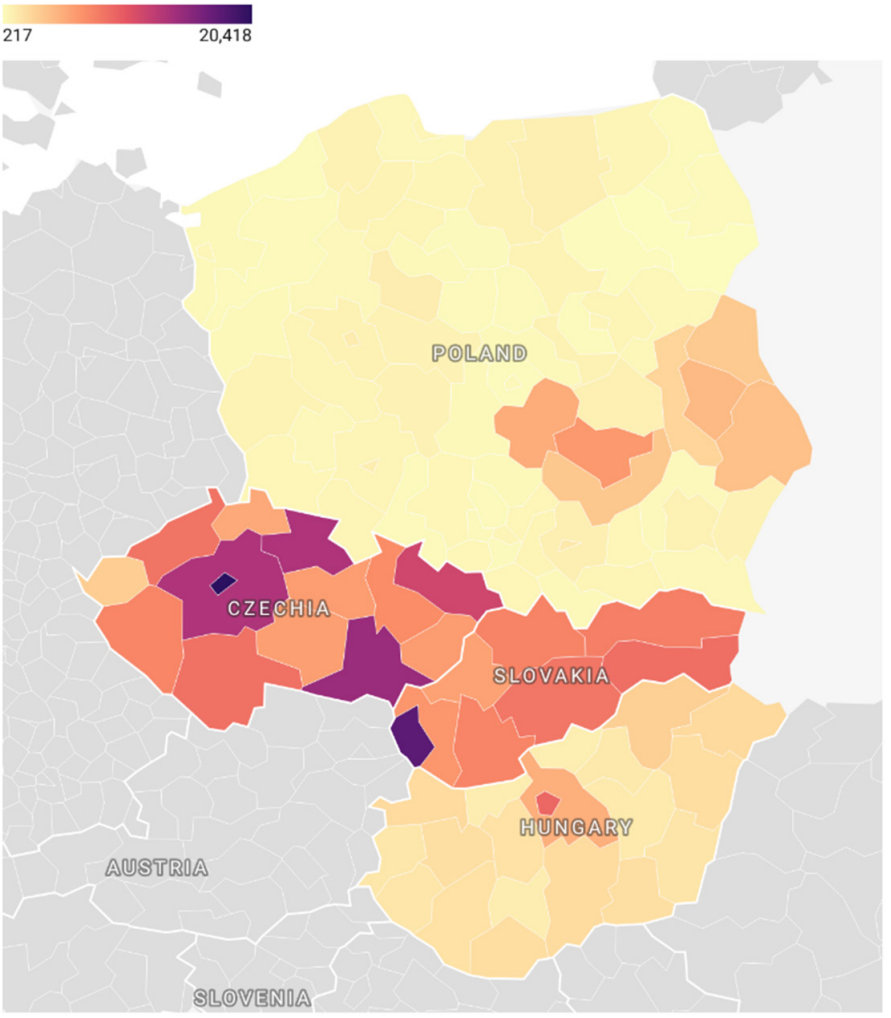
for all variables except the tertiary education rate. A balanced dataset was confirmed, and the Breusch-Pagan test (Appendix) resulted in a p-value of zero, supporting the use of a panel data regression analysis. The Hausman test (Appendix) indicated the suitability of the fixed effect model which was employed in five versions – all V4 regions combined, as well as separately for Poland, Hungary, the Czech Republic, and Slovakia.

5 NGOs Localization in V4 Regions and Socio-economic Factors

The aim of this paper has been to analyse data from the NGO register and statistics of V4 countries to describe the numbers of NGOs in different regions and to characterize key socio-economic indicators impacting NGO localization in these countries. Map 1 shows the V4 regional differences in the numbers of NGOs in 2022. Table 2 provides the results of different models of FE model regressions. Model (1) explains the socio-economic indicators behind NGO localization in the V4 countries at the regional level (115 regions analysed). Other models explain NGO localization factors in regions separately for Poland (2), Hungary (3), the Czech Republic (4) and Slovakia (5). All models have been analysed based on the hypotheses considering per-capita GDP, the number of enterprises, household income, and the share of tertiary-educated people.

Descriptive analysis of V4 regions and their number of NGOs reveals that Prague, the capital city, had the highest number of NGOs (20,418) in 2022, followed by the Bratislava region (17,879) and Czech regions such as South Moravia (14,650), Hradec Kralové (13,545), and Central Bohemia (13,528). The Hungarian region of Budapest had only 9,257 NGOs. The Polish region with the highest number of NGOs in 2022 is Radomski (6,278). The lowest numbers of NGOs are found in Polish regions such as Tyski, Skierniewicki, Suwalski, Ełcki, Koszaliński, Chojnicki, Świecki having less than 400 NGOs.

Map 1: NGOs localization in regions of V4 countries in 2022



Source: own processing.

Regression analysis of V4 regions (Model 1) reveals that NGOs tend to be located in regions with a higher per-capita GDP ($\beta = 0.751$, $p<0.01$), a higher share of tertiary-educated population ($\beta = 0.0336$, $p<0.01$), a higher number of enterprises ($\beta = 0.0484$, $p<0.1$), and lower household income ($\beta = -1.175$, $p<0.01$) The constant suggests using other socio-economic variables that should additionally explain NGO localization in the V4 regions.

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Table 2: Analysis of socio-economic indicators impacting NGOs' localization in V4 countries in the period 2014-2022

VARIABLES	(1) ALL	(2) PL	(3) HU	(4) CZ	(5) SK
Per-capita GDP (logged)	0.751***	0.698***	0.651***	0.056	0.124*
	(0.157)	(0.245)	(0.101)	(0.086)	(0.072)
Numbers of enterprises (logged)	0.049*	0.059	-0.115	0.012	0.637***
	(0.025)	(0.031)	(0.107)	(0.099)	(0.085)
Share of tertiary-educated population	0.034***	0.065***	-0.005	0.008***	0.009**
	(0.007)	(0.013)	(0.005)	(0.003)	(0.004)
Household income (logged)	-1.175***	-2.047***	-0.216	0.561***	0.054
	(0.258)	(0.429)	0.167)	(0.131)	(0.080)
Constant	10.41***	18.44***	4.912***	2.589***	0.445
	(1.648)	(3.268)	(0.864)	(1.165)	(0.991)
Observations	1,035	657	180	126	72
R-squared	0.112	0.107	0.477	0.892	0.962
Number of regions	115	73	20	14	8

Notes: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Source: own processing.

Polish NGOs (Model 2) are located in regions with a higher per capita GDP ($\beta = 0.698$, $p<0.01$), a higher share of the tertiary educated population ($\beta = 0.0648$, $p<0.01$), lower household income ($\beta = -2.047$, $p<0.01$), and a higher number of enterprises ($\beta = 0.0588$, $p<0.1$). NGOs in ***Hungary*** (Model 3) are located in regions with a higher per-capita GDP ($\beta = 0.651$, $p<0.01$). Variables measuring the numbers of enterprises, household income, and tertiary education do not have any significant association with NGO localization in Hungary. In the ***Czech Republic*** (Model 4), NGOs are localized in regions with a higher share of tertiary-educated people ($\beta = 0.00842$, $p<0.01$), and higher household income ($\beta = 0.561$, $p<0.05$). Variables representing per-capita GDP and the numbers of enterprises do not have any significant relationship with

the numbers of NGOs in Czech regions. NGOs in ***Slovakia*** (Model 5) tend to be established in regions with a higher per-capita GDP ($\beta = 0.124$, $p<0.1$), a higher numbers of enterprises ($\beta = 0.637$, $p<0.01$), and a higher share of tertiary-educate population ($\beta = 0.00910$, $p<0.05$). Household income does not have any significant association with the numbers of NGOs in Slovakia.

6 Discussion and Conclusion

The regional analysis of V4 countries showed various important findings regarding NGO localization indicators related to both all regions' comparison and country- specific factors. Firstly, the distribution of NGOs among regions in the V4 countries is not similar, even though they have faced a similar historical context connected with civil society's creation processes after 1989. The highest concentration of NGOs was found in the regions of capital cities in the Czech Republic, Hungary, and Slovakia, and in the vicinity of capital city in Poland. This location gives them greater opportunities for access to government subsidies, public institutions and enterprises that can provide an additional financial resource (Anheier, 2005; Bielefeld and Murdoch, 2004; Esparza, 2009; da Costa, 2016). The proximity to capital cities also explains patterns associated with community needs, such as the lack of public services in highly populated regions (Grønbjerg and Paarlberg, 2001; Katz, 2014; Sevak and Baker, 2021).

The overall analysis of V4 regions revealed various patterns in NGO localization. Firstly, it explained important community needs that are addressed by NGO-provided public services. Regions with a higher proportion of tertiary-educated population attract more NGOs, as these individuals represent a valuable workforce for these organizations (Park, 2023). They are also willing to donate more money or contribute their time as volunteers (Bekkers and Wiepking, 2011) and require a higher quality of public services than what median voters typically demand (Weisbrod, 1988). This population group is also connected to demographic transition processes, which influence migration across regions (Fagian and McCann, 2009; Perlitz, et al. 2010). The attraction of NGO to locate in regions with lower household income reveals that this attribute does not reflect a possible financial resource but rather a community need (Lecy and Van Slykke, 2003; Saxton and Benson, 2005; Grønbjerg and Paarlberg, 2007; Sevak and Baker, 2021; Park, 2023). A higher number of enterprises attracting higher numbers of NGOs in regions ($p<0.1$) confirms

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the prediction that enterprises represent donors in the V4 regions, rather than competition (Anheier, 2005; Weisbrod, 1988), using income tax assignation as a donation tool (Ekiert et al, 2017; Kuti, 2017; Strecansky, 2017). This finding contradicts previous studies (Bielefeld and Murdoch, 2004; Sevak and Baker, 2021). Per-capita GDP reflects economic growth of region and all expenditures, including government expenditures, mirror the economic situation and indicate a possible relationship between government and financial support for NGOs (Bielefeld and Murdoch, 2004; Esparza, 2009). Simultaneously, it confirms prior studies (Skidmore, 2001; De Melo et al., 2001) showing that the delayed development of civil society and social capital requires preceding economic growth. NGOs in the V4 regions are located in areas with a higher tertiary-educated population ($p<0.01$), and lower household income ($p<0.01$). This contradiction is caused by differences between Polish regions, which have higher values of disposable income compared to the Czech Republic, Slovakia, and Hungary. Therefore, the government and the EU should pay attention to these locations to provide financial support to NGOs in these areas with lower transactional costs compared to the government, as they rely on volunteers and monitor the accessibility and quality of public services in these regions. As most organisations operating in the V4 regions focus on education and social services, monitoring of these areas is essential from the perspective of government institutions.

The separated analyses of V4 countries signal that similarities stemming from the revolutions in 1989 did not bring the same development in civil society at the country level.

The Analysis of Polish regions reveals the higher significance of per-capita GDP as a determinant of economic growth and government expenditures, (Bielefeld and Murdoch, 2004; Esparza, 2009; Ekiert et al, 2017), along with a higher number of enterprises, and lower household income. These regions are more industrially or agriculturally focused (World Bank, 2023), therefore they do not have enough job opportunities for tertiary-educated people, who usually work in the service sector (Da Costa, 2016). Their uncovered community needs, caused by various life events, are confirmed by the increasing number of NGOs in regions with a higher share of tertiary-educated population (Marcuello, 1998; Sevak and Baker, 2021; Park, 2023). The Polish government should focus on regions with unmet needs that clearly signal a lack of public services among all subsectors and improve the sharing of community needs

information, while supporting NGOs in the co-production of public services (Ekiert, 2017).

Hungarian NGO localization reveals the impact of the centralization of public services in Hungary. NGOs are settled in regions with a higher per-capita GDP, which relates to the availability of a proper source of human capital as workforce in these regions and the regional development of these areas (Fagian and McCann, 2009; Perlitz, et al. 2010). The status of Hungarian NGOs reflects the centralization of public administration, which increases interest in NGO-provided public services. Missing public services reflect aspects of economic and demographic transition in Hungarian regions. Unambiguous repression of civil society by strict rules is evident in the numbers of NGOs across regions (Kuti, 2017). Instead of non-profit repression, the Hungarian government should instead monitor the missing public services in areas where NGOs are located. Moreover, the EU should monitor the fulfilment of goals set in strategic documents related to civil society development and the usage of EU funds while controlling the democratic evolution in countries with autocratic tendencies.

Czech NGOs are more likely to be located in regions with a capital city or larger cities. A higher share of tertiary-educated population is related to wealth, as higher education provides a higher chance of increased income (Lecy and Van Slykke, 2003; Saxton and Benson, 2005; Bekkers and Wiepking, 2011). More educated people have higher expectations regarding the quality of public services (Weisbrod, 1988); therefore, they are willing to pay for NGO services. Results confirmed that NGOs in Czech regions represent an alternative to public services provided by the government, as they are considered as a supplement to the provision of public services (Navratil and Pejcal, 2017). People willing to pay for NGO services signal to the government that it should monitor the accessibility and quality of public services in at-risk areas to uncover gaps in public services for a growing population.

NGOs in Slovakia are mainly located in the capital city area and regions with a higher per-capita GDP ($p<0.1$), a higher number of enterprises, and a higher share of tertiary-education population. Per-capita GDP, including government expenditures, confirms the necessity of financial sources and economic growth as determinants of civil society development (Bielefeld and Murdoch, 2004; Esparza, 2009). Economically developed regions struggling with incomplete

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decentralization of public administration reflect unmet needs. Moreover, these regions suffer from migration to the capital city, which results in a decreased need for public services (Perlitz, et al. 2010). These consequences of economic and demographic transition put pressure on the government and local municipalities to monitor the provision of public services (in terms of accessibility and/or quality) or to plan a budget to support NGO activities aimed at the co-production of public services.

This research had some limitations that stemmed from the availability of data on Polish NGOs, requiring interpolation, and the selection procedure of socio-economic factors, which depended on the availability of consistent statistics among all V4 countries. Therefore, a recommendation for future research is a concentration on a single country and the utilization of the most comprehensive socio-economic factors at a more granular level that can provide deeper insights into the factors influencing NGO localization.

Despite research limitations, the analysis of V4 countries contributed to the literature explaining the impact of economic and demographic transition on NGO development. Polish NGOs are often located in rural regions that face economic transition (increasing per-capita GDP) and unmet needs related to household income. Hungarian civil society clearly suffers from repression and the centralization of public services that do not cover community needs. The results for the Czech Republic and Slovakia show similarities in NGO location in the capital cities and larger cities as a consequence of demographic transition. Czech NGOs tend to be driven by the needs of tertiary-educated people.

Findings have relevant policy implications for national governments to monitor missing public services, for EU institutions to set up their strategic goals related to NGOs, and for local governments to focus on community needs in these regions. This analysis shows that the same revolutions and the transition from a centrally planned economy to market economy did not bring the same level of civil society development. Socio-economic indicators revealed different patterns among the V4 countries and the localization of NGOs in their regions, which are affected by characteristics related to their needs, political direction, traditional religious values, and ongoing economic and/or demographic transitions.

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Appendix

Table 3: Correlation matrix

	NGOs	GDp	entre	educ	incom
NGOs	1				
GDp	0.6476	1			
entre	0.5441	0.6667	1		
educ	0.0134	0.4242	0.5092	1	
incom	-0.2547	0.1727	0.1784	0.5658	1

Table 4: VIF test

Variable	VIF	1/VIF
entre	2.06	0.485137
educ	1.99	0.501586
GDp	1.83	0.545779
incom	1.51	0.663659
Mean VIF	1.85	

Table 5: Breusch and Pagan Lagrangian Multiplier Test for Random Effects

lNGOs[nuts_nm,t] = Xb + u[nuts_nm] + e[nuts_nm,t]

Estimated results:

	Var	SD = sqrt(Var)
lNGOs	1.208636	1.09938
e	0.071652	0.267679
u	0.465478	0.68226

Test: Var(u) = 0

chibar2(01) = 2827.12

Prob > chibar2 = 0.0000

Table 6: Hausman Test

	Coefficients			
	(b)	(B)	(b-B)	sqrt(diag(V_b-V_b)
	fixed	random	Difference	Std. err.
lGDp	0.750528	1.042889	-0.29236	0.124672
lentre	0.048382	0.062334	-0.01395	0.001391
educ	0.033575	0.015166	0.018409	0.003527
lincom	-1.17516	-1.09884	-0.07631	0.229718

b = Consistent under H0 and Ha; obtained from xtreg.

B = Inconsistent under Ha, efficient under H0; obtained from xtreg.

Test of H0: Difference in coefficients not systematic

chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 41.02

Prob > chi2 = 0.0000

(V_b-V_B is not positive definite)