# The local allocation of EU funds in Slovakia: determinants of success in project submissions in 2014-2020

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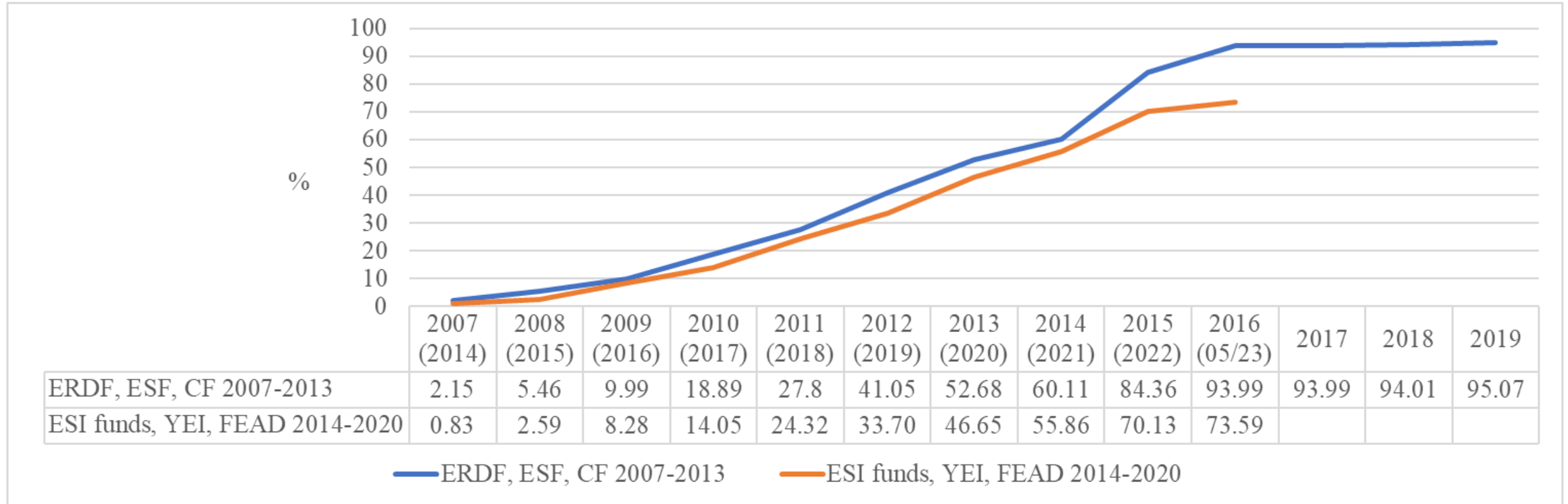Pavol Jozef Šafárik University in Košice
*University of Economics in Bratislava

# Motivation and objective

- **ESIF funds** are significant for **municipal investments**
  - After fiscal decentralization, the share of **personal income tax** is the most important revenue source for municipalities
  - **Local taxes** represent only around **11% of total income** *(Papcúnová, Hudáková and Beresecká, 2018)*
  - **48%** of **approved projects** in the 2014-2020 program period as of March 2023

- **Lower absorption, late start** of implementation
- **Differences among municipalities**
  - E.g., large cities typically have experienced staff, small municipalities depend on external consultants *(Šumpíková, Pavel a Klazar, 2004)*

**What are the determinants of the success rate of submitted projects for European Structural and Investment Funds (ESIF) funding for municipalities in Slovakia in the 2014-2020 programming period?**

# Stylized facts on CP funding in Slovakia: absorption



| | 2007 (2014) | 2008 (2015) | 2009 (2016) | 2010 (2017) | 2011 (2018) | 2012 (2019) | 2013 (2020) | 2014 (2021) | 2015 (2022) | 2016 (05/23) | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ERDF, ESF, CF 2007-2013 | 2.15 | 5.46 | 9.99 | 18.89 | 27.8 | 41.05 | 52.68 | 60.11 | 84.36 | 93.99 | 93.99 | 94.01 | 95.07 |
| ESI funds, YEI, FEAD 2014-2020 | 0.83 | 2.59 | 8.28 | 14.05 | 24.32 | 33.70 | 46.65 | 55.86 | 70.13 | 73.59 | | | |

— ERDF, ESF, CF 2007-2013    — ESI funds, YEI, FEAD 2014-2020

**Cumulative EU payments as a share of total allocation in 2007-2013 and 2014-2020 in Slovakia**
Source: Data from EC (June 2023)

# EU funds at the local level – literature review

- **Prior studies in member countries**
  - Poland *(Banaszewska and Bischoff, 2017)*, Portugal *(Migueis, 2013)*, Hungary *(Muraközy and Telegdy, 2016)*, Slovakia *(Smékalová, 2018)* , Romania *(Marin et al., 2023)*
  - Findings: Support not always aligns with social and economic development

- Economic criteria not the sole determinants of the allocation; the **political situation** and relations between various layers of governance are significant *(Bouvet and Dall'erba, 2010)*

- **Electoral incentives** and funding objectives vs ESIF grant allocation in Germany's local districts *(Dellmuth and Stoffel, 2012)*
- **Political motivations** and normative objectives *(Veiga, 2012; Muraközy and Telegdy, 2016; Migueis, 2013)*
  - Municipal grants increase during local election years
  - Grants favor municipalities with closely contested legislative elections and where the ruling party is supported.

# Dataset

- Programing period: **2014-2020**, Slovakia only
- Data from **January 2014** to **March 2023**
- Official national database on proposals and management (**ITMS2014+**)
- Other data from the **Statistical office** of Slovakia and **INEKO** (NGO).
- **2 357** municipalities or city boroughs out of **2 929** eligible **submitted** a proposal
  - Bratislava and Košice are separate legal entities established by a special law
  - Bratislava and Košice, are the only cities divided into city boroughs
  - Applications submitted by both the individual city boroughs and the cities themselves analyzed
- Main dependent variable: **project proposal success rate**
  - ratio of the number of project proposals approved for financing to the number of submitted proposals

# Explanatory variables

- Number of **submitted projects**, number of **inhabitants**
  - proxy for the municipalities' ability to submit quality projects, see Šumpíková, et al. (2004)
- **Unemployment rate, Share of inhabitants (15-64)**
- **Financial indicators**
  - Total debt per inhabitant
  - Investment intensity
  - Current liquidity
  - Profit/loss after tax per inhabitant,
  - Surplus/deficit per inhabitant,
  - Net assets per inhabitant
- **Political party alignment** with the ruling government coalition in 2014-2020
- **Mayor gender** (proxy by surname)

# Methodology

- Descriptive **characteristics** and financial **indicators** on individual municipalities have been **averaged for three preceding years**, i.e., years 2011-2013

- Overall performance of each municipality – **the success ratio**

- **Fractional logistic regression**
  - Uses logistic **link function** to model ratios, accounts for boundary cases.
  - With a limited dependent variable constrained to the unit interval, **OLS** estimation should not be used
  - **Beta regression** of Ferrari and Cribari-Neto (2004) is a highly versatile, but only suitable for data strictly within the unit interval (no 0 and 100% success rates)

# Summary statistics

|  | (1) N | (2) mean | (3) sd | (4) min | (5) max |
|---|---|---|---|---|---|
| Success rate | 2 357 | 0.69 | 0.31 | 0.00 | 1.00 |
| Number of submitted projects | 2 357 | 4.97 | 5.94 | 1.00 | 65.00 |
| Size (number of inhabitants) | 2 357 | 2 466.31 | 11 727.65 | 12.67 | 414 130.67 |
| Share of inhabitants (15-64 years) | 2 357 | 0.70 | 0.04 | 0.42 | 0.84 |
| Debt per inhabitant | 2 356 | 73.06 | 94.70 | 0.00 | 828.94 |
| Investment intensity | 2 357 | 0.05 | 0.22 | -0.93 | 2.30 |
| Current liquidity | 2 338 | 19.09 | 182.32 | 0.01 | 6 857.85 |
| Profit/loss per inhabitant | 2 357 | 20.52 | 89.09 | -343.29 | 1 349.01 |
| Surplus/deficit per inhabitant | 2 357 | 15.60 | 83.88 | -1 004.07 | 533.04 |
| Net assets per inhabitant | 2 357 | 1 857.83 | 1 851.13 | 0.00 | 45 285.83 |
| 2014-2020 ruling parties affiliation | 2 357 | 0.32 | 0.43 | 0.00 | 1.00 |
| Female representative | 2 357 | 0.21 | 0.39 | 0.00 | 1.00 |
| Unemployment rate | 2 354 | 0.14 | 0.09 | 0.02 | 0.68 |

*Note: N – number of municipalities or city boroughs that have applied for ESIF funds until the end of March 2023 and that have already been evaluated (approved or not-approved) without European Territorial Cooperation and technical assistance projects*
*Source: data from ŠÚ SR, INEKO (2023), ITMS2014+*

*Project applications and the success rates for municipal project financing requests*

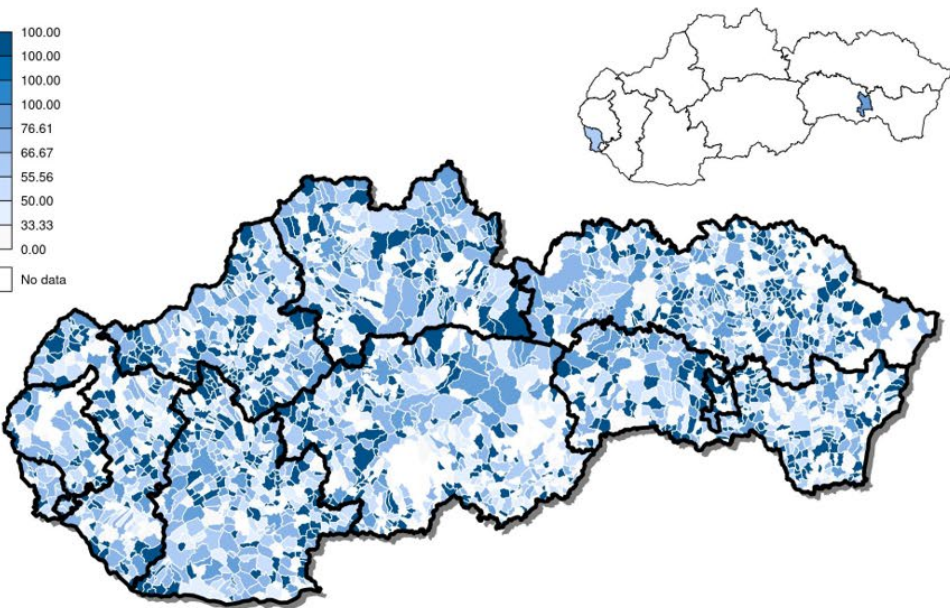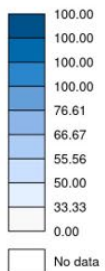| Operation programme (OP) | Number of submitted project proposals | Number of approved project proposals | Success rate | The ratio of approved to requested funds |
|---|---|---|---|---|
| OP Quality of Environment | 3 667 | 2 012 | 55 % | 55 % |
| OP Human resources | 2 843 | 2 053 | 72 % | 60 % |
| Integrated regional operational programme | 2 670 | 1 827 | 68 % | 68 % |
| Rural development programme | 1 658 | 1 132 | 68 % | 67 % |
| OP Integrated infrastructure | 912 | 793 | 87 % | 97 % |
| OP Effective Public administration | 20 | 15 | 75 % | 75 % |
| Additional contributions 2014-2020 | 7 | 7 | 100 % | 100 % |
| **Total** | **11 777** | **7 839** | **67 %** | **63 %** |

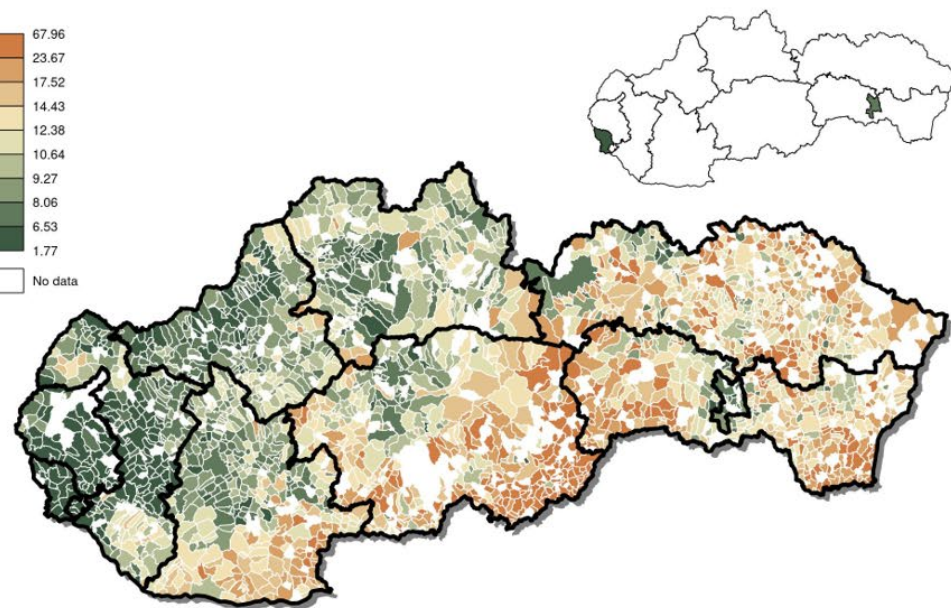Number of inhabitants of municipalities vs. number of submitted project proposals
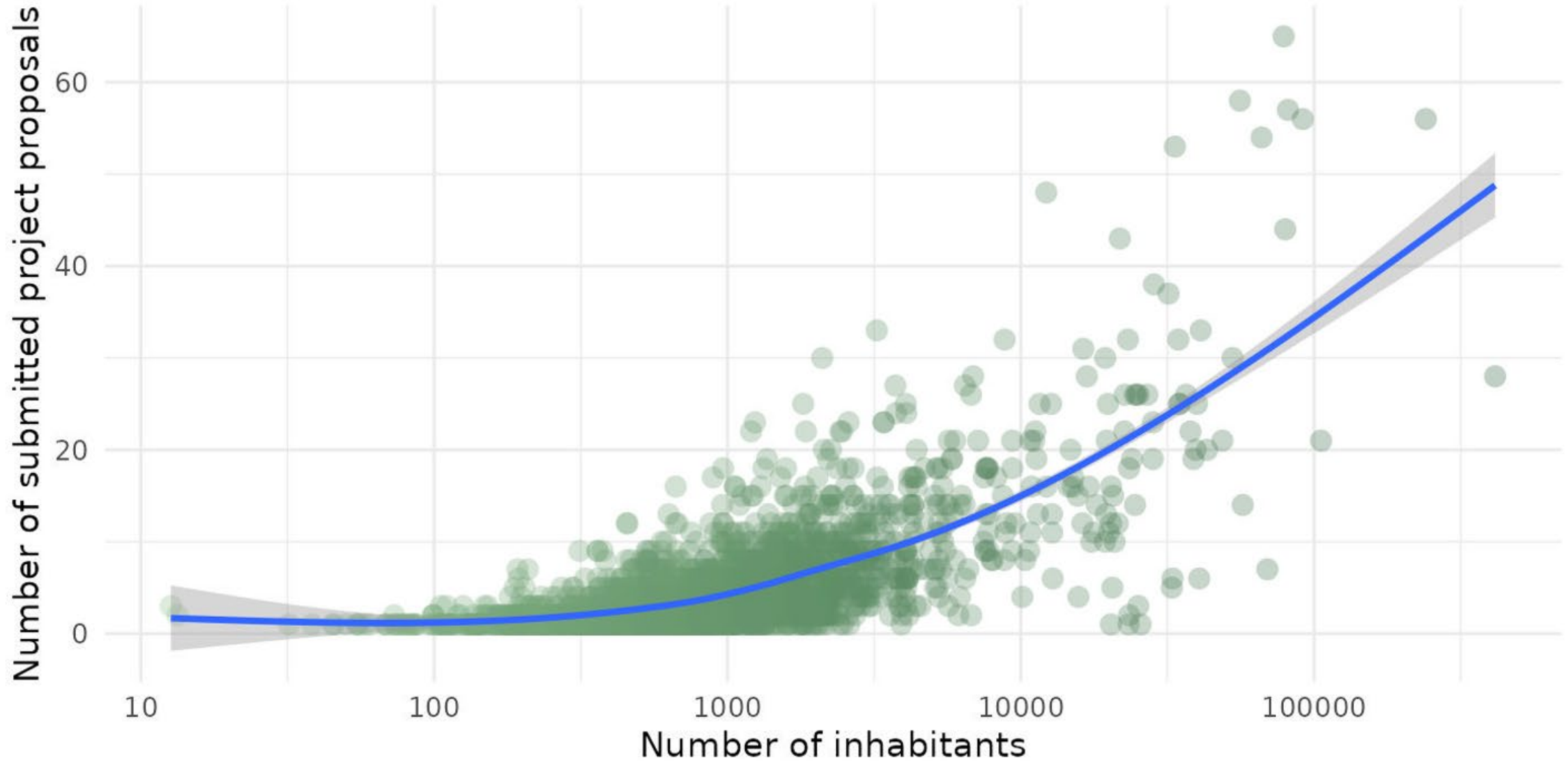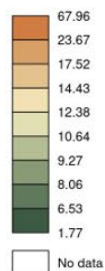
Source: own processing, data from ŠÚ SR, ITMS2014+, as of end of March 2023.

# Spatial distribution of the success and unemployment rates, submitted projects and awarded funds
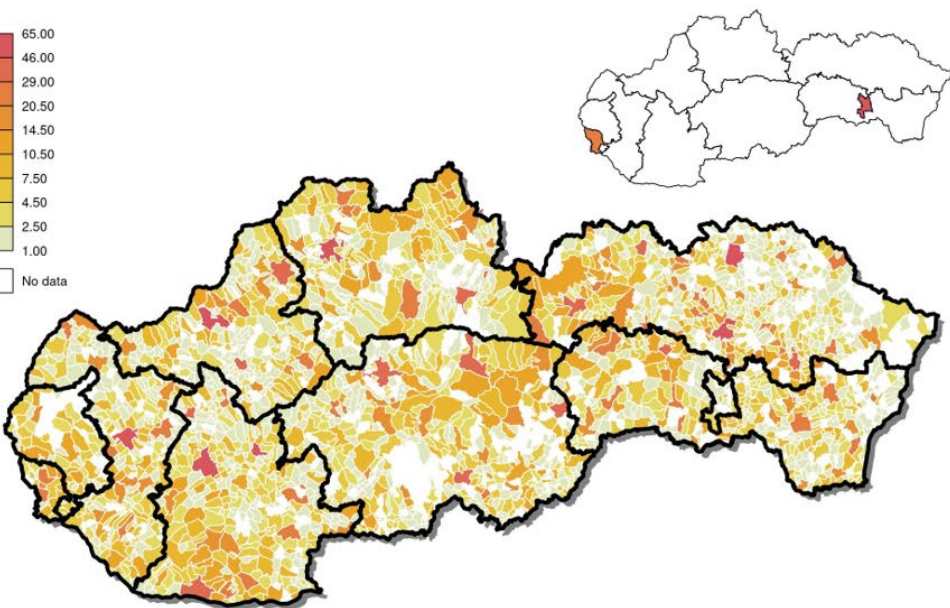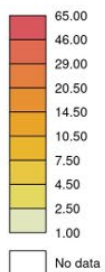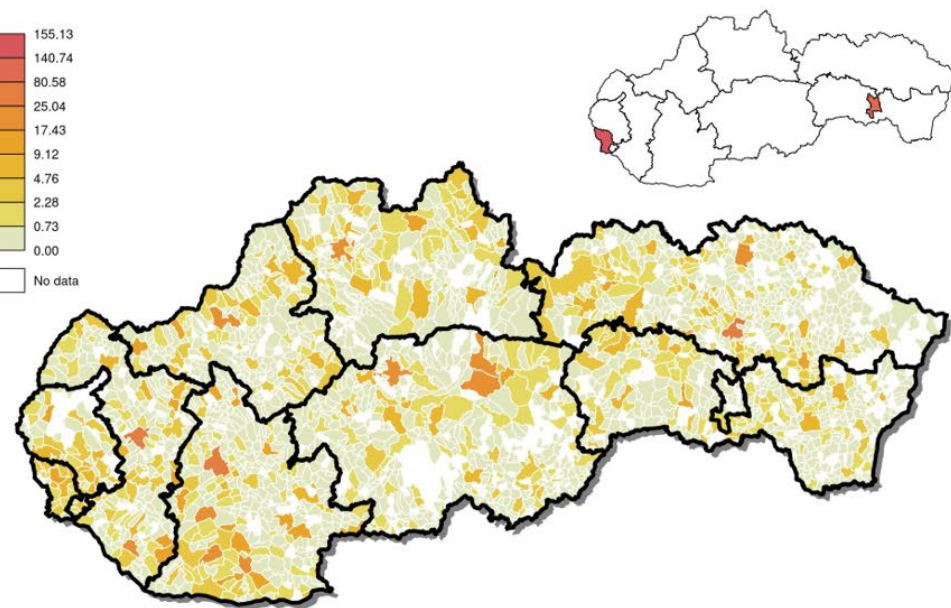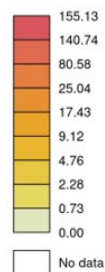


a) Success rate [%]

| | |
|---|---|
| | 100.00 |
| | 100.00 |
| | 100.00 |
| | 100.00 |
| | 76.61 |
| | 66.67 |
| | 55.56 |
| | 50.00 |
| | 33.33 |
| | 0.00 |
| | No data |

b) Unemployment rate [%]

| | |
|---|---|
| | 67.96 |
| | 23.67 |
| | 17.52 |
| | 14.43 |
| | 12.38 |
| | 10.64 |
| | 9.27 |
| | 8.06 |
| | 6.53 |
| | 1.77 |
| | No data |

c) Number of submitted projects

| | |
|---|---|
| | 65.00 |
| | 46.00 |
| | 29.00 |
| | 20.50 |
| | 14.50 |
| | 10.50 |
| | 7.50 |
| | 4.50 |
| | 2.50 |
| | 1.00 |
| | No data |

d) Awarded funds [million €]

| | |
|---|---|
| | 155.13 |
| | 140.74 |
| | 80.58 |
| | 25.04 |
| | 17.43 |
| | 9.12 |
| | 4.76 |
| | 2.28 |
| | 0.73 |
| | 0.00 |
| | No data |

|  | (1)<br>Baseline model | (2)<br>Extended model | (3)<br>Baseline model before 2020 election | (4)<br>Baseline model after 2020 election |
|---|---|---|---|---|
| *Project writing experience* | | | | |
| Number of submitted projects | -0.0137* | -0.0147* | 0.0188 | -0.0571*** |
| | | | | |
| *Demographics* | | | | |
| Size (number of inhabitants) | 5.55e-06 | 5.96e-06 | 1.23e-05 | 7.68e-06 |
| Unemployment rate | -1.823*** | -1.671*** | -0.522 | -1.789*** |
| Share of inhabitants (15-64 years) | -1.630 | -1.584 | -0.409 | -2.649** |
| | | | | |
| *Financials* | | | | |
| Debt per inhabitant | -0.000664* | -0.000819* | -0.00127** | -0.000512 |
| Investment intensity | | 0.166 | | |
| Current liquidity | | 1.82e-05 | | |
| Profit/loss per inhabitant | | -0.000121 | | |
| Surplus/deficit per inhabitant | | 0.000293 | | |
| Net assets per inhabitant | | 3.69e-05 | | |
| | | | | |
| *Other characteristics* | | | | |
| 2014-2020 ruling parties | -0.179* | -0.183* | -0.160 | -0.228** |
| Female representative | 0.129 | 0.137 | 0.0240 | 0.240** |
| Constant | 2.325*** | 2.209** | 0.791 | 2.582*** |
| | | | | |
| *Observations* | 2,353 | 2,334 | 1,766 | 2,209 |

*Note: Robust p-values in parentheses. Significance codes: *** p<0.001, ** p<0.01, * p<0.05.*

# Results

- **Number of submitted projects (–)**
  - Increase in submissions lowers the overall success rate
  - Main effect after 2020, that is, towards the end of the programming period
  - Slow in implementations of ESIF funds, a rush to spend the funds towards the end, with lower quality?

- **Unemployment rate (–)**
  - Cohesion policy objectives?

- **Debt per inhabitant (–)**
  - Less financially sound municipalities may have difficulties raising additional capital for ESIF funds

- **Political party alignment (–)**
  - On municipality level, the politics is different from parliamentary level
  - Mayoral candidates supported by several parties, including opponents on the parliamentary level
  - in 2018 municipal elections, many elected have not been affiliated with any political party

- **Female representatives (+)**
  - Particularly after 2020 election

# Concluding thoughts

- We provide an **ex-post overview** of the municipalities' success in securing EU funding in the 2014-2020 programming period.

- **Further analysis needed** to answer the question of targeting EU funds for **EU cohesion policy goals**.

- Significant negative effect of the **productive age population** after 2020 might relate to EU fund allocations in economically **less active areas.**

- **Challenges** faced by municipalities with **high debt** per inhabitant.

- Open questions to **effective leadership** and **management styles.**

- **Municipal politics** in Slovakia are complex, and the model doesn't explore political affiliation's impact in depth.

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