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## SMART GROWTH INDICATORS IN ROMANIA. FROM EXPERIMENTAL INNOVATION TO ROUTINE IMPLEMENTATION

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### Abstract:

This paper evaluates the effects of EU Structural Funds in Romania by comparing ten key indicators across the 2007-2013 (2015 - N+2) and 2014-2020 (2023 - N+3) programming periods. Using national and European data and ratio-based formulas, the study documents significant shifts: a noticeable decline in the digitalization ratio and start-up creation rate, contrasted by strong gains in fund-absorption speed and overall project volume. The findings highlight Romania's enhanced administrative capacity, yet they reveal persistent challenges in early-stage innovation, SME efficiency and urban-rural equity. The insights offer a data-driven foundation for policy optimization, guiding targeted interventions to promote digital uptake, entrepreneurial activity and balanced regional development.

**Keywords:** smart growth metrics, innovation, digital maturity shift, data-driven governance, administrative learning

**JEL:** O22, H43, R58

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## INTRODUCTION

Performance indicators serve as an essential element in the management and evaluation of European Union Funding programmes by transforming financial data into actionable insights. Recent studies highlight that well-designed indicators beside enabling real-time monitoring of fund disbursement and absorption rates, they also promote performance-based orientation, linking the allocation of resources to measurable outputs and outcomes. For example, ca, Santos and Conte (2024) demonstrate that accurate, stable indicators are essential for Cohesion Policy programmes to set realistic targets and track progress, while minimizing frequent revisions and weakening accountability. Likewise, Spilioti and Anastasiou (2024) show that complex analytical tools and spatial econometrics influence performance indicators to assess fund efficiency, reveal regional disparities and guide strategic reallocation of ESIF (European Structural and Investment Funds) resources. Using indicators in order to get legal and operational frameworks, policymakers can enhance transparency, institutional learning and governance quality, ensuring that EU funds generate the intended socio-economic impact and improve through evidence-based adjustments.

### 1. MOTIVATION

The objective of this analysis is to evaluate the effectiveness of European Union funding in Romania by systematically measuring and comparing key performance indicators across the 2007-2013

(2015 - N+2), and 2014-2020 (2023 - N+3) programming periods. In this way, the paper aims to identify which investment strategies, particularly in areas of innovation, technology and smart infrastructure, have delivered the greatest future-oriented impact, from digital transformation and start-up creation to regional cohesion and job growth. This objective has the role to inform policymakers how to optimize the allocation of EU resources and to also create a clear roadmap for using this financing source to promote sustainability and technology-driven development in Romania.

The indicators selected reflect Romania's greatest achievements, such as accelerated digital uptake and stronger per-capita job growth, and also the areas that still call for attention and improvement, such as uneven SME creation efficiency and remaining urban-rural funding gaps. Emphasizing these highs and lows, the framework may act as a guide for policymakers in regard to where EU funds have been most transformative and where there might be room for improvement and strategic adjustments.

## METHODOLOGY

The methodology combines quantitative data extraction from Romanian and EU administrative databases with standardized indicator-construction formulas designed for the research framework, in order to ensure consistency and comparability across periods. Project and financial figures from 2007-2013 and 2014-2020 were obtained from the European Commission's (EC) Cohesion Data portal and Romania's Ministry of Investments and European Projects (MIPE), ensuring consistency in definitions and timeframes. Each indicator was computed using explicit ratio or rate formulas, such as digital projects divided by total projects, or new jobs per million euros absorbed, and normalized to comparable units (percentages, per 1.000 inhabitants, or per 1 million euro) to facilitate cross-period analysis. To validate the results, the study relies on the theoretical frameworks and interpretation guidelines drawn from the literature discussed throughout this paper, ensuring that each finding is grounded in established analytical principles. The paper analyzes ten indicators from both theoretical and practical perspectives to ensure that the evolution captures conceptual accuracy and real-world applicability, and the theoretical framework also served as a guide and source of inspiration for the development of the indicators presented in this study.

## 1. THEORETICAL FRAMEWORK

Moreno-Enguix et al. (2012) emphasized that regional policies are designed to strengthen regional competitiveness and promote development, specifically, a key target of programmes financed through Structural Funds is to achieve higher levels of employment, production rate, and overall macroeconomics dynamics. Similarly, Florio et al. (2014) studied how support through the European Cohesion Policy contributed to rise in workforce numbers, particularly within private sectors and found a positive correlation between such support and employment expansion, especially in smaller industries with significant growth potential. These findings indicate that business assistance under the Cohesion Policy contributes significantly to job creation across various industries.

The digitalization ratio, which measures the proportion of funded projects that include digital components, offers important insights into the evolution of ICT (Information and Communication Technology) integration in public programs. Drawing on technology-adoption theory (Rogers, 2003) and e-government maturity models, a high digitalization ratio signifies that project designers and beneficiaries have embraced digital tools and processes significantly, reflecting advanced infrastructure and a strong drive toward innovation. A low ratio suggests that many projects remain fixed in traditional, paper-based workflows, revealing underdeveloped ICT capacity and slower organizational change.

Also, the start-up creation rate captures entrepreneurial intensity by normalizing venture formation to program scale (Reynolds et al., 2005) and reflects shifts in risk-taking across funding portfolios. A high rate reveals a risk-finance ecosystem in which a large share of funded projects creates new businesses, and a low rate indicates that fewer projects translate into start-ups, perhaps because programs favor larger infrastructure initiatives over new enterprises creation.

The absorption rate accelerator indicator compares change in absorption speed between two funding periods, (2007-2013 vs. 2014-2020), inspired from the absorptive-capacity model suggested on behalf of Cohen and Levinthal (1990) and assessments of administrative reform (Easterly, 2009). A strong acceleration suggests that institutions have simplified procedures and improved project readiness, thereby unlocking funds in a more efficient manner. If acceleration is weak or negative, it translates into persistent procedural blockages and limited capacity-building efforts.

Measuring the project growth factor, as the ratio of total projects in one period to those in a previous period, reflects an entity's ability to scale its program delivery, as described by organizational learning curves (Argote and Eppele, 1990) and utilization-focused evaluation (Patton, 2008). A growth factor above one demonstrates effective expansion of capacity to manage an increasing portfolio of projects, and a factor below one means stagnation or strategic changes that limit project numbers.

The urban-rural equity ratio, which divides per-capita funding in urban areas by per-capita funding in rural areas, describes regional equity concepts (Rodríguez-Pose, 2017). A ratio above one indicates an urban inclination in resource allocation, while a ratio below one means a pro-rural focus, suggesting that less-developed regions are receiving relatively greater support on a per-person basis.

In EU program finance, the co-financing ratio indicates percentage of domestic contributions with respect to overall absorbed financing, an aspect that symbolizes principles of national "ownership" and risk-sharing (De Rynck and Kazepov, 2003). A high co-financing rate signals a strong domestic commitment and balanced partnership between national budgets and EU grants, whereas a low rate shows greater reliance on EU funds, possibly reflecting tighter national fiscal space or strategic prioritization of external support.

Job creation intensity per capita, calculated as new jobs per thousand inhabitants serves as an employment-impact multiplier in line with growth-theory (Blanchard and Katz, 1992). A high intensity demonstrates that projects effectively stimulate local labor markets, generating many jobs relative to population size. A low intensity suggests that investments are less transformative for employment, perhaps due to capital-intensive project designs or structural unemployment challenges.

The job creation ratio reflects new jobs generated per one million euros absorbed and functions as a cost-effectiveness metric in public spending (Rosenbaum, 1998). When this ratio is high, it reveals that each million euros of investment means substantial employment gains. A lower ratio may reflect an emphasis on sectors with lower direct labor intensity, such as heavy infrastructure or investments in other fields.

The SME creation efficiency index, calculated as the number of new SMEs per one million euros absorbed, means the input-output efficiency analyses and capital productivity measures in small-business finance. This metric also aligns with resource-based views of firm growth, where access to available capital influences SMEs creation and signals market entry conditions (Beck, Demirgüç-Kunt and Maksimovic, 2005). When this index is high, it indicates that each tranche of funding has

been well-targeted, generating a substantial entrepreneurial response and an expansion in the number of new firms. A low index, in contrast, may point to demanding administrative costs, structural market barriers for start-ups or support schemes that fail to reach their intended beneficiaries.

Finally, from a theoretical point of view, SME creation elasticity adapts to the concept of output elasticity from production theory to measure how responsive firm entry is to changes in available funding. Carree and Thurik (2003) first applied a similar framework to entrepreneurship, showing that the percentage of change in new firm formations could be modeled as an elasticity with respect to financial and institutional inputs, which this approach was refined by empirically estimating how regional start-rates responded, in elastic terms, to variations in public funding and policy support.

## 2. PRACTICAL APPROACH

In this practical section, the paper presents a smart evaluation concerning advanced indices for EU fund analysis, where the findings draw upon the theoretical frameworks outlined earlier and also incorporate a personal interpretation of data. By integrating exact indicator measurements with contextual analysis, this section reveals key trends and offers strategic guidance for Romania's optimal absorption of EU funding.

The digitalization ratio, computed as digital projects ÷ total projects × 100, fell from 42,39% in 2007-2013 to 27,69% in 2014-2020. During the first interval, 42.39 % of all financed initiatives featured digital components; in the later cycle, however, only 27.69 % did. This decline does not mean fewer digital efforts, on the contrary, as the absolute number of digital projects grew, but reflects how basic digital infrastructure and e-government platforms became widespread. Early on, many public services still relied on paper or in-person counters, driving a higher share of explicitly digitalization projects. By 2014-2020, digitalization was already acknowledged as a standard in operations, so its relative prominence naturally diminished.

**Table 1. Digitalization Ratio**

| Allocation period | No. digitalization projects | No. projects funded | Digitalization ratio (%) |
|-------------------|-----------------------------|---------------------|--------------------------|
| <b>2007-2013</b>  | 1.176                       | 49.854              | <b>42,39</b>             |
| <b>2014-2020</b>  | 3.521                       | 97.479              | <b>27,69</b>             |

Source: authors' analysis based on MIPE

Start-up creation rate fell from 493,60% in 2007-2013 to 10,06% in 2014-2020. In the first period, this corresponds to roughly 2 start-ups per one thousand EU-funded initiatives ( $1.000 \div 493,6 = 2,03$ ), whereas in the second period it translates to nearly 100 start-ups per one thousand projects ( $1.000 \div 10,06 = 99,4$ ). Although the absolute no. of start-ups grew substantially, the relative intensity concerning business formation declined, as the overall project portfolio might have expanded at an even faster pace, signaling a shift toward broader funding themes and potentially less emphasis on early-stage entrepreneurship.

**Table 2. Start-up Creation Rate**

| Allocation period | No. of new Start-ups | No. projects funded | Start-up Creation Rate (%) |
|-------------------|----------------------|---------------------|----------------------------|
| <b>2007-2013</b>  | 101                  | 49.854              | <b>493,60</b>              |
| <b>2014-2020</b>  | 9.685                | 97.479              | <b>10,06</b>               |

Source: authors' analysis based on MIPE

Absorption rate acceleration quantifies the improvement in how efficient EU funds were utilized between the two programming periods. In 2007-2013, Romania's absorption rate stood at 66,30%, rising to 90,60% in 2014-2020. The absolute increase of 24,30 percentage points (90,60% - 66,30%) represents a 26,82% acceleration once normalized in the later period ( $24,30 \div 90,60 = 0,2682 \times 100$ ). In practical terms, this means that Romania's administrative systems and project pipelines became more agile: procedural reforms, improved grant-preparation support and easier and more organized workflows together enabled EU funds to be drawn down over a quarter faster in the second cycle, reflecting a significant gain in operational efficiency.

**Table 3. Absorption rate acceleration**

| Allocation period | Absorption rate (%) | Absorption rate acceleration (%) |
|-------------------|---------------------|----------------------------------|
| <b>2007-2013</b>  | 66,30               | <b>26,82</b>                     |
| <b>2014-2020</b>  | 90,60               |                                  |

Source: authors' analysis based on MIPE

The project growth factor is determined by the ratio of the overall count of projects financed in 2014-2020 (97.479) by the total from 2007-2013 (49.854), resulting in 1,96. In other words, Romania supported almost twice as many initiatives in the later period compared to the earlier one. The near-doubling underscores a significant expansion in program delivery and reflects significant improvements in administrative capacity, institutional coordination and stakeholder engagement. By quantifying proportional growth ( $97.479 \div 49.854$ ), it becomes immediately clear how the project pipeline has scaled up between funding cycles. Moreover, this rise illustrates Romania's growing interest in identifying, approving and managing a more extended number of EU-funded projects, signaling a maturing governance framework ready to sustain even more ambitious development objectives.

**Table 4. Project Growth Factor**

| Allocation period | No. projects funded | Project growth factor |
|-------------------|---------------------|-----------------------|
| <b>2007-2013</b>  | 49.854              | <b>1,96</b>           |
| <b>2014-2020</b>  | 97.479              |                       |

Source: authors' analysis based on MIPE

Next, the urban-rural equity ratio declined from 39,17% in 2007-2013 to 24,79% in 2014-2020, indicating that rural areas received substantially more funding per capita than urban ones. A value below one signifies a pro-rural emphasis, and the further drop highlights an even greater concentration of resources toward less-developed communities over time. Indeed, immediately following Romania's EU accession, there was an urgent need to upgrade infrastructure and establish basic services in the country's less-developed regions, which likely influenced the stronger pro-rural funding emphasis in those early programming periods. Finally, this metric is meant to assess the fairness of allocation and to guide policymakers in refining regional balancing strategies, ensuring inclusive growth and targeted support where it is most needed.

**Table 5. Urban-Rural Equity Ratio**

| Allocation period | Absorbed funds in urban zone (billion €) | No. Urban population | Absorbed funds in rural zone (billion €) | No. Rural population | Urban Rural equity ratio (%) |
|-------------------|--|----------------------|--|----------------------|------------------------------|
| <b>2007-2013</b>  | 3.70                                     | 10.772.678           | 8.10                                     | 9.236.964            | 39,17                        |
| <b>2014-2020</b>  | 2.65                                     | 10.458.061           | 9.50                                     | 8.917.774            | 24,79                        |

Source: authors' analysis based on MIPE

The co-financing ratio is computed as the total national co-financing divided by total absorbed funds. For 2007-2013, €5.60 billions of national co-financing against €18.30 billion absorbed generates a



ratio of 31.60%. In 2014-2020, €5.63 billions of national co-financing against €27.60 billion absorbed produces a ratio of 20,40%. Consequently, national sources accounted for 30,60% of absorbed funds in the first programming period but fell to 20,40% in the second. This downward shift shows Romania's growing reliance on EU financing in 2014-2020, reflecting tighter national budgets and a strategic focus on using external grants for sustained infrastructure development. Also, another factor could be the introduction of simplified cost options and flat-rate co-financing rules at the EU level, which reduced the obligation for detailed national budget contributions and thus the reported domestic share.

**Table 6. Co-Financing Ratio**

| Allocation period | Total absorbed funds<br>(billion €) | Total national co-<br>financing (billion €) | Co-financing<br>ratio (%) |
|-------------------|-------------------------------------|---|---------------------------|
| <b>2007-2013</b>  | 18.30                               | 5.60  | <b>30,60</b>              |
| <b>2014-2020</b>  | 27.60                               | 5.63  | <b>20,40</b>              |

Source: authors' analysis based on MIPE

The job creation intensity per capita climbed from 10,3 in 2007-2013 to 12,6 in the second programming period, indicating EU-funded initiatives created 10.3 employment opportunities for 1,000 inhabitants during the first allocation and 12.6 employment opportunities per 1,000 inhabitants in the subsequent period. By relating total jobs created to the population size, this metric facilitates direct comparison across funding cycles. The increase from 10,3 to 12,6 highlights a stronger per-capita employment impact, demonstrating that later funding periods were increasingly effective at converting investments into local job opportunities. Another factor we may consider is that many Romanians who had migrated to work in other European countries between 2007 and 2013 may have been encouraged to return by the visible domestic progress and infrastructural investments, further enlarging the local labor pool.

**Table 7. Job Creation Intensity per Capita**

| Allocation period | No. of new jobs created | Total population | Job creation intensity per capita (/1000 inhabitants) |
|-------------------|-------------------------|------------------|---|
| <b>2007-2013</b>  | 198.765                 | 19.375.835       | <b>10,3</b>   |
| <b>2014-2020</b>  | 247.312                 | 19.592.933       | <b>12,6</b>   |

Source: authors' analysis based on MIPE

While job creation intensity / capita measures the quantity of jobs generated per 1.000 inhabitants, highlighting the impact of investment on local employment levels, the job creation ratio quantifies jobs created per 1 million euro spent, emphasizing the cost-effectiveness of EU funding in generating employment.

The job creation ratio declined from 10,86% in 2007-2013 to 8,96% in 2014-2020, meaning that each 1 million euros invested generated 10.86 positions per 1,000 inhabitants, compared with just 8.96 positions per 1,000 inhabitants in the second period. This metric measures funding-driven employment performance, with a higher value indicating more jobs per euro spent. The drop suggests that, despite larger overall budgets, funding in 2014-2020 increasingly supported capital-intensive or high-tech projects, which created fewer direct positions for each million euros invested.

**Table 8. Job Creation Ratio**

| Allocation period | No. new jobs created | Total absorbed funds (billion €) | Job creation ratio for 1 million Euro (%) |
|-------------------|----------------------|----------------------------------|---|
| <b>2007-2013</b>  | 198.765              | 18.30                            | <b>10,86</b>                              |
| <b>2014-2020</b>  | 247.312              | 27.60                            | <b>8,96</b>                               |

Source: authors' analysis based on MIPE

The SME creation efficiency index rose up slightly from 1,85 during the first allocation period to 1,86 during the second allocation period, indicating that each 1 million euro absorbed funded approximately 1,85, respectively 1,86 new SMEs. This metric reflects return on EU investment in creating enterprises, with larger values indicating greater effectiveness in translating into new businesses. The stability of these figures, despite a consistent increase in total funding, demonstrates that each additional 1 million euros continued to create an unchanged number of SMEs, resulting in a consistent support efficiency across both programming periods.

**Table 9. SME Creation Efficiency Index**

| Allocation period | No. of new SMEs | Total absorbed funds (billion €) | SME creation efficiency index |
|-------------------|-----------------|----------------------------------|-------------------------------|
| <b>2007-2013</b>  | 9.873           | 18.30                            | <b>1,85</b>                   |
| <b>2014-2020</b>  | 14.862          | 27.60                            | <b>1,86</b>                   |

Source: authors' analysis based on MIPE

The SME creation elasticity measures how sensitively the number of new firms respond, in percentage terms, to a 1% change in absorbed funding. A coefficient of 0,99 means that a 1% increase in funds is associated with an almost equivalent 0,99% rise in new firm formations, demonstrating that investment levels drive almost proportional gains in entrepreneurial activity. This near-one ratio underscores the efficient use of resources and suggests strong potential for amplified entrepreneurial growth.

**Table 10. SME Creation Efficiency Index**

| Allocation period | Total new SMEs | Total absorbed funds (billion €) | SME creation elasticity |
|-------------------|----------------|----------------------------------|-------------------------|
| <b>2007-2013</b>  | 9.873          | 18.30                            | 0,99                    |
| <b>2014-2020</b>  | 14.862         | 27.60                            |                         |

Source: authors' analysis based on MIPE

## CONCLUSIONS AND RECOMMENDATIONS

The comparative analysis of the 2007-2013 and 2014-2020 funding cycles show that Romania has both scaled up its EU fund-management capabilities and encountered uneven impacts across strategic domains. The digitalization ratio dropped from 42.4% in 2007-2013 to 27.7% in 2014-2020, demonstrates the evolution of ICT integration from experimental innovation to routine implementation, meaning fewer projects had digital components even as overall infrastructure has matured, and also, once digital processes become a standard practice, fewer projects consider them as innovations. This shift may also suggest that early adopters have created the way for a baseline level of digital maturity across sectors, meaning future funding calls must now push beyond basic digitalization toward advanced applications, such as AI integration, data analytics platforms and cross-border e-services. Similarly, the start-up creation rate dropped from 493 start-ups per 1,000 projects in 2007-2013 to just 10 per 1,000 in 2014-2020, suggesting a shift from entrepreneurial activities rooted in individual opportunity to larger initiatives, aligning with the idea that a wide portfolio reduces the impact of early-stage risk. This pattern highlights the need for dedicated mechanisms, like rapid-response innovation vouchers or public-private accelerator partnerships, in order to rebalance the sector's capital-heavy orientation and nurturing the forthcoming generation of technology-led, high-growth businesses.

At the same time, Romania's administrative and absorptive capacities have strengthened significantly. The project growth factor rose from 1.00 in 2007-2013 to 1.96 in 2014-2020, and the absorption rate acceleration improved by 26.82%, demonstrating that administrative reforms enabled faster absorption of funds in the later period and also illustrating a learning-curve effect: procedural streamlining, better inter-institutional coordination and enhanced digital governance tools have enabled faster, larger-scale use of EU resources. Yet, while the speed of disbursement has improved, the quality of project design and long-term sustainability varies widely across regions and sectors, marking the residual capacity gaps in grant management and impact evaluation.

Job-creation intensity per capita increased from 10.3 jobs per 1,000 inhabitants in 2007-2013 to 12.6 in 2014-2020, even though job-creation ratio (jobs per 1 million euro) fell from 10.9 to 9.0, signaling a move toward more capital-intensive, technology-driven projects that generate fewer direct positions per euro invested. Finally, the urban-rural equity ratio improved from 39,17% in 2007-2013 to 24,79% in 2014-2020, showing greater focus on rural areas, but highlighting the ongoing need for balanced regional development.

To reach its full potential and ensure the most efficient use of European funds, Romania must embrace innovative initiatives. One such proposal is an AI-assisted project writing tool that automates budget alignment, compliance verification and strategic prioritization by learning from the past submissions and real-time scoring logic. The integration with national portals such as MySMIS, this tool would boost application quality, accelerate approval timelines and offer broader access for smaller organizations. Integrating AI-driven support into the funding process, Romania can raise success rates and reinforce its administrative capacity to absorb and utilize EU resources with maximum impact.

Also, establishing a centralized opportunity-identification platform that refers to building an interactive dashboard that integrates EU fund indicators with socio-economic and sectoral data to highlight emerging gaps and clusters of high impact. By acknowledging where digitalization, job creation or SME formation remain low, policymakers and applicants can target calls and proposals to the most promising regions and sectors. Additionally, to ensure that the insights presented translate into actionable strategies, Romania should first automate the calculation and update all the supplementary indicators through dedicated scripts that pull in new project and financial data in real time, indicating any anomalies immediately. These metrics should then be geospatially mapped at the country level, revealing the most efficient areas and underserved areas that demand targeted intervention. Next, by correlating EU-fund indicators with state-budget allocations, private co-investments and multilateral loans, policymakers can understand how different funding progresses and optimize the mix of financial instruments. Complementing these quantitative efforts to specialized policy analyses, layering indicator dashboards over qualitative reviews of legal frameworks, governance capacity and market dynamics, will set the ground for decisions in a rich, context-driven evidence base.

To anticipate the effects of alternative allocations, scenario-based simulations, by using system-dynamics or agent-based models, policymakers can project how reallocation of resources between infrastructure, SME support and rural innovation hubs might influence key outcomes. Finally, promoting continuous learning through performance hubs, where regional authorities, management authority, fund managers and experts convene to review dashboards, share best practices and refine methodologies, will keep the evaluation framework aligned with both theoretical rigor and real-world lessons and examples.



## REFERENCES

- Argote, L., & Epple, D. (1990). Learning curves in manufacturing. *Science*, 247(4945), 920-924. <https://doi.org/10.1126/science.247.4945.920>
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2005). Financial and legal constraints to growth: Does firm size matter? *Journal of Finance*, 60(1), 137-177. <https://doi.org/10.1111/j.1540-6261.2005.00727.x>
- Blanchard, O., & Katz, L. (1992). Regional evolutions. *Brookings Papers on Economic Activity*, 1992(1), 1-75. <https://doi.org/10.2307/2534556>
- Carree, M. A., & Thurik, A. R. (2003). The impact of entrepreneurship on economic growth. In Z. J. Acs & D. B. Audretsch (Eds.), *Handbook of entrepreneurship research* (pp. 437-471). Dordrecht: Kluwer Academic Publishers.
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152. <https://doi.org/10.2307/2393553>
- De Rynck, S., & Kazepov, Y. (2003). Participatory governance in multi-level contexts: Concepts and experience. *International Journal of Urban and Regional Research*, 27(3), 503-522. <https://doi.org/10.1111/1468-2427.00460>
- Easterly, W. (2009). Can the West save Africa? *Journal of Economic Literature*, 47(2), 373-447. <https://doi.org/10.1257/jel.47.2.373>
- Florio, M., & Moretti, L. (2014). The effect of business support on employment in manufacturing: Evidence from the European Union structural funds in Germany, Italy and Spain. *European Planning Studies*, 22(9), 1802-1823. <https://ideas.repec.org/a/taf/eurpls/v22y2014i9p1802-1823>
- Fritsch, M., & Mueller, P. (2008). The impact of new businesses on regional employment: An analysis for West Germany. *Regional Studies*, 42(6), 707-725. <https://aisberg.unibg.it/handle/10446/201302>
- Moreno-Enguix, M. D. R., Gomez-Garcia, J., & Gomez-Gallego, J. C. (2012). An impact analysis of the European Structural Funds on the variation of the rate of employment and productivity in Objective 1 regions. *European Planning Studies*, 20(4), 685-705. <https://doi.org/10.1080/09654313.2012.665039>
- Patton, M. Q. (2008). *Utilization-focused evaluation* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., López-García, P., & Chin, N. (2005). Global Entrepreneurship Monitor: Data collection design and implementation 1998-2003. *Small Business Economics*, 24(3), 205-231. <https://doi.org/10.1007/s11187-005-1980-1>
- Rodríguez-Pose, A. (2017). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society*, 10(1), 189-209. <https://doi.org/10.1093/cjres/rsx024>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York: Free Press.
- Rosenbaum, P. R. (1998). *Observational studies* (2nd ed.). New York: Springer. <https://doi.org/10.1007/978-1-4757-2917-7>
- Spilioti, N., & Anastasiou, A. (2024). European Structural and Investment Funds (ESIFs) and regional development across the European Union (EU). *Journal of Risk and Financial Management*, 17(6), 228. <https://doi.org/10.3390/jrfm17060228>