

Economic Development and Innovation at Local Level – Local Business Environment Index (LBEI)

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Abstract: *This paper² presents a novel metric for assessing economic activity at local level: Local Business Environment Index (LBEI). In the development of this metric system we explore a large set of variables that are disaggregated at municipal level for the case study of Romania. Following the existing literature on the different drivers of economic development, we propose four major axes of assessment: entrepreneurship, innovation, investment financing, and public authorities' support. We present the overall ranking of the level of attractiveness of the local business environment in the Romanian municipalities, among which the highest scores belong to cities of various sizes: Bucharest, Cluj-Napoca, Timișoara, Alba-Iulia and Sibiu. Each municipality has a different distribution of specific strengths. We look in-depth in the final section of this paper at the sub-index of Innovation, dominated by Timișoara or Cluj, rather than the capital city.*

Keywords: *Innovation, Entrepreneurship, Economic Development, Romania*

Introduction

As the world is increasingly worried about both the level and the sustainability of economic development, the factors underpinning this process must be better understood. We have long focused on the overall national rates of growth, and paid too little attention to growing subnational differences. A recent study (Cristea et al 2017) shows how dynamic some of the Romanian municipalities are—both from an economic and a demographic perspective. Much like the Hanseatic League of the Middle Ages, or the City States of the Renaissance, contemporary metropolises in Europe are responsible for the bulk of the continental economic growth via trade and services. As was aptly recently summarised: „Urbanists say that the 19th Century was a century of empires; the 20th Century was a century of nation states; and the 21st century will be the century of cities” (Silva 2018). At global level, 50% of the population is urban, 70% of energy consumption is centred in cities, and it is also cities that are responsible for 80% of the world's GDP.

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We nevertheless face a methodological conundrum in the statistical and institutional assessments: what is the territorial unit of measurement for growth and development? Do we look at metropolises only, or do we account for secondary cities too? Do we assess the economic activity of the city, or that of its larger urban zone, or region of origin? Do we account for NUTSII or NUTSIII regional units? To what degree are the local authorities of a city or a region in charge of developmental policies and investments? To answer some, or any of these questions, we must account for country-level specificities of territorial organisation. In a recent compilation effort, the European Committee of the Regions (CoR) developed an overview of levels of institutional and fiscal decentralisation in all EU countries, (potential) candidate and Eastern Partnership countries in the online portal „Divisions of Power”. Browsing through the Division of Power database is enough to see the large extent to which EU member states differ in their territorial organisation. While efforts are increasingly made to create a certain convergence in the division of powers in the EU, with a focus on increasing the competences of local governments (LGs), the way a local or regional authority fits within the larger setting of the states is nevertheless an issue of historical institutional lineage.

We propose here that for the case study of Romania, a relevant unit of measurement is that of municipal cities that are also the administrative centres of their counties. Usually, these are also the most developed cities in each county. Accounting for urban-driven economic growth, we therefore develop a pilot study of its drivers at local level. In doing so, we contribute not only to the academic literature on economic development, but also (we hope) to the conceptualisation of institutional architecture of public administrations. By understanding the degree to which economic growth ignites at local level, we obtain a greater perspective on what it is that can be done to nurture it.

Much in the same way as many of the existent tools for evaluating the business environment at national level (e.g. Global Competitiveness Report (WEF), Doing Business Index (WB), Country Risk Report (OECD)), we propose the LBEI as a tool for subnational assessments. With the notable exception of the subnational and regional Doing Business reports of the World Bank, few comparative tools have focused specifically on the subnational business environment. Gary Bland and Peter Vaz have developed the first meta-analysis of existent subnational business environment indexes, and observe that only „a few of them have been applied repeatedly as intended by index proponents, but nearly half of the indices have been discontinued” (2017:1). Only two EU member states appear to have subnational diagnostic tools for economic governance or business environment: Bulgaria and Croatia (see Bland and Vaz 2017:6). In contrast to these existent measurements, we do not build our methodological approach on international indexes, nor do we use business surveys. We refer to hard data in order to develop a comparative diagnostic in the specific case study of Romania, and our focus is more on within-country comparisons, rather than across-cases comparisons. The fundamental premise of our study is that while the distinction between the capital city and secondary cities is a marked tendency, there are a number of comparative advantages of specialisation in the secondary cities that often make them prone to

developing a better business environment for certain businesses or sectors.

This paper presents a novel metric for assessing economic activity at local level: Local Business Environment Index (LBEI). In the development of this metric system we explore a large set of variables that are disaggregated at municipal level. Following trends in the existent literature on the different drivers of economic development, we propose four major axes of assessment: entrepreneurship, innovation, investment financing, and public authorities' support. If we derive the first three from the classic economic literature (Schumpeter 1934), we add the later pillar on the basis of recent empirical studies in the context of EU convergence at subnational level (Volintiru 2017).

Literature Review: Entrepreneurship as a Driver of Economic Development

The way in which entrepreneurship stimulates economic growth has been analysed from many perspectives, particularly in terms of contributions to innovation, and stimulating competition and lower prices. One of the most important researchers in the field of competitiveness, Michel Porter, considers that entrepreneurship is the basis of the (competitive) national advantage (Porter, 1990).

It has further been noticed that, since the 1970s and 1990s, the emergence of small businesses and entrepreneurship were brought back to life – in essence, economic activity shifted from large companies to smaller ones – which often included outsourcing the various processes / activities from large corporations. As Carlsson (1999) shows, this fact is best seen in the United States economy, in terms of the share of employees of Fortune TOP500 companies in relation to total employees. It decreased from about 20% of total employees in 1970 to 8.5% in 1996.

According to Acs and Audrestsch (1992), entrepreneurs, as well as small firms in general are an important driver for growth, development and innovation, contributing to job creation and positive industry dynamics. They also argue that an increase in the share of small firms can gradually result in companies being less prone to exports. Also, the same authors consider that entrepreneurship leads to a qualitative change in demand for capital goods and advisory services, in addition to the diversification of supply and, finally, the methods and objectives of R & D activities. Another study, conducted by Audrestsch and Thurik (2000) for the period 1984-1994 in 23-member countries of the OECD, shows that an increase in the entrepreneurial rate (i.e. number of business owners per employee) generates a lower unemployment rate.

Thurik and Wennekers (2004) assert that the relationship between economic growth and entrepreneurship is bi-directional. On the one hand, entrepreneurship stimulates economic growth through a “Schumpeter” effect in developed countries; on the other hand, the low rates of economic growth in some states could stimulate people towards self-employment, especially in countries with less generous social protection systems. According to Ebner (2006), Schumpeter's theory „explores economic development in the institutional setting of modern capitalism, perceiving entrepreneurship as its endogenous developmental force, which is embedded in a variety of institutional forms that shape the pattern of capitalist evolution”.

Moreover, at the centre of Schumpeter's theory on economic development is the fact that entrepreneurs have the role of generating innovations to become increasingly competitive. Thus, in the innovation process firms are attracting finance through the banking system (loans). Subsequently, by taking credit and assuming the entrepreneurial risk, innovations created by companies are capitalized in new goods and production methods which generate entrepreneurial profits.

The innovation process is considered one of the most critical issues in understanding economic growth. In essence, economic growth could be attributed to the three main factors:

- an increase of production factors,
- an improvement of resource efficiency,
- an improvement of knowledge and innovation rate.

Thus, considering the full employment of resources and efficient allocation as given, economic growth is therefore driven by the accumulation of knowledge and innovation. At the same time, the innovation process is, usually, shaped by a function of (1), the incentives (i.e. institutions) that stimulate innovation, and (2), access to knowledge. Also, innovation implies an extension of the knowledge stock that could/should be economically used.

Existing literature extensively covers economic development, both the drivers and implications. There are different metrics and conceptualizations on what it is economic development. One of the oldest approaches is to measure economic development based on growth dynamics, a quantitative approach reflected in frequently used indicators such as GDP. While growth is undoubtedly part of the development story, the last decades have supplied a rich body of literature on varied approaches in political economy accounting for institutional or democratic quality. The modernization theory that dominated many of the 90s scholarly debates linked economic development closely to democracy and neoliberalism. Beginning with the early 2000's up until present day, economic development is frequently discussed from a sustainability perspective. Growth is no longer seen as a goal in and of itself if it does not account for environmental or social issues.

This article does not set out to add to the vast conceptual lineage of economic development, but rather to apply existing models to the subnational dimension. We do however subscribe to a larger conceptualisation of economic development. For example, recent studies have showed the clear causal link between the quality of governance and entrepreneurial activity at regional level in the European Union (Nistotskaya et al 2015). The European Quality of Government Index which is at its third edition shows a clear correlation between institutional performance and economic development measured as GDP.

There is a series of conditions through which SMEs can contribute to economic development, amongst which access to financing solutions is paramount (see Beck and Demircuc-Kunt 2006, Beck et al 2008). This is one of the reasons for which our Index

accounts too for local investment financing. Further, there is a series of studies that point to the effects of local concentration and general quality of the environment and broader multiplication effects (Rosenberg 1997, Porter 2000, Howells 2005). This shows the relevance of subnational measurements. Finally, we focus on the specific case study of the economic impact of regional innovation (Howells 2005, Cooke and Lazzarretti 2008, Wright et al 2008, Youtie and Shapira 2008) and smart specialization (McCann and Ortega-Argiles 2015, Capello and Kroll 2016) —elements that constitute one of the main pillars of our subnational index of the quality of the business environment.

In terms of the elements that create a propitious business environment at a local level, as mentioned above, we can distinguish both economic factors (e.g. concentration) (see for example Porter 2000), as well as institutional or political factors (e.g. quality of governance) (see for example Nistotskaya et al 2015). As such, both our theoretical assumptions, as well as the empirical evidence from existing studies inform the composition of the index we present here.

In post-communist societies, entrepreneurship activities do not have the same iteration background (or force of habit) as in Western Europe. The centrally planned economy of the previous regime has left an inheritance of various norms, practices and expectations that can sometimes be in conflict with the competitive free market. As showed in behavioural studies on Romania and other European countries, norms stick and it takes a long period of time to change them (see most recently D'Attoma et al 2017, Todor 2018, Volintiru 2018). In this context, an increasing importance for encouraging entrepreneurship (as a driver of economic development) is business education. Not incidentally, we used the presence of universities as a dummy variable for a preliminary assessment of the unit of measurement for the present study. It is in university cities and through the faculties majoring in business, that the majority of support programmes for entrepreneurs are currently implemented in Romania. A growing trend of private suppliers of training in Romania can be seen over the past decade, but in terms of the number of beneficiaries, the ratio of private versus public suppliers (i.e. universities) of training programmes is heavily skewed towards the latter.


Local Business Environment Index (LBEI): Methodological Aspects and Results

The theoretical framework behind our analysis consists of the pillars identified by the Austrian economist Joseph Alois Schumpeter to be essential in the capitalist development model, namely:

- (1) local entrepreneurship (E);**
- (2) innovation (I);**
- (3) investment financing (L).**

As we mention above, these three layers embedded in local policies and economic ecosystems, encourage market competition, new products and jobs, economic development and capital accumulation. Entrepreneurs support innovation through new ideas and, at a local level, risk-taking creditors finance the implementation.

Table no. 1: The four pillars of entrepreneurship

Local entrepreneurship (E)	Innovation (I)	Investment financing (C)	Local Public Support (LPS)
40%	20%	30%	10%
Number of active companies with Romanian capital (15%)	Number of employees from high tech sectors (10%) ³	Loans to non-financial companies (Romanian Lei and foreign currencies) (5%)	Capital expenditures (5%)
Number of active companies with foreign capital (10%)	Number of students (10%)	Foreign Direct Investments (15%)	EU funds expenditures (5%)
SRL-D companies (EU-funded start-ups) (15%)			
Data sources			
National Institute of Statistics, Registry of Commerce, Listaфирme.ro	Integrated Educational Registry, National Institute of Statistics	National Bank of Romania	European Funds Ministry, World Bank
Local Business Environment Index			
Very low		High	
0	25%	50%	75% 100%
			

Source: National Institute of Statistics, Registry of Commerce, Listaфирme.ro, Integrated Educational Registry, National Institute of Statistics, National Bank of Romania, European Funds Ministry, and the World Bank.

We added one more pillar to these existing three, represented by **(4) support provided by local governments (LPS)**. In the current context, in which a large set of measures are being deployed at European level to support and encourage entrepreneurship as a driver for economic growth, local governments' involvement is an essential metric for the quality of the local business environment. We also included this dimension to mirror the way national evaluations of the business environment frequently evaluate both economic and political traits. Table 1 shows the economic data used to build every pillar and the importance (*weight*) associated with those pillars in our model.

Of these four domains, we realised a **Local Business Environment Index (LBEI)**,

³ The sectors taken into account to approximate the number of employees employed in the High-Tech fields were: (1) Manufacture of basic pharmaceutical products and pharmaceutical preparations, (2) Manufacture of computer and electronic and optical products, and (3) Manufacture of electrical equipment.

including nine components to estimate how the municipalities from Romania, is attractive in terms of entrepreneurial activity and how the local authorities succeed in supporting private initiative.

The relationship between the LBEI and GDP per capita at the municipality level

Subnational studies have seen a steady growth over the past years, as it is clearer than ever that from an empirical perspective, subnational differences have become too large to ignore. It is often the case that in many countries there are very few localities that record the average regional or national values of any given indicator. Rather, we find large discrepancies and extreme values. Romania is no exception, with some of the fastest growing GDP per capita in Europe at the level of the capital city of Bucharest, and plunging poverty level and economic stagnation in many of its smaller localities.

These discrepancies invite researchers to question overall regional or national assessments and to look for the specificities of economic development and drivers of growth at a more granular level. The heterogeneity of the sample of cases is thus diminished and we can more accurately perceive the mechanisms at play.

In the figure below, we have correlated the attractiveness of entrepreneurship at the municipality level with the nominal GDP per capita estimated for the 41 municipalities. It can be noted that there is a positive relationship between the two variables. Also, the intensity of the relationship (measured by the R square coefficient) is relatively strong, at almost 51%.

Figure no. 1: LBEI and GDP per capita



Source: Authors' calculations

Table no. 2: Local Business Environment Index (LBEI)- municipal level data

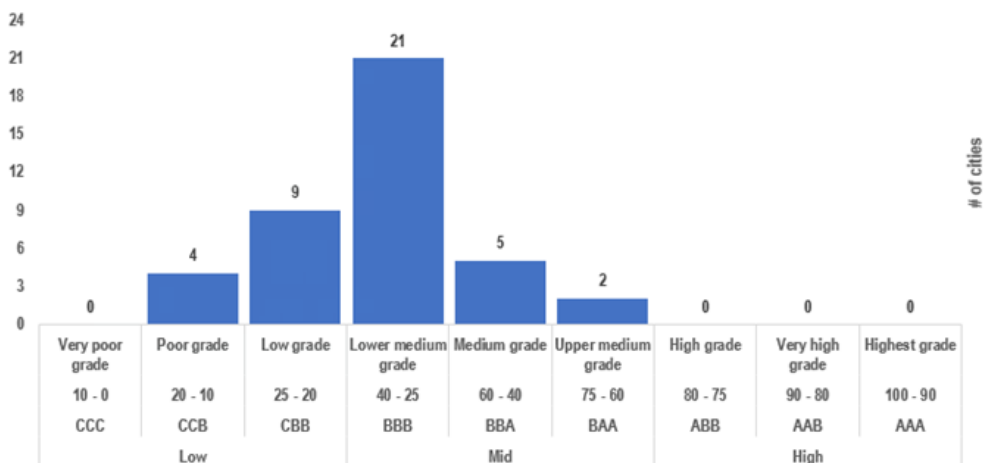
	Innovation (I)	Local entrepreneurship (E)	Investment financing (C)	Local Public Support (LPS)	Total
București	3.2%	27.7%	30.0%	3.8%	64.7%
Cluj-Napoca	13.3%	32.3%	11.7%	6.0%	63.2%
Timișoara	14.8%	20.6%	16.2%	4.6%	56.2%
Alba Iulia	4.0%	15.6%	25.7%	1.7%	47.2%
Sibiu	11.8%	13.1%	14.4%	2.4%	41.6%
Tg. Mureș	6.0%	13.8%	17.4%	3.7%	40.9%
Târgoviște	10.5%	11.1%	15.9%	2.9%	40.4%
Oradea	4.9%	18.7%	12.4%	2.7%	38.7%
Baia Mare	6.2%	19.0%	12.5%	0.9%	38.7%
Brașov	4.4%	16.7%	14.4%	2.1%	37.6%
Pitești	5.3%	14.9%	14.6%	1.8%	36.6%
Bistrița	3.5%	16.5%	10.1%	6.2%	36.2%
Arad	5.7%	14.2%	11.2%	4.5%	35.5%
Craiova	4.3%	14.6%	11.9%	3.9%	34.6%
Ploiești	3.3%	11.2%	16.1%	2.5%	33.1%
Constanța	2.6%	14.9%	12.6%	2.9%	33.1%
Slatina	1.4%	10.2%	15.8%	5.1%	32.5%
Satu Mare	1.3%	14.6%	15.1%	0.7%	31.7%
Iași	7.7%	11.6%	10.1%	1.9%	31.4%
Miercurea Ciuc	0.1%	12.3%	12.5%	5.1%	30.0%
Tg. Jiu	1.4%	11.2%	15.0%	2.2%	29.8%
Deva	3.9%	12.8%	11.7%	0.9%	29.3%
Focșani	0.1%	9.2%	18.2%	1.8%	29.2%
Suceava	3.1%	9.5%	14.7%	1.5%	28.8%
Slobozia	0.8%	8.1%	17.6%	2.3%	28.7%
Zalău	1.5%	14.1%	11.0%	1.0%	27.6%
R. Vâlcea	0.0%	10.9%	9.7%	5.2%	25.8%
Alexandria	2.0%	8.6%	12.0%	2.9%	25.6%
Buzău	0.8%	10.8%	12.7%	0.2%	24.4%
Bacău	1.6%	9.6%	11.4%	1.4%	23.9%
Galați	1.9%	11.8%	7.7%	1.4%	22.8%

Tulcea	0.3%	11.7%	8.6%	1.8%	22.5%
Piatra Neamț	0.7%	8.7%	12.0%	1.0%	22.4%
Călărași	0.0%	8.1%	11.2%	1.8%	21.2%
Reșița	2.1%	9.4%	8.2%	1.3%	21.0%
Sfântu Gheorghe	0.8%	9.5%	7.5%	2.9%	20.6%
Vaslui	0.8%	6.5%	12.1%	1.0%	20.4%
Botoșani	1.5%	7.8%	8.8%	0.7%	18.8%
Brăila	0.0%	10.1%	5.8%	1.5%	17.3%
Giurgiu	0.2%	9.4%	6.3%	0.3%	16.2%
Dr. T. Severin	0.3%	9.7%	4.4%	0.7%	15.2%

Source: Authors' calculations

In the figure below, we categorized the 41 municipalities into three categories (High, Medium and Low). Each of these is then divided into three further categories (High - AAA, AAB, ABB, Mid - BAA, BBA, BBB, and Low - CBB, CCB, CCC), so we classify municipalities from Romania according to the index value obtained on several grades (classes) of entrepreneurial and investment rating. As we can see, the best municipalities from Romania have BAA grades (Bucharest and Cluj-Napoca), representing an Upper Medium grade. Also, the majority of municipalities from Romania (21 from 41 municipalities analysed) have a BBB rating, respectively a Lower Medium grade environment for investment and entrepreneurship.

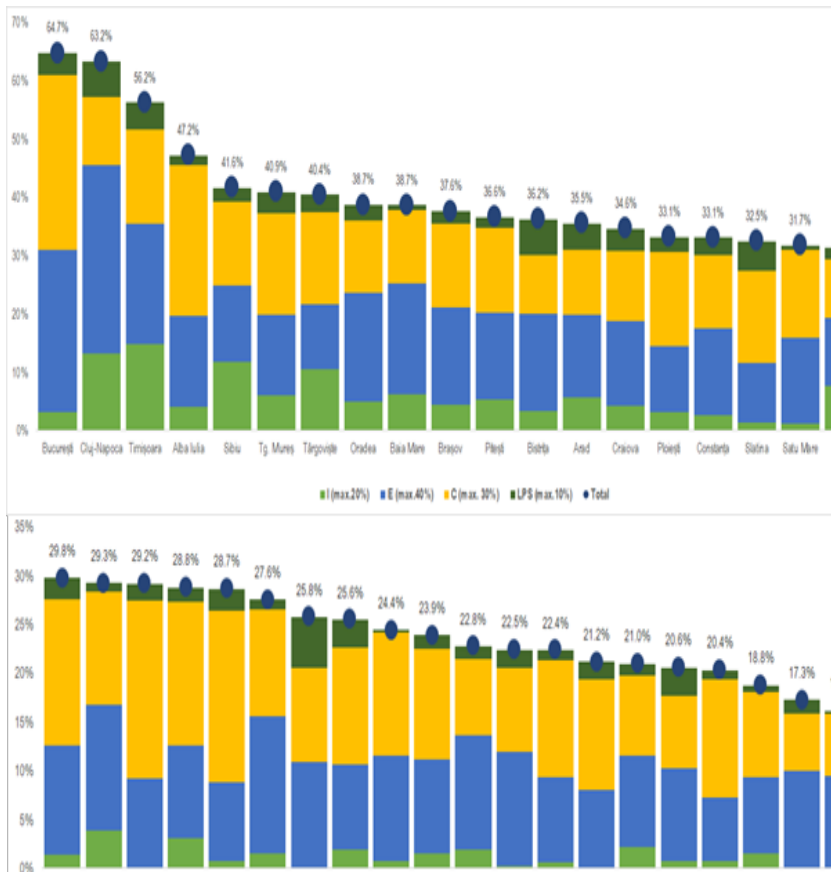
Figure no. 3: LBEI ranking



Ranking table			
High	AAA	100 - 90	Highest grade
	AAB	90 - 80	Very high grade
	ABB	80 - 75	High grade
Mid	BAA	75 - 60	Upper medium grade
	BBA	60 - 40	Medium grade
	BBB	40 - 25	Lower medium grade
Low	CBB	25 - 20	Low grade
	CCB	20 - 10	Poor grade
	CCC	10 - 0	Very poor grade

Source: Authors' calculations

Figure no. 4: Municipalities Ranking based on Local Business Environment Index (LBEI)



Source: Authors' calculations

As mentioned above, the High-Tech sectors taken into consideration here are: (1) Manufacture of basic pharmaceutical products and pharmaceutical preparations, (2) Manufacture of computer and electronic and optical products, and (3) Manufacture of electrical equipment⁴. In Romania, there are 131 companies⁵ (around 9250 employees) that are active in the field of manufacturing basic pharmaceutical products—NACE code 2110. Further, according to Eurostat, more than 860 companies operate in manufacture of computer and electronic and optical products – NACE division code 26, representing 31670 employees.⁶ At the same time, in the sector of manufacturing electrical equipment - NACE division code 27 - in Romania there are 615 companies with more than 40050 employees in 2015.⁷

According to a recent report from LSE Cities, it is often the case that “cities outperform their national contexts for productivity, competitiveness, innovation and economic growth”, and that “cities with high R&D spending have reaped the benefits of such investment, in the form of sustained growth and higher levels of job creation”⁸. In the case of the majority of Romanian municipalities, RDI concentration is closely linked to the size of the academic institutions. In addition to RDI that is based in university campuses, there are also a number of national research institutes that are also predominantly based in Bucharest and the other main municipalities. Under the National Academy, we find approximately 50 institutes in Bucharest, as well as in Cluj, Timișoara or Târgu Mureș.

At the European Union level, expenditure on R&D is highest in the business enterprise sector, followed by the higher education sector, with the government sector ranking only third. In contrast, in Romania, we can see that for a long period of time the private sector and governmental spending were approximately equal parts in total R&D spending, with the latter being even higher in most years. Only recently, we see in 2016 from the latest available data from Eurostat, that the percentage of private sector spending has risen to a comparable level with the EU average. Nevertheless, the higher education spending, while playing a vital role in producing the human capital for innovation and research, is not able to deploy similar levels of funding for such activities as in other member states. We see thus a much higher reliance on public funding, thus creating the basis for a symbiotic relationship between university centres, private actors and public institutions. In this context, support from local governments (LGs) can be an important driver of innovation and economic development, and it is this situation that is reflected in the Index we present here.

⁴ This classification is adopted for international trade activities, in the evaluation of the National Forecasting Commission, http://cnp.ro/user/repository/analiza_comert_exterior.pdf - see classification at pg. 35, Annex 9.

⁵ Most of which can be found in municipal cities, such as: Biotehnos SA (Bucharest), Antibiotice S.A. (Iași), Sindan (Bucharest), Farmacom SA (Bucharest), Meddo (Sebeș), Mark Pharmaceuticals (Iași), CH.P.M Impex SRL (Bucharest), GlaxoSmithKline (Bucharest), Fabiol (Bucharest), Mebra (Brașov), Pasteur Romania (Bucharest) and others.

⁶ Celestica (Bihor county), Zes Zollner Electronic (Satu Mare), Steinel Electronic (Argeș county), Flextronics Romania (Timișoara), Benchmark Electronics Romania (Brașov), Psicontrol (Brașov), Sav Integrated Systems (București), IOR SA (București), Ophir Optics (București)

⁷ Most important companies from Romania in the field of manufacture of electrical equipment are Eaton Electro Productie (București), Romcab (Tg. Mureș), Prysmian Cabluri și Sisteme (Slatina), Coficab Ploiești (Ploiești), Icme Ecab (București), Energobit (București), Electromagnetica (București), Elba (Timișoara)

⁸ https://files.lsecities.net/files/2015/02/Innovation-in-Europes-Cities_Bloomberg-Mayors-Challenge1.pdf, last accessed on 11.03.2018

Romania developed back in 2014 the Operational Programme for Competitiveness 2014-2020 that took as a cornerstone in its funding priorities and eligible projects two National Strategies: National Strategy for Competitiveness 2014-2020, and the National Research, Development and Innovation Strategy 2014-2020. Within each of these tactics, a number of strategic sectors have been outlined, with the purpose of concentrating European and national funding on those priorities. Smart Specialization was the frameworks employed to define these priority sectors for Romania. Smart Specialization is a methodology adopted by the European Commission for the implementation of the Cohesion Policy, aiming to establish the specific areas in which countries and regions have „a competitive advantage or have the potential to generate knowledge-driven growth”⁹.

Conclusions

This article presented an original dataset and methodology for evaluating the economic attractiveness of the main municipalities in Romania. Building upon the landmark theoretical models of Schumpeter, as well as recent empirical evidence, we developed a metric for systematic comparison across four key dimensions: (1) local entrepreneurship activity (E), (2) innovation potential (I), (3) investment financing capacity (C) and (4) support provided by local governments (LPS). The resulting Local Business Environment Index (LBEI) allows us to scale the Romanian municipalities in terms of economic development potential at local level. In an age of growing disparities at a subnational level, a fine-grained tool of assessment such as IBAA can much better reflect the economic relations on the ground than larger regional measurements that rely on average values. We thus adopt a “mesoeconomic” perspective on what are the key drivers of economic development at municipal level.

In the second section of this article we explore one of the subindicators of the IBAA—the innovation potential. We find that within this dimension, several municipalities in Romania score much higher than the capital city of Bucharest - leaders in this ranking are the university cities of Cluj-Napoca and Timișoara. This brings to light the degree to which different cities in Romania have different competitive advantages and strategies in the intentional or unintentional pursuit of economic development.

Our findings can be further developed in several ways. Firstly, the logic of the metric we propose here is permissible to annual evaluations, thus allowing us to create in the future a cross-temporal analysis of economic development dynamics at subnational levels. Secondly, based on the relative values of each of the subindicators in the LBEI, in-depth and comparative case studies can be developed. For example, a previous study explored the measures that local public authorities have adopted in order to have a larger level of European Funding than other municipalities (Volintiru et al 2017). One can easily imagine similar studies on the benchmark municipalities on entrepreneurial activity, or innovation potential. Thirdly, the methodology we propose here can be reproduced in the case of other European Union member states, so as to achieve a greater comparative perspective across different national contexts.

⁹ <http://s3platform.jrc.ec.europa.eu/what-is-smart-specialisation->, last accessed on 13.03.2018

References:

- Acs, Z.J. and Audretsch, D.B. (1992). The social and economic impact of entrepreneurship. *The State of the Art of Entrepreneurship*, Boston, MA: PWS-Kent Publishing Company, pp.45-67.
- Audretsch, D.B. and Thurik, A.R. (2000). Capitalism and democracy in the 21st century: from the managed to the entrepreneurial economy. *Journal of evolutionary economics*, 10(1-2), pp.17-34.
- Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & finance*, 30(11), 2931-2943.
- Beck, T., Demirgüç-Kunt, A., & Maksimovic, V. (2008). Financing patterns around the world: Are small firms different?. *Journal of Financial Economics*, 89(3), 467-487.
- Bland, G., and Vaz, P. (2017). *An Effective Tool for Promoting Local Growth and Competitiveness? The Sustainability of the Subnational Business Environment Index*. RTI Press Publication No. OP-0038-1704. Research Triangle Park, NC: RTI Press. <https://doi.org/10.3768/rtipress.2017.op.0038.1704>.
- Capello, R., & Kroll, H. (2016). From theory to practice in smart specialization strategy: emerging limits and possible future trajectories. *European Planning Studies*, 24(8), 1393-1406.
- Carlsson, B. (1999). Small business, entrepreneurship, and industrial dynamics. In *Are Small Firms Important? Their Role and Impact* (pp. 99-110). Springer, Boston, MA.
- Cooke, P. N., & Lazzeretti, L. (Eds.). (2008). *Creative cities, cultural clusters and local economic development*. Edward Elgar Publishing.
- Cristea, M., Mare, C., Moldovan, C., China, A. M., Farole, T., Vinţan, A., and Ionescu-Heroiu, M. (2017). Magnet Cities: Migration and Commuting in Romania. World Bank Report
- D'Attoma, J., Volintiru, C., & Steinmo, S. 2017. Willing to share? Tax compliance and gender in Europe and America. *Research & Politics*, 4(2), 2053168017707151.
- Ebner, A. (2006). Schumpeterian entrepreneurship revisited: historical specificity and the phases of capitalist development. *Journal of the History of Economic Thought*, 28(3), pp.315-332.
- Georgescu-Roegen, N. (1971). *The law of entropy and the economic process*. Harvard University Press.
- Howells, J. (2005). Innovation and regional economic development: A matter of perspective?. *Research policy*, 34(8), 1220-1234.
- McCann, P., & Ortega-Argilés, R. (2015). Smart specialization, regional growth and applications to European Union cohesion policy. *Regional Studies*, 49(8), 1291-1302.

- Nistotskaya, M., Charron, N., & Lapuente, V. (2015). The wealth of regions: quality of government and SMEs in 172 European regions. *Environment and Planning C: Government and Policy*, 33(5), 1125-1155.
- Porter M.E. (1990). *The Competitive Advantage of Nations*. The Free Press, New York.
- Porter, M. E. (2000). Location, competition, and economic development: Local clusters in a global economy. *Economic development quarterly*, 14(1), 15-34.
- Rosenfeld, S. A. (1997). Bringing business clusters into the mainstream of economic development. *European planning studies*, 5(1), 3-23.
- Schumpeter, J. A. (1934). *The Theory of Economic Development*, Cambridge, Harvard University Press.
- Silva, D. (2018). *DAS BOOK On Growth and Development*. Club România Publishing House
- Thurik, R. and Wennekers, S. (2004). Entrepreneurship, small business and economic growth. *Journal of small business and enterprise development*, 11(1), pp.140-149.
- Todor, A. (2018). Willing to Pay? The Politics of Engendering Faith. In Steinmo, S. (ed.) *The Leap of Faith: The fiscal foundations of successful government in Europe and America*, Oxford University Press (upcoming)
- Volintiru, C., & Miron, D. (2015). Business environment and creative industries in Romania. *Amfiteatru Economic*, 17(38), 358.
- Volintiru, C., Ionescu-Heroiu, M. and Goga, S. (2017). *Benchmarking EU Fund Absorption at Subnational Level*. World Bank Report. 10.13140/RG.2.2.10152.88326. Available here: https://www.researchgate.net/publication/321156173_Benchmarking_EU_Fund_Absorption_in_Romanian_Municipalities
- Volintiru, C. (2018). Tax Collection without Consent: State-Building in Romania. In Steinmo, S. (ed.) *The Leap of Faith: The fiscal foundations of successful government in Europe and America*, Oxford University Press.
- Volintiru, M., Volintiru, C. and Ștefan, G. (2018). Young Romanian Diaspora: Entrepreneurs Outside or Inside their Home Country? *European Journal of Interdisciplinary Affairs*. (upcoming)
- Wright, M., Clarysse, B., Lockett, A., & Knockaert, M. (2008). Mid-range universities' linkages with industry: Knowledge types and the role of intermediaries. *Research policy*, 37(8), 1205-1223.
- Youtie, J., & Shapira, P. (2008). Building an innovation hub: A case study of the transformation of university roles in regional technological and economic development. *Research policy*, 37(8), 1188-1204.

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