

# **Economic Development, Technological Change, and Growth**

## **Barometers of Regional Development Trends in the case of South-East region of Romania**

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**Abstract:** «How to approach the sustainable spatial development in South-East region of Romania? » is the main question to which this research-paper tries to find answers. New development trajectories are needed in order to tackle the current challenges posed by the rapid dynamics of the labour market, in a globalized, increasingly digitized economy, and in the context of technological, climate and demographic changes. This paper analysis the internal socio-economic inequalities that South-East region of Romania experiences, highlighting the main challenges of territorial development. The internal development capability of South-East region of Romania is presented by an inventory of needs and resources during the 2010-2016 period, using the most recent statistical data available on the website of Romanian National Institute of Statistics. This region is confronted with multiple vulnerabilities such as mass unemployment (due to the lower wages and the territorial proximity with capital-region: Bucharest-Ilfov), insufficient public income transfers, out-migration (causing high social costs and also constituting a barrier to regional adjustment) and if these trends persist in long-run, at the extreme, possibly desertification. Moreover, in absence of some basic preconditions for regional development, in terms of infrastructure, accessibility, basic public services, growth could be a dream and not a reality. The paper concludes by proposing suggestions on how to respond to the specific and particular challenges that the South-East region of Romania is now facing, on the basis of the previous conceptual and empirical evidence.

**Keywords:** knowledge-based economy; governance connectivity; territorial capital; sustainable economic growth; training and education.

**JEL Classification:** R58; O15; R11

### **1. Introduction**

This article explores the governance challenges of South-East region of Romania and the persistent gap between rhetoric and the reality of regional policy. The paper is organized as follows. The debate on sustainable territorial development is illustrated in the first section together with a reflection on the importance of

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territorial capital of South-East region of Romania. The current challenges that the South-East region of Romania are facing, in terms of demographical, economic, and social profile, are presented in the second section, leading to some concluding remarks regarding the need of strategic development planning and strong linkages with sectorial policies, trans-territorial networking and governance connectivity that's equivalent to equilibrated and equitable presence of diversified development trajectories across counties (section 3).

## **2. What is Sustainable Territorial Development?**

Sustainable development in a holistic perspective, where environmental, cultural, economic and social concerns intersect, was for the first time used in Brundtland Report (1987) – “Our Common Future” which contains the following definition: “a process of changes in which exploitation of resources, directions of investments, directions of technical progress and institutional changes remain in harmony and preserve now and for the future a possibility of satisfying human aspirations”. The concept of sustainable development appeared for the first time, in the primary law of the Community in 1992 in the Treaty of Maastricht, in reference to economic, environmental and regional issues and afterwards this concept was assumed not only as a principle or a task, but also as the goal of the European Union functioning (art. 3 clause 5 of the TEU). In the doctrine it is noted that the concept of sustainable development is too general and has a pronounced program character that causes the formation of numerous ideas and possibilities of interpretation. As a consequence, in the absence of a cohesive definition of sustainable development in the European Union legislation, no consequences can be drawn against any state, institution and organization in case of the lack of its implementation or even an action which is contrary to an idea of sustainable development.

## **3. Current Challenges in South-East Region of Romania: Complexity and Opportunities**

The special peculiarities of the socio-economic life in the South-East region of Romania are imprinted by the strategic positioning in the vicinity of the Black Sea (it is the only coastline region of Romania); the diversity of reliefs (the Danube Delta, the second largest and best preserved of the deltas in Europe; the presence of more than half of the fertile fields of the Bărăgan Field; the mountainous area of the Bend Sub-Carpaths, which occupies about 50% of the region's surface); the most famous vineyards and wine-growing centres in the country (the region occupies the first place from the vineyards perspective); the variety of natural resources (the only surface oil deposit in Europe is located in Buzău county), the high energy potential,

etc.. The South-East region comprises 6 counties: Brăila, Buzău, Constanța, Galați, Tulcea and Vrancea.



**Figure 1. The South-East Region of Romania**

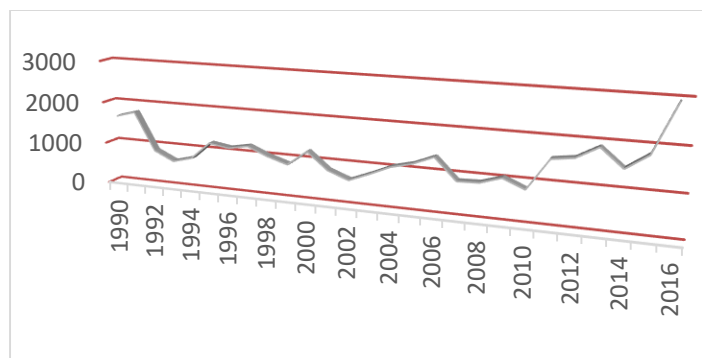
### **3.1. Demographical profile**

On July 1st 2017, the population of the South East region numbered 2,849,489 people, representing 12.83% of the total population of Romania. The South East is the third region in number of population, after North-East and South-Muntenia. The most populated counties of the region are: Constanta, with 768,170 inhabitants (26.95% of the total population of the region), Galați, with 628,146 inhabitants (22.04% of the total population of the region) and Buzău, with 472,743 inhabitants (16.59% of the total population of the region). On the opposite side are the counties of Vrancea, with 388,495 inhabitants (13.63% of the total population of the region), Brăila, with 350 874 inhabitants (12.31% of the total population of the region) and Tulcea, with 2,410,611 inhabitants (8.45% of total population of the region).

Between 2008 and 2017, the region's population at July 1st decreased continuously. All counties of the region experienced population fluctuations during the analysed period. In absolute terms, the largest population decreases were recorded in Buzau County, where in 2017, the population decreased by 28,871 persons compared to 2008 and in Braila County, where the differences in absolute values were 27,328 people. In percentages, the highest reductions were recorded in the counties of Braila (7.23%), Tulcea (6.03%) and Buzau (5.76%). Only Constanta County recorded a total population increases of 0.20%.

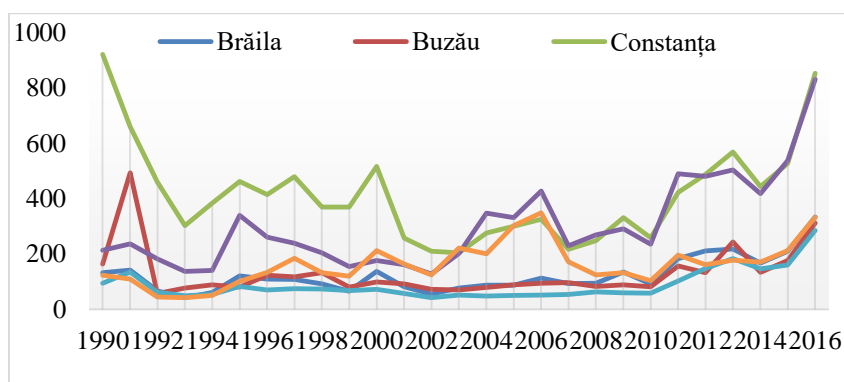
### **3.2. The Migratory Movement**

The evolution of the number of permanent emigrants for the period 2006-2016 shows a fluctuating trend both at the regional level and at the level of each county, the overall trend being positive.



**Figure 2. Evolution of the Number of Permanent Emigrants in the South-East Region (2006-2016)**

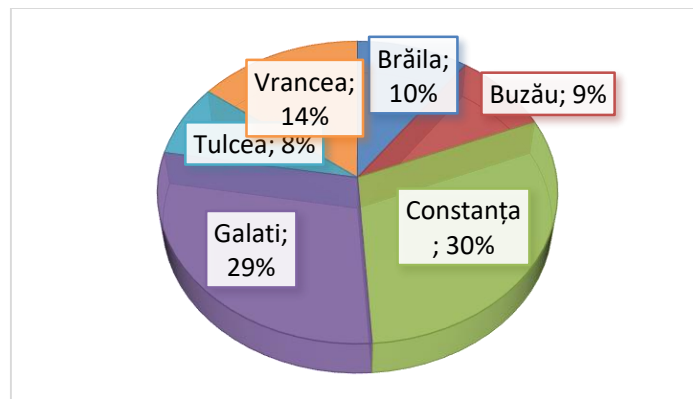
Source: Processing after NIS, TEMPO data base, June 2018, POP309A



**Figure 3. Evolution of the Number of Permanent Emigrants in the South-East Region, at county level (2006-2016)**

Source: Processing after NIS, TEMPO data base, June 2018, POP309A

The counties most affected by the migratory movement of population during 1990-2016 were: Constanta and Galati.

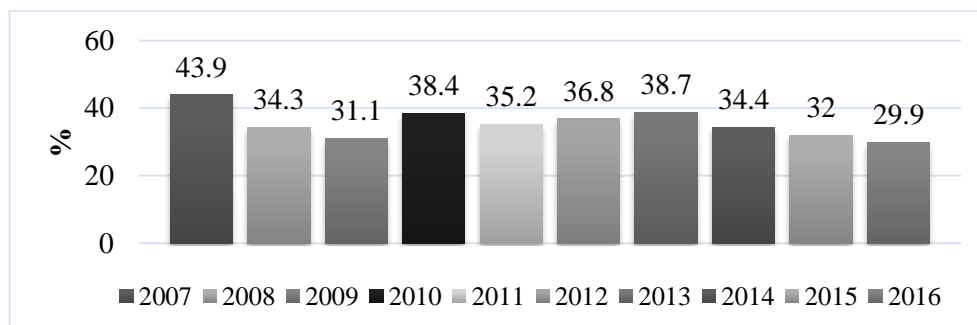


**Figure 4. Evolution of the Number of Permanent Emigrants at Intra-Regional Level (2016 / 2006)**

*Source: Processing after NIS, TEMPO data base, June 2018, POP309A*

### 3.3. The Living Standard

The living standard can be determined using different indicators. The NIS provides us with the rate of severe material deprivation and the risk of poverty or social exclusion (AROPE).

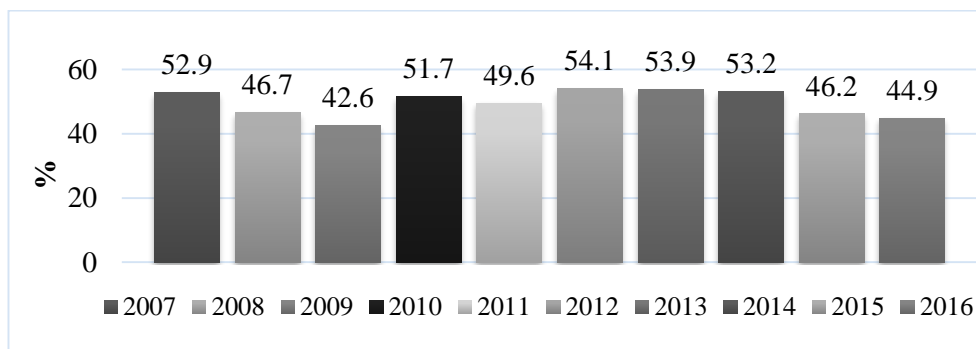


**Figure 5. The Rate of Severe Material Deprivation in the South-East Region (2007-2016)**

*Source: Processing after NIS, TEMPO data base, June 2018, SAR112C*

With a value of 29.9% severe material deprivation rate, the South East region ranks first among the country's development regions, 6.1 percentage points above the national average. The evolution of the indicator over the period 2007-2016 is fluctuating, with a total decline from 43.9% in 2007 to 29.9% in 2016. From the perspective of the AROPE indicator (the poverty risk or social exclusion rate), the South-East region ranks second among the regions of Romania, after the North-East

region, with a value of 44.9% in 2016, a value of more than 6.1 points percentages compared to the national average.



**Figure 6. Poverty Ratio or Social Exclusion Rates in South-East Region (2007-2016)**

*Source: Processing after NIS, TEMPO data base, June 2018, SAR111C*

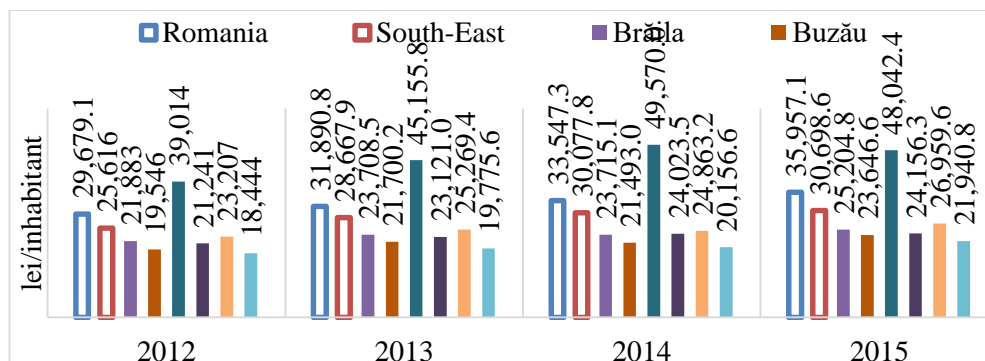
The evolution of this indicator over 2007-2016 period, for the South-East region, shows that no significant improvements have been made, but there has been a slight downward trend over the last four years. The negative demographic change is an important cause for these poor economic results.

### 3.4. The Economic Performance

Relevant economic indicators, selected to characterize the economic development of South-East are regional GDP, regional GDP per capita and gross value added by sector of economic activity.

The value of regional GDP in million lei was 76184.3 in 2015, representing 10.69% of Romania's GDP. The evolution of the Gross Domestic Product in the South-East Region in the period 2012-2015 shows an upward trend, this positive dynamics being recorded at national and European level.

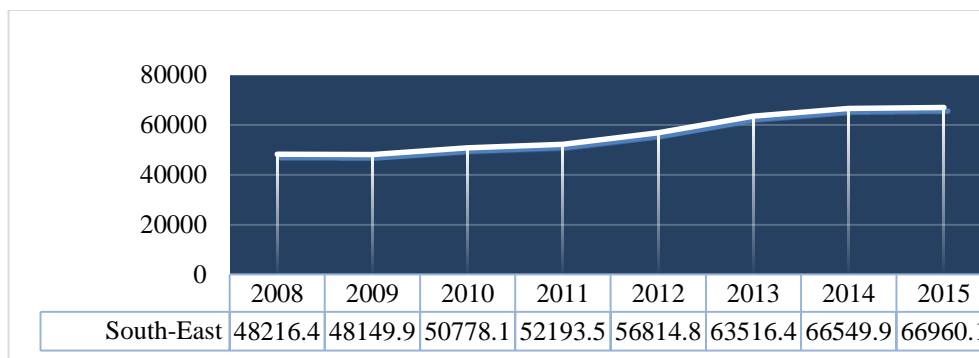
In the 2012-2015 timeframe, regional GDP per capita also recorded a positive trend, following the trend of national development, the only county that experienced a decrease in this indicator in 2015 compared to 2014, being Constanța. However, this county has the highest value of GDP per capita, throughout the period, significantly detaching the counties of Tulcea and Braila. The lowest values of this indicator throughout the analysed period were recorded in Vrancea County. This information reflects the fact that the region has undergone a period of economic recovery, which can also be felt in the welfare of the population.



**Figure 7. Evolution of GDP per capita at Current Prices**

Source: NIS, National Regional Accounts 2014-2015 and Regional National Accounts 2010-2014, <http://www.insse.ro/cms/en/tags/regions-regional>.

In terms of gross value added by sector of economic activity in the South East it can be noticed that the sectors with the largest contribution to GVA formation in 2015 were: industry with a contribution of 32%, followed by: wholesale, retail, transport, accommodation and restaurants (20%); public administration and defense, social security in the public system, education, health and social care (11%) and real estate transactions (10%). The smallest contribution to the gross value added were the financial and insurance intermediation (1%) and information and communication (2%). At the intra-regional level, it is noted that in 2015, the industry sector contributed most to the formation of GVA in the following counties: Constanta (37.7%), Buzau (32.2%) and Galati (27.5%), followed by the wholesale and retail sector, repair of motor vehicles and motorcycles, transport and storage, hotels and restaurants; whose contribution (around 18%) is balanced distributed between the South-East' counties, with the exception of Constanta County, where the contribution of this sector was 22.5%, above the average for regional (i.e., 20.1%). GVA evolution in the South-East region presents an upward trend, from 48216.4 million lei in 2008 to 66.960,1 million in 2015. Throughout the analysed time horizon the share of regional GVA in national GVA remained relatively constant, around of 11%, the trend of this indicator being slightly increasing.



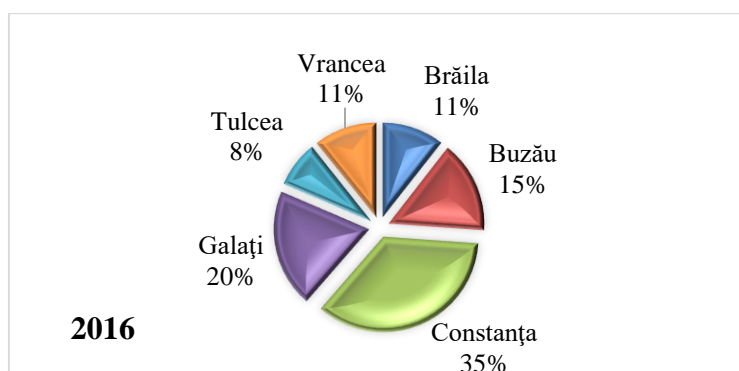
**Figure 8. Evolution of the Regional GVA 2008 - 2015 (Lei - million current prices)**

*Source: NIS, TEMPO data base, June 2018, CON103G*

### 3.5. The Business Environment

The business environment is perceived as a source of innovation and socio-economic realignment of the community to the standards imposed by globalization. The analysis of the structure of local active units, including economic sectors and size classes, provides complex information on size, business profile, spatial distribution at the intra-regional level, etc., which can be used subsequently in studies and forecasts by political decision makers at local/regional level. In order to illustrate the structure of local units active in the South-East region we will consider statistical information on active local units by activity of national economy and its related workforce.

The hierarchy of South-East's counties based on the number of local active units, shows that the business environment is more developed in the counties of Constanta and Galati, at the opposite pole being Tulcea County.



**Figure 9. Intra-Regional Distribution of Active Local Units**

*Source: NIS, TEMPO data base, June 2018, INT101R*



In 2016, the hierarchy of the counties of the South-East region, according to the sectors of activity developed by the business environment, corresponding to the NACE Rev.2 classification, was presented as follows:

*A - Agriculture, forestry and fishing:* Constanta (25.48%), Buzau (15.91%), Braila (15.77%), Tulcea (15.49%), Galati (14.47%) and Vrancea (12.85%);

*B - Extractive Industries:* Constanta (41.86%), Tulcea (18.6%), Buzau (15.5%), Vrancea (10.85%), Galați (10.07%) and Braila (3.1%);

*C - Manufacturing:* Constanta (30.46%), Buzau (19.24%), Galati (17.45%), Vrancea (14.95%), Braila (11.12%) and Tulcea (6.75%);

*D - Production and supply of electric and thermal energy, gas, hot water and air conditioning:* Constanta (39,16%), Tulcea (20,97%), Buzau (13,98%), Braila (11,18%), Galați (7.69%) and Vrancea (6.99%);

*E - Water distribution; sanitation, waste management, decontamination activities:* Constanta (35.62%), Galati (23.17%), Buzau (14.59%), Vrancea (11.15%); Tulcea (10.72%) and Braila (4.72%);

*F - Constructions:* Constanta (34%), Galati (23.63%), Buzau (15.7%), Vrancea (11.75%), Braila (8.77%) and Tulcea (6.12%);

*G - Wholesale and retail trade; repair of motor vehicles and motorcycles:* Constanta (29.57%), Galați (23.16%), Buzau (16.98%), Braila (11.45%), Vrancea (11.53%) and Tulcea (7.27%);

*H - Transport and storage:* Constanta (42.28%), Buzau (15.67%), Galati (15.74%), Braila (10%), Vrancea (8.34%), and Tulcea (7.95%);

*I - Hotels and restaurants:* Constanta (49.82%), Galati (15.44%), Tulcea (10.36%), Buzau (8.7%), Braila (8.32%) and Vrancea (7.34%);

*J - Information and communications:* Constanta (38.38%), Galati (21.46%), Buzau (13.18%), Braila (10.32%), Vrancea (10.10%) and Tulcea (6.52%);

*K - Financial intermediation and insurance:* Constanta (34.28%), Galați (23.73%), Buzău (16.66%), Braila (12.55%), Vrancea (8.43%) and Tulcea (4.32%);

*L - Real estate transactions:* Constanta (51.46%), Galați (18.92%), Brăila (10.61%), Buzău (8%), Tulcea (5.61%) and Vrancea (5.38%);

*M - Professional, scientific and technical activities:* Constanta (42.42%), Galati (17.79%), Buzau (15.06%), Vrancea (9.04%), Braila (8.32%) and Tulcea (7.35%);

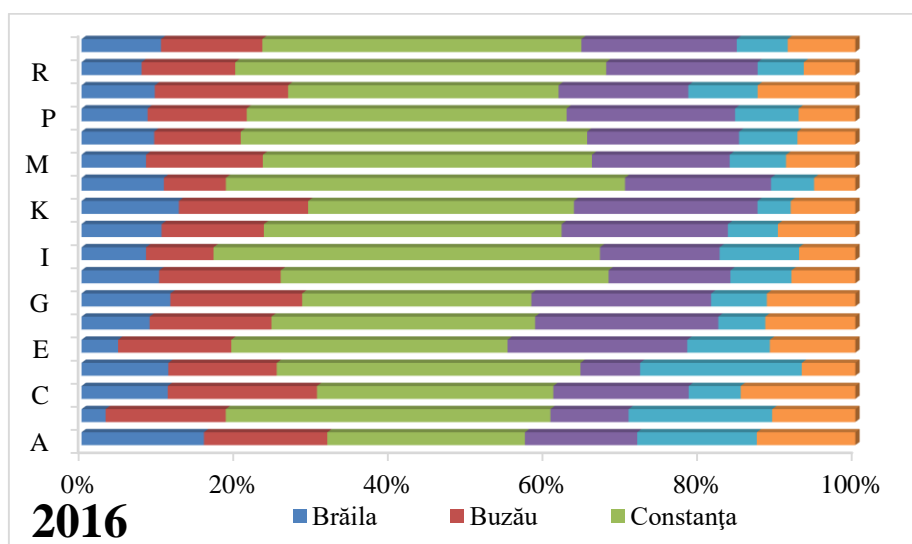
*N - Administrative and support service activities:* Constanta (44.66%), Galați (19.62%), Buzău (11.16%), Brăila (9.36%), Vrancea and Tulcea (7.56%);

*P - Education:* Constanta (41.25%), Galati (21.74%), Buzau (12.78%), Braila (8.52%), Tulcea (8.29%) and Vrancea (7.39%);

*Q - Health and social assistance:* Constanta (34.88%), Buzau (17.17%), Galați (16.72%), Vrancea (12.75%), Braila (9.45%) and Tulcea (9%);

*R - Performing, cultural and recreational activities:* Constanta (47.83%), Galați (19.58%), Buzău (12.07%), Braila (7.74%), Vrancea (6.03%);

*S - Other service activities:* Constanta (41.14%), Galati (20.07%), Buzau (13.05%), Braila (10.25%), Vrancea (8.82%) and Tulcea (6.65%).



**Figure 10. Intra-Regional Distribution of Active Local Units by of National Economy' Activities, at Section Level NACE Rev. 2**

Source: NIS, TEMPO data base, June 2018, INT101R

In terms of intra-regional distribution of active local units by main sectors of activity of the national economy, we notice that at the level of 2016, Constanta County outperforms the other counties of South-East region, in all branches of economic activity.

By analysing the density of active units, determined as the ratio between the number of active units and the surface of the county, it is observed that the most developed counties are Constanta and Galati, and the last one is Tulcea County. In Constanta, if the density was 3.1 in 2010 active units per square kilometre, it decreased slightly to 3 active units per square kilometre, by 2016. These disparities between Constanța and Tulcea can be explained by the fact that Constanța County is a growth pole at

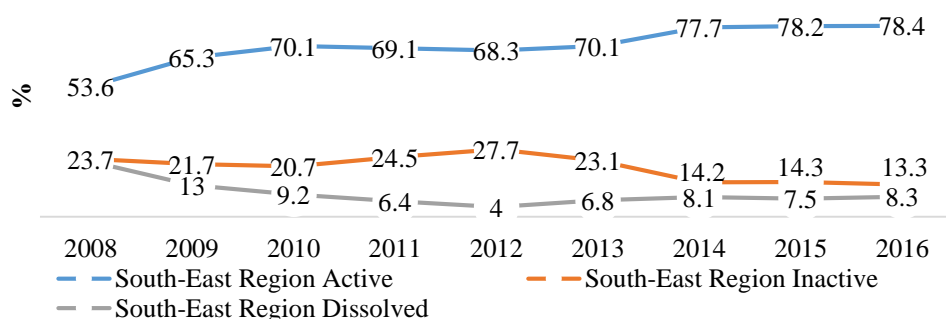
the level of the region, attracting a considerable number of foreign direct investments, but also European and governmental funds, while Tulcea is a county with a low population and a large surface of protected areas, which limits the possibility of business development.

**Table 2. The Density of the Active Units, at the County Level, 2010-2016 (%)**

County	2010	2011	2012	2013	2014	2015	2016
Brăila	1.4	1.3	1.3	1.3	1.4	1.4	1.3
Buzău	1.6	1.4	1.4	1.5	1.5	1.5	1.5
Constanța	3.1	2.8	2.9	3.0	3.0	3.0	3.0
Galați	2.6	2.3	2.5	2.5	2.6	2.6	2.7
Tulcea	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Vrancea	1.3	1.2	1.2	1.3	1.3	1.3	1.3

Source: NIS processing, TEMPO database, June 2018, INT101R

With regard to the number of start-ups in the South-East region, at the level of 2016, 79% were active, 13% inactive and 8% dissolved. Analysing the dynamics of the number of newly created active enterprises in the period 2010-2016, there is a slight increase in the number of active enterprises starting with 2013 and a decrease in the number of inactive enterprises.



**Figure 11 Newly Created Enterprises One Year After Their Establishment**

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 111Y

In 2016, nearly half of newly created firms (50.7%), were founded by graduates of secondary and higher education, South-East region being ranked in last place from this perspective, well below the level recorded at national level, of 60.3%.

SMEs can be an important factor in accelerating the process of regional development. According to the “The White Charter of Romania SMEs” (2016

edition), the South-East region hosts 13.36% of all small and medium-sized enterprises.

### **3.6. Labour factor**

The labour market is a barometer of the socio-economic development trends of the region. At the level of 2016, the distribution of personnel from the local units active in the South-East region, by field of activity, shows a high share of 28% in the manufacturing sector, 24% in the wholesale and retail sector; repair of motor vehicles and motorcycles and about 10% in the fields of transport and storage; construction; real estate transactions, rentals and services mainly provided to businesses. Unfortunately, it can be noticed a trend of specialization in low-value-added and low-productivity industries. The specialization of the South-East economy in these low-value and low labour productivity sectors is closely linked to the salaries of the personnel working in these areas, the trend of the last years being the increase in the share of employees in the minimum wage area, in total workforce.

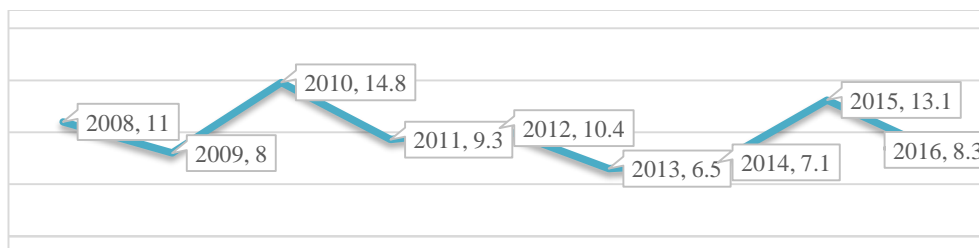
“Labour market dynamics survey of the main employing industries in Romania in the period 2016-2017” by PIAROM shows that the share of the South-East region in the total national employment contracts is only 9.36%, the number of contracts work at the level of 2017, being 486,990. Thus, the South-East region occupies the penultimate place in the ranking of the 8 development regions, this position being also explained by the location of the region in the vicinity of the capital, which allows easy relocation and intra-regional mobility of the labour force, considering that the level of salaries in Bucharest is 24.71% higher than the national average. Average wage levels far below national and even regional averages are recorded in Vrancea (-25.00% vs. the national average, -12.97% compared to the average of the South-East region), Braila (-20.88% vs. the national average, -8.19% compared to the average of the South-East region) and Buzau (-20.88% compared to the national average, -8.19% compared to the average for the South-East region).

**Table 2. Distribution of Employment Contracts by Wage Intervals 01.10.2017 - Comparative Analysis at County Level in the South-East Region**

County	Brăila	Buzău	Constanța	Galați	Tulcea	Vrancea
<i>Below 350 €, %</i>	58.79	59.32	51.87	50.51	53.63	62.66
<i>350-400 €, %</i>	10.26	9.11	8.68	12.15	9.20	8.42
<i>400-500 €, %</i>	10.65	11.19	12.74	13.78	11.75	10.21
<i>500-600 €, %</i>	6.32	6.61	8.41	7.21	7.02	5.77
<i>600-700 €, %</i>	5.47	4.79	5.86	5.57	6.19	4.91
<i>700-1000 €, %</i>	5.86	5.96	7.73	7.27	8.96	5.61
<i>1.000-2000 €, %</i>	2.35	2.58	4.09	3.12	2.92	2.26
<i>Over 2000 €, %</i>	0.28	0.43	0.63	0.39	0.34	0.17
<i>Deviation from the regional average %</i>	<b>-8.19</b>	<b>-8.19</b>	<b>4.78</b>	<b>2.39</b>	<b>1.37</b>	<b>-12.97</b>
<i>Deviation from the national average %</i>	<b>-20.88</b>	<b>-20.88</b>	<b>-9.71</b>	<b>-11.76</b>	<b>-12.65</b>	<b>-25.00</b>

*Source: PIAROM, Labour market dynamics survey of the main employing industries in Romania 2016-2017*

The evolution of the labour force in newly established enterprises with foreign capital is sinusoidal at the level of the South-East region, which can be explained by the selection criteria applied (foreign languages, skills to work in multi-cultural environments, willingness to travel for business interests, etc.) but also by the dynamics of these enterprises in the South-East region.



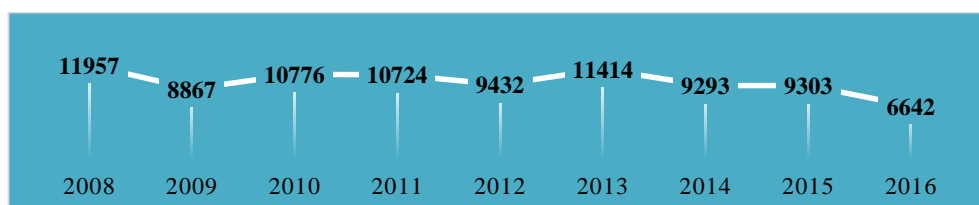
**Figure 12. Evolution of Labour Force Share of Newly Created Enterprises with Foreign Capital in the Period 2008-2016 (%)**

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 111Y

### 3.7. Investments

Statistical data on investment reflects important information on the degree of modernization of the business environment, which is a particularly relevant element in determining the level of economic development of the region.

Gross investment in tangible goods of local units in the South-East region has declined significantly in recent years, from 11,414 million lei in 2013 to 6,642 million lei in 2016. This negative trend is worrying because the level of gross investments is reflected in the capacity to upgrade the equipment, develop of advanced technologies, and expand of the information transfer infrastructure and, in the long run, the level of these investments affects the quality standards offered.



**Figure 13. Evolution of Gross Investments in Tangible Goods from Local Units at the Level of the South-East Region, During 2008-2016 (Million Lei)**

Source: NIS, TEMPO data base, June 2018, Business Demographics - INT 105D

Regarding the volume of gross investments by branch of activity in the South-East region, in 2016, there is a significant reduction in the area of water distribution, sanitation, waste management, decontamination activities (about 77, 55%); production and supply of electricity and heat, gas, hot water and air conditioning (by approximately 45.71%); manufacturing (approximately 35.12%). This strong downward trend in the areas mentioned adversely affect the business environment in the region, and the attractiveness of the region as a whole, given that infrastructure areas have been affected. Investments in “construction” have exceeded by approximately 8.75% the value of investments in 2015 and in the ICT sector there is

an increase in the volume of investments in 2016, by about 11.36%, compared to the previous year.

#### **4. How to do Otherwise?**

Achieving sustainable territorial development is an aim for the whole society in the European Union. Sustainability is perceived from three different perspectives: economic sustainability (financial sustainability, services, household needs, agriculture growth, industrial growth, SMEs, efficient use of labour); environmental sustainability (water and soil conservation, climate change, disaster risk reduction, renewable energies, food and environmental legislation, biodiversity, ecosystem integrity, clear air and water) and socio-cultural sustainability (sustainable urbanism, education, governance sustainability, human development, equity, participation, social mobility, cultural preservation). The entities such as regions and cities play a very important role in achieving sustainability. According to “The 2030 Agenda for Sustainable Development”, their main priorities should be: no poverty; zero hunger; good health and well-being; quality education; gender equality; clean water and sanitation; affordable and clean energy; decent work and economic growth; industry, innovation and infrastructure; reduced inequalities; sustainable cities and communities; responsible consumption and production; climate action; life below water and life on land; peace, justice and strong institutions; and finally partnership for the goals (Eurostat, 2016, p. 139).

Governance connectivity is a starting point for achieving sustainable territorial development, because development policies at regional and local level are drastically influenced by national and sectorial policy decisions. Therefore it requires good communication between public authorities at different levels of governance, long run predictability and consistency in policy making.

Withal, it is very important to have precise knowledge of when a political intervention is applied, the segment in which it applies (activity, location, group of companies, etc.) and with what intensity.

Moreover, in designing and implementing development strategies, the time factor is particularly important, the rapid pace of change arising from globalization and the process of European integration makes the measures and instruments that have been successful in a certain time, to be totally inappropriate at a later stage. On the other hand, the model of taking good-practice lessons can only be used to a small extent, because the regional economies are not homogeneous and consequently the success stories of a region cannot be easily understood and transferred to another region.

One of the core problems in South-East region is the decrease of population, which has an impact on other indicators of territory development. Economic revival may

slow down the pace of migration, but a dynamic economy requires a regulatory environment conducive to economic activity and a proper administration of public goods. Without a favourable environment, businesses cannot create enough jobs and people will relocate. An innovative network strategy is also necessary in order to ensure the region's territorial development. Connecting people from companies, industries, universities and authorities may increase the efficiency of using production, financial and infrastructural resources. Facilitating flexible structures for interaction between economic entities in the region, on the one hand, and between them and policy decision-makers from local and regional level, will result in an integrated territorial development. Digital transformation plays also an important role in strengthening territorial cohesion and in supporting the growth and jobs creation, as well as a socio-ecological development in the South-East region. Another possible solution is to promote a knowledge-based economy by strengthening synergies between education, research and innovation activities.

## 5. Conclusion

Deep knowledge of socio-economic and cultural peculiarities of a particular area, is essential in designing policies and strategies for territorial development, and this study attempts to bring more information in this direction. This paper contains the data about the territorial development indicators of the 6 counties from the South-East region of Romania and the results of the first steps of this research reveal the need for rethinking strategic planning of this area. The main research methods involved were: theoretical study, empirical – data collection, statistical – data processing, comparative analysis and synthesis.

The main conclusions: territories of counties in South-East region of Romania have uneven development and stratification; there is the big difference between Constanta and Galati and other cities, which is an obstacle in the balanced development of this region as a whole. The results have confirmed that the territorial development is not balanced, local advantages are not used, South-East region having a fragmented administrative – territorial system.

The results obtained can be utilized in subsequent years to examine the pace and directions of changes needed in order to decrease the significant developmental disparities between the counties of South-East region. The purpose of rethinking strategic planning is to ensure such spatial development planning that would raise the quality of living environment, ensure sustainable, effective and rational use of territories and other resources, as well as ensure targeted and balanced economic development.



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